# INDIA SKILLS REPORT 2024

## IMPACT OF ARTIFICIAL INTELLIGENCE ON

### SKILLS | WORK | MOBILITY
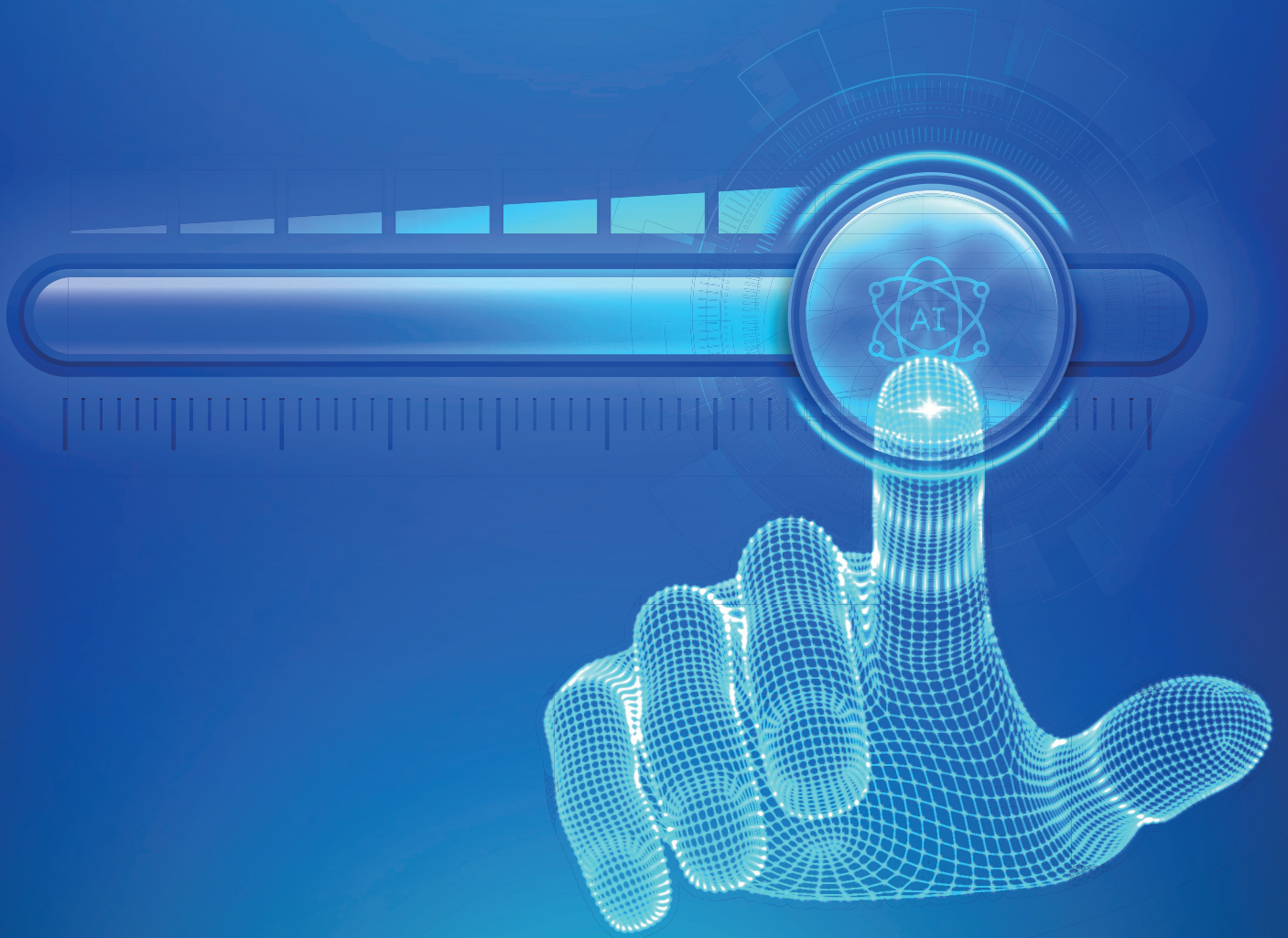


AICTE

ASSOCIATION OF INDIAN UNIVERSITIES

Google

CII
Confederation of Indian Industry

taggd

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# THE JOURNEY OF
# INDIA SKILLS REPORT

## 11th Edition Overview

The eleventh edition of the India Skills Report (ISR) is the culmination of an exhaustive evaluation involving 3.88 lakh candidates who undertook the Wheebox National Employability Test (WNET) across India. Additionally, the report draws insights from 152 corporations spanning over 15 diverse industries, all of whom participated in the Early Career Edition of the India Hiring Intent Survey for 2024. Under the overarching theme of "Impact of AI on the Future of Work, Skilling & Mobility," this edition of ISR not only highlights the remarkable achievements of both the public and private sectors in enhancing the talent landscape at local, national, and international levels but also conducts a comprehensive analysis of the employability of India's youth across various demographics. Furthermore, ISR sheds light on the promising changes that industry leaders and academia foresee, ushering in new job prospects and opportunities for the workforce.
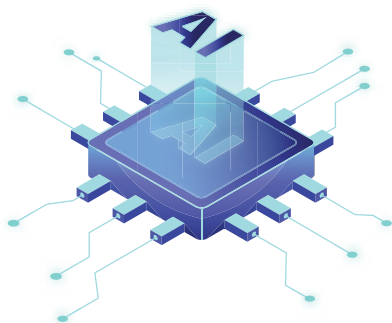
### Bridging the Talent Gap in India with AI

This India Skills Report 2024 edition will delve into the theme of "Impact of AI on the Future of Work, Skilling, and Mobility" within the context of digital disruption in education, industry, and skilling. This edition aims to recognize the profound transformation in education and industry, preparing our youth for the demands for the AI revolution at hand. Shedding light on the dynamic landscape of the Indian skilling ecosystem as well as the rising demand from corporates for an AI-powered workforce, the report acknowledges the visionary efforts of industry and academia leaders who are harnessing India's abundant talent pool for societal advancement.

As the report unfolds, it will underscore the substantial growth potential of the Indian AI industry, projected to reach USD 28.8 billion by 2025, with a notable CAGR of 45%. This surge is propelled by the widespread adoption of AI across diverse sectors such as healthcare, finance, retail agriculture, and manufacturing. The report will spotlight the escalating demand for AI professionals in India, emphasizing a 14-fold increase in AI-skilled individuals within the country from January 2016 to June 2023. India stands among the top five nations witnessing a significant rise in AI talent, alongside Singapore, Finland, Ireland, and Canada.

Highlighting India's prowess, the report will showcase the nation's first position in AI skill penetration and talent concentration, scoring 3.09. The country boasts an installed talent base of 416K professionals (as of August 2023) with a current demand of approximately 629K. The projected demand for AI professionals in India is anticipated to hit around 1 million by 2026. The Indian government's initiatives, such as the AI Task Force and NITI Aayog's discussion paper on the 'National Strategy for AI,' underscore the commitment to harnessing AI for the economic transformation of the nation. This report highlights how Indian academia, industry, and government efforts are poised to take advantage of the AI trends and incorporate policies and avenues for sustainable development.

Moreover, the India Skills Report 2024 edition will go beyond showcasing skilling initiatives to secure the future of millions of young people. We delve into the employability of India's youth, emphasizing industry readiness for an AI-powered future. The report will illuminate the collaborative efforts of the public and private sectors in embracing AI for economic progress. This edition will categorize institutional leadership into focus areas of accessibility and effective outreach across gender participation in the workforce, youth employability, regional hiring activity, rising employment opportunities, corporate expectations, and future-readiness, spotlighting best practices for the next generation of professional development. It will celebrate the strategic deployment of digital technologies, recognizing the impacts of digital transformation embraced across industries surveyed and their rising demands for highly skilled professionals in the coming year. The transformative efforts of educational leaders, industry leaders, and government institutions in adapting to the evolving talent landscape in India will be highlighted, showcasing a collective commitment to delivering extraordinary platforms and opportunities to prepare professionals and aspirants for a competitive global market.

# ABOUT
## THE TEAM

### Wheebox | An ETS Company

Wheebox Talent Assessments remains at the forefront of Remote Proctored Assessments, a leading online talent assessment platform globally. Our partnerships with top businesses, renowned educational institutions, and organizations spanning diverse industries underscore our commitment to developing strategies for talent acquisition, retention, and upskilling through cutting-edge standardized assessments. With over 10 million active users worldwide, Wheebox continues to assess global talent, administering a total of 15 million examinations last year, with 13.5 million being proctored tests. Our collaborations with Fortune 500 corporations and businesses of all sizes enable us to execute skill development projects and implement best practices across various industries.

The proprietary "Wheebox National Employability Test" (WNET) remains a focal point, targeting final-year students and postgraduates. Developed in ongoing collaboration with educational institutions and organizations, WNET assesses competencies and skills crucial for employability in a rapidly changing socioeconomic environment. The "India Skills Report" by Wheebox provides valuable insights into the skills and talent available among India's youth. Collaborating closely with education and academia, Wheebox deploys standardized assessments for key skill areas across industrial verticals. Partnerships with entities such as the AICTE, MSDE, Confederation of Indian Industry, Association of Indian Universities, Taggd, Google, and others contribute to the creation of insightful reports aimed at building future employment skills and competencies.

Wheebox's collaboration with state and central governments in India involves in-depth analysis to project and enhance the nation's talent pool. The resulting State Skill Report provides a comprehensive understanding of current trends and evolving industry requirements. The BARO Career Interest Report, created in collaboration with the Ministry of Labor and Employment, empowers candidates to make informed decisions using the "National Career Service" at the country's "Model Career Centers."

We highly appreciate the Sector Skill Council's proactive approach to promoting excellence in **vocational education** and their role in shaping the future of aspiring professionals. Their commitment to fostering skill development aligns seamlessly with our mission, and we are honored to have had the opportunity to collaborate with an organization of such caliber.

With over a decade of consistently measuring worldwide talent, Wheebox remains at the forefront of understanding rapidly changing job patterns, competencies, and the overall employability landscape. The ISR 2024 study, themed "Impact of AI on the Future of Work, Skilling, and Mobility," is our eleventh edition, aiming to bridge the gap between talent availability and job security to foster a digitally awakened India. We express our gratitude to our partners, stakeholders, and personnel who have contributed to this remarkable journey. The success stories highlighted in the following sections underscore the emergence of a young, capable, and resourceful India. Thank you for your continued contributions, support, well wishes, and more.

### Educational Testing Service

Wheebox's parent company, Educational Testing Service (ETS), founded in 1947, is the world's largest private nonprofit educational testing and assessment organization. ETS develops various standardized tests and administers international tests including the TOEFL (Test of English as a Foreign Language), TOEIC (Test of English for International Communication), Graduate Record Examination (GRE), and The Praxis test Series—in more than 180 countries, and at over 9,000 locations worldwide.

## The Confederation of Indian Industry (CII) - India Partner

CII is a non-government, not-for-profit, industry-led and industry-managed organization, with around 9,000 members from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 300,000 enterprises from 286 national and regional sectoral industry bodies.

For more than 125 years, CII has been engaged in shaping India's development journey and works proactively on transforming Indian Industry's engagement in national development. CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

CII has been actively working on skill development and livelihood for over three decades, playing a crucial role in bridging the gap between the talent and industry. It impacts over 1 million youth annually through skill delivery vehicles like Multi Skill Institutes, Model Career Centres, Industry-led courses, CSR initiatives and international certifications and pathways.

## All India Council for Technical Education (AICTE) - Institutional Partner

In 1945, the inception of the All India Council for Technical Education (AICTE) marked a pivotal moment in India's journey towards industrial and educational advancement. AICTE was born with a fundamental mission: to guide, promote, and harmonize the nation's progress in both industry and education. Initially focused on engineering and technology programs, AICTE steadily evolved into a formidable force in technical education, overseeing a multitude of colleges and polytechnic institutions. Its ascent paralleled the burgeoning demand for technical education in India, a demand driven by the promise of employment and opportunities for the country's youth.

AICTE played an instrumental role in fostering collaborations between the corporate and public sectors in the realm of technical education. This collaborative effort emerged from reform initiatives during the 1980s, as India sought to realign itself as an independent nation with a robust emphasis on technical education and development.

Since its inception, AICTE has taken on the mantle of championing the growth of India's technical education sector. Under its auspices, engineering undergraduate schools and diploma institutes proliferated across the nation. AICTE facilitated a transformation in technical education by ensuring the availability of high-quality programs to a wider cross-section of India's youth. Its overarching goal is to nurture technical education, skills, and competencies by providing resources, methodologies, and avenues for sustainable growth across diverse technical industries and professions. This is achieved by democratizing technical education, making it accessible to millions of aspiring individuals across India.

## Association of Indian Universities (AIU) - Research Partner

Association of Indian Universities (AIU) stands as a revered institution dedicated to the advancement and accessibility of higher education in India. Its origins trace back to 1925, and it officially assumed the title of the Association of Indian Universities in 1973. AIU boasts affiliations with universities throughout India, representing both central and state-run institutions. Moreover, it nurtures connections with prominent higher education establishments on the global stage, underscoring its commitment to safeguarding the interests of universities.

AIU operates as a vital hub for the exchange of knowledge and ideas, fostering a rich tapestry of cultural initiatives and sports endeavors. It also plays a crucial role in the validation and recognition of degrees and certifications, ensuring the integrity of educational credentials. Collaborating closely with educational institutions, AIU actively contributes to the development of sustainable strategies for the sector. Renowned for its scholarly expertise, AIU stands as a vanguard in the realm of education within the nation.

With a broad reach, AIU has made significant inroads in India's education landscape. Of the 831 universities in India, an impressive 635 are proud members of this esteemed association. Furthermore, AIU's global engagement extends to include affiliations with more than 10 foreign universities, solidifying its role as a bridge between Indian higher education and the world.

## Taggd – Knowledge Partner

Taggd stands as a cutting-edge digital recruitment platform, playing a pivotal role in delivering 'Ready-to-Hire' talent to India's thriving industries. Its mission is intrinsically linked to the progress of the nation's economy and the nurturing of its talent pool. Taggd achieves this by harnessing the synergy of human knowledge and data, thereby reshaping the landscape of talent acquisition.

The impressive track record of Taggd speaks volumes—having successfully fulfilled talent mandates for over 100+ clients, it has facilitated the recruitment of half a million individuals across a diverse spectrum of jobs spanning 14+ sectors. Undoubtedly, Taggd has emerged as a catalyst for success for hiring managers and organizations alike.

With an ambitious vision to facilitate the fulfillment of 1 million jobs by 2025, the Taggd talent platform embarks on a mission to establish seamless connections: from people to people, people to companies, and people to opportunities, each match finely tuned to perfection. This visionary approach underscores Taggd's commitment to reshaping the employment landscape.

In its role as the knowledge partner for the India Skills Report, Taggd brings to the table unparalleled access to cutting-edge resources and intelligence. It serves as a beacon illuminating the vast expanse of the job and hiring landscape across the nation. Through qualitative and quantitative data derived from industry experts, Taggd enriches the insights presented in this report, making it an invaluable resource for all stakeholders in the world of talent and employment.

## Google – Technology Partner

In today's rapidly evolving technological landscape, Google stands at the forefront of driving digital transformation and empowering individuals with the skills required to succeed in the digital age. As a technology partner, Google brings its cutting-edge solutions and visionary approach to the table, amplifying the impact of the India Skills Report.

Through initiatives like 'Google Digital Skills for India,' the company has empowered millions with digital proficiency, enabling them to navigate the digital world with confidence. Additionally, 'Grow with Google' has served as an educational lifeline, offering accessible and high-quality learning resources to individuals, entrepreneurs, and job seekers across the world. Google's contribution to online education cannot be overstated. Platforms like 'Google Classroom' and 'YouTube for Learning' have played pivotal roles in facilitating remote learning during unprecedented times, ensuring that education and skill development remain accessible and uninterrupted.

Google's innovation extends to the realms of artificial intelligence (AI) and machine learning (ML), where it empowers students, researchers, and professionals with transformative tools such as 'TensorFlow,' 'AI Platform' and the "Bard" AI Chat that is now integrated with various Google Workspace tools, to name a few. These resources not only accelerate skill development but also drive innovation in India's tech ecosystem and contribute to the ease of access to advanced workspace tools. Google Cloud provides the robust infrastructure and tools needed for organizations to develop, deploy, and scale applications and services, fostering cloud-based learning and innovation.

In partnership with government agencies, academic institutions, and industry stakeholders, Google has amplified its impact on skilling and entrepreneurship. Collaborations like the one with the Ministry of Skill Development and Entrepreneurship in India underscore Google's dedication to nurturing a skilled and entrepreneurial workforce.

As the Technology Partner for the India Skills Report 2024, Google is committed to illuminating the path forward with increased accessibility to cutting-edge upskilling tools. Together with its partners and stakeholders, Google seeks to nurture a skilled, empowered, and future-ready workforce, poised to drive India's triumph in the global digital economy. Through technology, innovation, and a steadfast commitment to skilling, Google assumes a pivotal role in shaping and nurturing India's talent, paving the way for a brighter and more prosperous tomorrow.

## ASAP Kerala – State Partner

**Additional Skill Acquisition Program (ASAP) Kerala**

Additional Skill Acquisition Programme (ASAP) Kerala, an initiative by the Higher Education Department of the Government of Kerala, focuses on equipping youth with the necessary industry-relevant skills required to enhance their employability.

As a pioneer in skilling initiatives, ASAP Kerala is proud to be Kerala state partner of the Wheebox ISR 2024 once more. Wheebox has solidified its position as a global leader in the domain of talent assessment and skill development. With partnerships with several top corporations, educational institutions, and organizations, including ASAP Kerala, Wheebox has played an integral role in gathering and deploying valuable intelligence on the dynamic shifts in employment patterns, competencies, and the broader employability landscape in Kerala and the country.

## The Gujarat Skill Development Ecosystem - State Partner

In the pursuit of fostering skill development and embracing the vision of Skill India under the leadership of the Honourable Prime Minister Shri. Narendra Modi, Gujarat stands as a sign of commitment to inclusive growth, employment opportunities, and sustainable livelihoods. In 2009, Gujarat took a pioneering stride with the launch of the "Kaushalya  Vardhan Kendra (KVK)" program, marking a significant chapter in the state's dedication to skill enhancement. The cornerstone of this initiative was the establishment of skill centers at every block in the state, anchored by Industrial Training Institutes (ITIs). This visionary initiative reached its zenith with a network of over 500 centers, positively impacting the lives of over 19 lakh beneficiaries, predominantly rural women, over the  past decade. Gujarat's endeavors are complemented by various ministries operating at the national level, reinforcing the state's commitment to skill enhancement. Flagship schemes like the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Jan Shikshan  Sansthan (JSS) implemented by the Ministry of Skill Development and Entrepreneurship (MSDE), and Deen Dayal Upadhyaya Grameen Kaushalya Yojana  (DDUGKY) implemented by the Ministry of Rural Development (MoRD) synergize with  Gujarat's initiatives, collectively shaping a skilled India.

# ACKNOWLEDGEMENT

## The India Skills Report 2024

is the result of a comprehensive evaluation process involving **3.88 lakh** candidates who participated in the Wheebox National Employability Test (WNET) across India, along with the active engagement of **152** corporations spanning over **15** diverse industries in the Early Career Edition of the India Hiring Intent Survey 2024.

In its eleventh edition, the India Skills Report 2024 delves deep into the "Impact of AI on the Future of Work, Skilling, and Mobility." This year's report serves as an indispensable guide, offering insights into the ever-evolving landscape of talent demand and supply in India. The data derived from the extensive WNET examination, which attracted the participation of 3.88 lakh individuals nationwide, provides valuable insights into India's talent market. Moreover, the report analyzes the hiring patterns of 152 leading corporations, spanning various job roles and 15+ industries, to uncover exclusive demand trends that are poised to shape and redefine the future of the industry.

Our esteemed knowledge partner, Taggd, has contributed significantly by providing a comprehensive hiring forecast for early career professionals. We extend our heartfelt gratitude to all those who have played pivotal roles in making this collaborative effort a resounding success. We express our sincere thanks to the administrators of participating educational institutions, whose support and cooperation were instrumental in accessing India's vast pool of youth talent.

We would also like to acknowledge the Confederation of Indian Industry (CII) for their sponsorship of WNET and the Hiring Intent Survey. We extend our appreciation to all CII office bearers for their invaluable contributions. This year's study has garnered participation from businesses and candidates across India, thanks to the invaluable insights and tireless efforts of all stakeholders in shaping the India we aspire to create.

Our gratitude extends to the All India Council for Technical Education (AICTE) for their unwavering commitment to skill-building initiatives, particularly in the states of Gujarat, Uttar Pradesh, Kerala, and other

regions included in this year's employability study. Their remarkable achievements have broadened our reach to encompass diverse youth demographics and have provided essential data to guide talent and skill development for the future.

We deeply appreciate the Association of Indian Universities (AIU) for their steadfast participation and innovative endeavors in expanding India's youth talent pool, efforts that span the entire nation as we head into 2024. This year's publication includes an extensive segment and exclusive insights highlighting the pivotal roles of **AICTE, AIU & Sector Skill Councils – FICSI, LSSC, ASDC** in catalyzing India's transformation amid the "Impact of AI on the Future of Work, Skilling, and Mobility." With their significant involvement in previous ISR editions, AICTE and AIU are featured prominently to underscore the significance of nationwide skill development, leveraging government-led initiatives, and charting the course for India's talent and industry in the coming years.

The ISR 2024 signifies a decade of dedication, and we extend our heartfelt thanks to all the companies, academic leaders, employees, participants, and collaborators who have made this journey possible. With Google as technology partner, Wheebox is honored to have collaborated with all involved in this critical initiative that shapes the future of employment, education, and skills infrastructure in India. Notably, this edition spotlights the increasing participation of women in the labor force, emphasizing the role of government, education, technology, media, and corporations in advancing the aspirations of India's youth.

We anticipate that the insights presented in this year's report align with your aspirations for India's industry and academia's future. We are confident that your continued support will be instrumental in our mission to measure the talent of the world. We deeply appreciate your invaluable time and dedication to shaping the future not only for India but also for countless regions globally. Your unwavering commitment resonates with the promise of resilience and advancement that unites diverse communities bound by the common aspiration for progress.

The data showcased in the 11th edition of the India Skills Report 2024 paints a comprehensive picture of India's talent ecosystem, explores high-demand skills, forecasts industry trends for corporate hiring intent in the upcoming year, and complements the ongoing efforts to shape India's talent economy for the future. This report meticulously follows the theme of "Impact of AI on the Future of Work, Skilling, and Mobility," providing early insights into the impending transformation and equipping India Inc. with the resources needed to navigate and thrive in this wave of change.

# FOREWORD

## The India Skills Report

Reverberates with themes of transformation, progress, and innovation. The educational landscape in India is undergoing an unprecedented constructive disruption, laying the groundwork for developing a workforce that is skilled and future ready.

An unwavering focus on our youth, we've propelled the education sector to unprecedented heights, setting a benchmark that will redefine India's role in the global talent landscape. Our commitment to upskilling and digitalization knows no bounds. The allocation in the Union Budget 23-24 stands as a testament to our steadfast commitment to empowering the youth and enhancing access to high-quality education and skilling. Notably, school education has also seen an increase in allocation, underscoring a collective pledge to nurture the leaders of tomorrow and prepare them for the in-demand skills of the future.

The Indian higher education sector, with its rich history and diverse landscape, is embracing tech-enabled learning techniques with open arms. The introduction of smart boards, immersive gaming interventions, online courses, and engaging podcasts is not just a reflection of innovation but a stride to making learning more accessible, engaging, and immersive. At the heart of this transformation lies India's burgeoning EdTech market. Projections indicate that by 2025, it will grow into a $10 billion behemoth, underscoring the increasing demand for tech-savvy, skill-enhanced education in all corners of the nation and the globe. The changes due to the strategic digitalization of educational infrastructure reflect a vibrant, expanding ecosystem, with India standing as the second-largest market for e-learning globally. Furthermore, the numbers tell an exciting story; India is home to a myriad of EdTech startups, and their numbers are only set to grow, providing access to in-demand skills in even the most remote areas of the globe.

ith our massive strides in creating a robust digital public infrastructure, we are ensuring that quality education is not a privilege but a right accessible to all. With more than 37 million users engaged across various platforms, India's EdTech environments are making

**Dr. Nirmaljeet Singh Kalsi**
IAS (Retd.) (Chairperson, NCVET)

education flexible, affordable, and tailor-made for the students and learners. India is rewriting the rules of the education game, ensuring that knowledge is not confined within the four walls of a classroom but extends beyond, into a rapidly scalable model of digital public infrastructure. This collective journey is not just about numbers; it's about empowerment and accessibility for learners, including Divyangs, from all walks of life and all corners of this vast and diverse nation.

Our approach to education is about preparing talent for the future, with access to the latest knowledge, skills, and opportunities to take the nation's economy forward. Combining traditional Gurukulam learning disciplines with increased access to AI-enabled learning platforms, India's academia is set to propel a wealth of knowledge and experience to the frontiers of science, commerce, and the arts. The AI revolution is not looming; it's here, and we are preparing those entering the workforce for the challenges and opportunities it brings, inspiring innovation and entrepreneurship to complement economic growth.

Our vision for artificial intelligence in India is underpinned by promoting open-source AI, ethical guidelines, tax incentives, and investing in new infrastructure and youth. In the heart of India's educational landscape, the digital revolution is unfolding. As of 2023, India leads globally in AI skill penetration (score of 3.09), securing 1st and 5th ranks in talent concentration and

AI publications. The government's INDIAai program aims to catalyze AI innovation by promoting skilling and innovation nationwide. Notably, tech talent in India is three times more likely to report AI skills, showcasing the adaptability of our academic, corporate, and digital infrastructure.

The Confederation of Indian Industry (CII) has emerged as a stalwart in our quest for sustainable development. Their tireless efforts in taking industrial modernization to the next level are in sync with our shared vision of "India Skills and Talent Economy by 2030." Collaborating with stakeholders, they are reshaping the quality of education and skills in India while granting immense opportunity to the in-demand opportunity and knowledge of a rapidly evolving industrial setting.

As an academic 'think tank,' the Association of Indian Universities (AIU) Is an important stakeholder in the implementation of the National Education Policy 2020 including championing holistic education, skill development, and teacher quality enhancement.

Public expenditure on education is the cornerstone of our vision, poised to reach 6% of the GDP, a pivotal move that will bridge the quality and the numbers gap in education and skill development. The Rashtriya Madhyamik Shiksha Abhiyan and Sarva Shiksha Abhiyan initiatives lay the foundation for improved secondary and elementary education, promising a brighter future for India's youth. The National Education Policy 2020 and ints implementation through National Credit Framework (NCrF) have been the beacon guiding our path, empowering the youth and fortifying India's economic growth. The widespread adoption of the new policies and frameworks is poised to create a youth that will meet the industry's evolving demands, promoting entrepreneurship, innovation, and research and development, vital for our knowledge economy.

As we flip through the pages of the India Skills Report, it's evident that India is no longer a mere participant but a trailblazer in the global education landscape. The opportunities, reforms, and initiatives pioneered by both the academia and corporate are a testament to an unwavering commitment to our youth, who are the architects of India's future. This year's report centralized on the theme "Impact of AI on the future of work, skilling and mobility" celebrates embracing change, the talent potential, and India's tireless pursuit of equipping the youth for a brighter, more prosperous tomorrow.

# FOREWORD

## The Future of Work is NOW,

And it is impacting skill requirements and work arrangements worldwide. The digital revolution is not merely reshaping job roles, it is also creating demand for new and emerging skills across the industry. According to the World Economic Forum, while 83 million jobs may become obsolete by 2027, 69 million new roles are expected to emerge, thanks to the growth of AI and technology.

Impacted by Industry 4.0, the nature of work, workforce, and workplace are transforming rapidly, necessitating continuous learning and adaptability. As India strives to become a $10 trillion economy by 2030, it's crucial to prepare and skill the youth for Industry 4.0. The proportion of the total workforce having received vocational training, formally or non-formally, has increased threefold from 2017 onwards. With the largest population in the world and 10-12 million youth joining the working age annually, India's youth cohort will not only drive India's growth but also has the potential to drive global growth.

Bridging the skills gap requires the sectoral identification of future jobs, especially in high-growth sectors like Manufacturing, Logistics, Healthcare, BFSI, Hospitality and Life Sciences, to equip job seekers with the relevant skillsets. We anticipate creation of 11 million manufacturing jobs in the coming decade along with over 8 million jobs in hospitality by 2028, and 3.5 million green jobs by 2030, fuelling demand for a skilled workforce.

As we enter an era of digitally driven knowledge-based economies, education and skill development are going to drive national competitiveness. Thus, it is imperative to prioritize skilling, upskilling, and reskilling to foster economic growth and employability, with special emphasis on women becoming a part of the workforce. Notably, the Female Labour Force Participation Rate has risen to 37% in 2022-2023 from 23.3% in 2017-18, but more impetus is required.

For almost four decades, CII has been working extensively on the skilling and livelihood agenda. Through our ground initiatives, CII acts as a bridge between youth and Industry, impacting more than 1 million youth annually.

## Mr. Aditya Ghosh
Chairman, CII National Committee on Skill Development & Livelihood | Co-Founder, Akasa Airlines | Founder, Homage & Chairperson, Social Enterprise Central of SEWA

This year, given the global importance of education and skilling, and aligned with the priorities of G20, B20 India under the secretariat of CII had set up a Task Force on Future of Work, Skilling, and Mobility, which deliberated on some of the issues of skilling, re-skilling, upskilling etc in the context of a rapidly transforming global economy. The Task Force focused on three critical pillars: fostering inclusive and sustainable growth in transforming the world of work, accelerating workforce skilling to adapt to changing industry demands, and boosting global workforce mobility. Many of our recommendations found mention in the G20 New Delhi Leaders' Declaration.

The 11th edition of the India Skills Report not only provides a comprehensive snapshot of our current workforce but also illuminates the path forward for leaders in academia, industry, and policymaking.

The India Skills Report 2024 will serve as a valuable resource, guiding us through the uncharted territories of the future workforce. By integrating WNET scores and India Hiring Intent Survey data, it will provide nuanced insights into the talent landscape, benefiting professionals, aspirants, hiring managers, business leaders, policymakers, and academia. As we navigate the challenges and opportunities presented by AI, this data will show the way forward in our quest for talent that aligns with the evolving industrial landscape.

# FROM THE DESK OF THE AICTE CHAIRMAN



**Prof. T G Sitharam**
Chairman of AICTE

Greetings and Congratulations to the Wheebox team for successfully coming up with the eleventh edition of the India Skills Report 2024. The theme of this year's report 'Impact of AI on Future of Work, Skilling and Mobility' is the burning topic of today's era. The Wheebox in partnership with CII, AICTE, AIU, Google, and many other prominent institutions has been doing an excellent job of examining the strategic overview of India's Skills and Talent through this report.

As India marches towards a developed nation status by 2047 as envisioned by Hon'ble PM, it is imperative to equip our workforce with employable skills and knowledge that meets the requirements of the globalized labor market, Industry 4.0. And future skills. Skill development is the critical enabler for improving employment outcomes and higher productivity leading to faster and sustainable economic growth. The insights in this report will offer students, corporations, academia, and policymakers a consolidated view of the impact of various forces like demographics, globalization, political environment, and Industry 4.0 on the workforce of tomorrow.

It is very important to raise the youth of India to the level of professionals who are highly employable and prepared for the workflows of the next decade, pivotal to modernization via digital literacy and new-age workplace skills. ISR 2023 provides key information on how talent supply and demand are changing across India. The eleventh edition of the report provides insights into the present state and future expectations of the supply and demand side of the talent value chain.

The concept of the "Wheebox National Employability Test" (WNET) focusing on final-year students and postgraduates is commendable as it easily translates the competencies and skills necessary to be employable in a socioeconomic environment that is rapidly changing. It offers a thorough understanding of the supply of skills and talent present among India's sizable youth talent.

Wheebox in partnership with CII and AICTE is discovering and reaching this young talent through the India Corporate Hiring Intent Survey 2024. The insights captured in this report would surely help in taking steps to match the skilled demand from the industry and the supply of the talent pool. I am confident that a lot of newer jobs are being created and hence to generate skilled minds is the need of the time and I am sure that Wheebox is trying to reach this goal. The India Skills Report is an important benchmark in this respect. The report will give valuable information and actionable insights for taking the skilling ecosystem to newer heights and help parents, students, corporations, academia, training entities, and policymakers to take effective steps in skilling and make India, a talent capital of the world.

The report also covers the key initiatives undertaken by AICTE for building the education skills ecosystem in the country. I am sure all institutions accredited by AICTE will use these insights to build employability and help build India as the Talent Capital of the World.

**Best Wishes,**
**Prof. T G Sitharam**
All India Council for Technical Education

# EMERGING TRENDS IN AI SKILL DEMAND ACROSS 14 OECD COUNTRIES: AN OECD REPORT

Artificial intelligence (AI) is rapidly reshaping economies and societies. It is more and more pervasive among products and services used every day by consumers, and may help tackle societal challenges, such as climate change or access to medical care, while bringing challenges for governments and citizens alike. Despite the transformative power of AI to improve efficiency and innovative capacity, when left unchecked, it gives rise to concerns that underscore the importance of placing the human element at the forefront in driving these advancements.

This work focuses on the human behind AI by exploring recent patterns in the demand for AI-related skills across countries and leverages comprehensive information from online job postings provided by Lightcast1 for the period 2019-22. These data are available for 14 OECD countries, and combine information available for selected English-speaking (Australia, Canada, New Zealand, the United States, the United Kingdom) and European (Austria, Belgium, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland) countries.

Job postings that require AI skills are identified using a novel methodology based on the presence of both generic and specific AI keywords mentioned in online vacancies. The demand for positions that require AI skills is then characterised across several dimensions, focusing on its evolution over time across countries and industries, its heterogeneity across occupations, and the types of AI skills demanded by different employers.

First, results indicate that AI-related online vacancies represent a small share of all vacancies posted online in the 14 countries analysed. Indeed, in 2022 the share of AI-related online vacancies was highest in the United States where AI-related vacancies represented 0.84% of all vacancies. The share of AI-related vacancies never exceeded 1% in any of the countries and years under analysis.

Second, in most countries the share of AI-related online vacancies grew markedly between 2019 and 2022. Over this period, on average across countries, the share of online vacancies requiring AI skills increased by 33%. Such growth was generally stronger in countries with lower shares in 2019. Only in Austria and Sweden, the share of online vacancies requiring AI skills did not grow over the period.

Third, the demand for AI-related jobs is highly concentrated, both in terms of industries and occupations. Most job postings requiring AI skills are for positions referring to ICT and Professional Services. At the same time, the analysis reveals some cross-country heterogeneity, possibly reflecting differences in the sectoral composition of labour markets. Concerning occupations, on average across European countries considered in the analysis around 73% of online vacancies requiring AI skills aim at hiring Professionals, 9% look for Managers, and 8% for Technicians and Associate Professionals. On average across English-speaking countries, for which a more detailed occupational classification is available, around 44% of AI job postings relate to jobs in Information Technology, 23% to Planning and Analysis, and 7% to Engineering.

Fourth, some skills – notably those related to Machine Learning – appear particularly pervasive among AI-related online vacancies. Indeed, across all countries, between 29% (in France) and 39% (in the United States) of all AI job postings require skills related to Machine Learning. Skills related to Autonomous Driving and Robotics appear on average less in demand, possibly reflecting their more industry-specific nature, and also exhibit a high degree of cross-country variation.

A final set of analyses zooms in on the United States, the country in which the demand for AI-related jobs has been comparatively highest over the period considered. These distinguish top AI employers, defined as the ten US employers posting the highest shares of AI-related jobs online within or across industries in 2022, and identify differences in the AI skill profiles such companies look for relative to other AI employers in the United States.

AI job postings by top ten AI employers are high within Information, Professional Services, Finance and Insurance, and Manufacturing industries, reflecting the overall cross-sectoral distribution of AI vacancies. Interestingly, AI vacancies appear more concentrated among top AI employers in Retail Trade or Agriculture. Top ten AI employers across all US industries operate instead in Retail Trade, Finance and Insurance, Professional Services, and Manufacturing.

In the realm of AI vacancies, top AI employers mainly look for Software Developers and Data Analysts or Mathematicians, similarly to other AI employers, and for Network Engineers, even more than other AI employers in the United States. Although top AI employers are increasingly demanding skills related to Amazon Web Services, Big Data or Business Intelligence, their demand for technical skills does not differ substantially from that of other AI employers. Differences are more considerable when focusing on socio-emotional and foundational skills:

overall top AI employers tend to more frequently demand Leadership and Management, as well as Innovation and Problem-Solving skills. This may reflect the importance these companies place on their AI employees having a broad skill mix and is corroborated when zooming in on the skill profiles these firms expect from their AI managers.

This analysis is complementary to other OECD work focusing on the diffusion of AI across firms, and its role for productivity, innovation, and labour markets. The findings are particularly relevant in the context of "building human capacity and preparing for labour market transformation", one of the key OECD recommendations consistent with the OECD AI principles. Indeed, exploring the human element behind advances in AI may help design interventions aimed at fostering the diffusion of AI across the economy, especially among employers and industries that have not yet fully benefited from its potential, ensuring an inclusive human-centric digital transformation in the age of AI.

# Demand for AI workers for English-speaking countries, by occupation (2019-22)

Percentage of online vacancies advertising positions requiring AI skills in different occupations
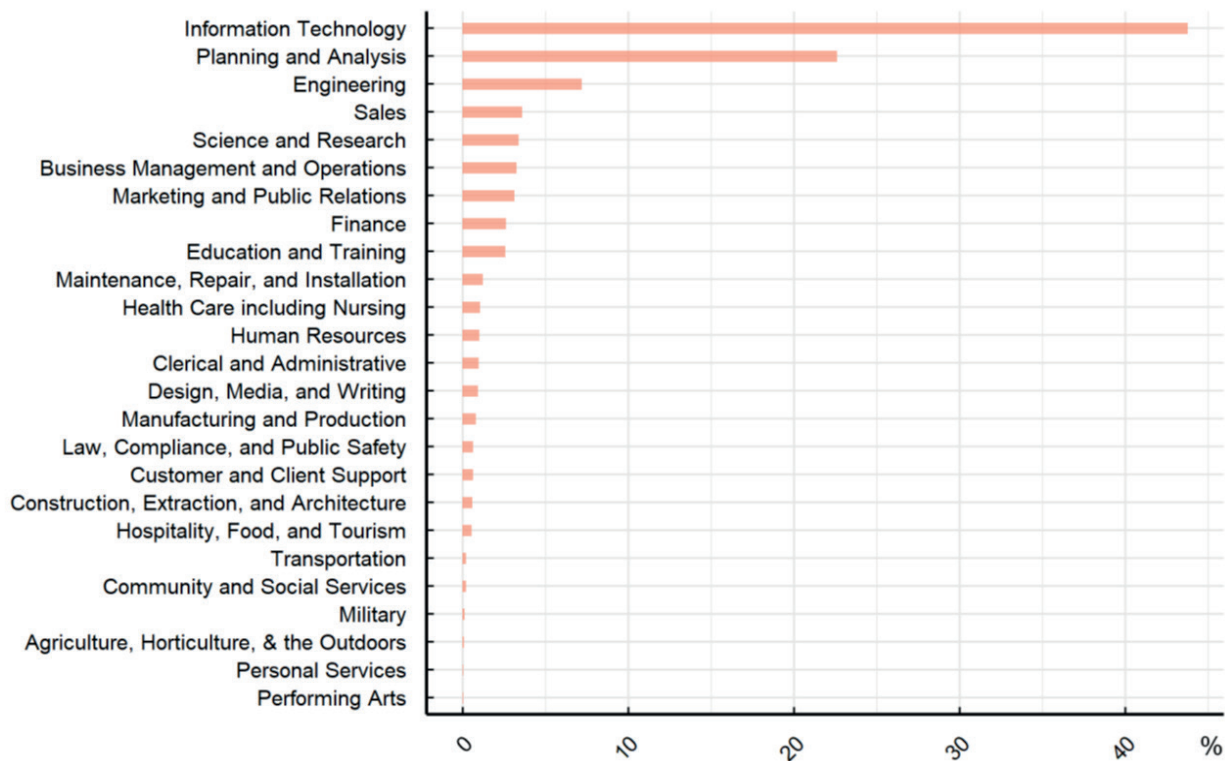


Source OECD

# Figure 3.4. Top 3 industries in which online vacancies requiring AI skills are advertised, by country (2019–22)

Percentage of online vacancies advertising positions requiring AI skills in specific industries and averaged across 2019–22, by country
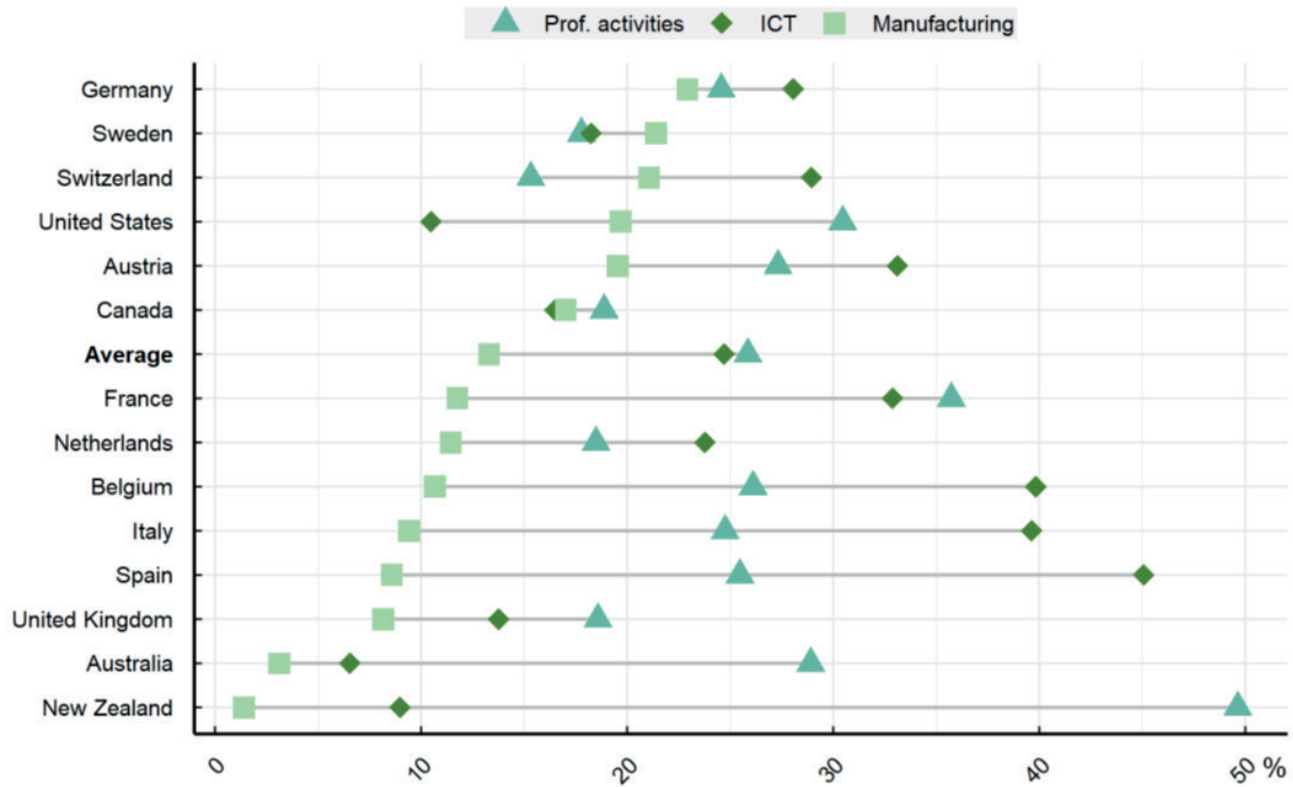


Source OECD

 Note: The Figure shows the percentage of AI online vacancies (reported in this Figure for the top three industries), which is the total number of online vacancies requiring AI skills in a given industry and country relative to all vacancies requiring AI skills across all industries in a given country. Countries are sorted in descending order of the highest average share of vacancies requiring AI skills in manufacturing. The top three industries are based on the highest share of vacancies requiring AI- skills across countries and years. Vacancies requiring AI skills are vacancies in which at least two generic AI skills or at least one AI-specific skill were required (see Section 2.2 on generic and specific skills). Annex Table A B.2. details how the harmonisation of industrial classifications across European countries and English-speaking countries was conducted given differences in the taxonomies used by Lightcast in the compilation of data for English-speaking countries and countries in Europe. Average refers to the average across countries with available data.

**Source:** Authors' elaboration based on Lightcast™ (December 2022).

# ENGLISH LANGUAGE COMPETENCY IS A "KEY SKILL" FOR EMPLOYABILITY AND GLOBAL MOBILITY.

While India has the second largest English-speaking population globally, there is a huge variation in level of English language proficiency amongst the English speakers in India. In the backdrop of a dynamic work environment and varied levels of English language proficiency, the need for a global language assessments becomes imperative. A major barrier faced by many in workforce esp. is the lack of English language proficiency, which not just hinders their ability to communicate effectively but is also a significant barrier to accomplishing work responsibilities. In any contemporary workplace, employers expect much beyond technical expertise & work knowledge; they are increasingly seeking refined communication skills, ability to present, critical thinking, adaptability, and of course problem-solving capabilities – these are qualities or skills that seamlessly integrate into the intricate fabric of any dynamic workplace, and hence could be called "transferable" skills.

The significance of possessing a combination of cognitive and non-cognitive skills has become more pronounced as job responsibilities continuously shift and new-age sectors come to the forefront. English as a skill or competence is paramount, be it any workplace across any geography. The Test of English for International Communication (TOEIC) is the world's largest assessment of workplace English proficiency. The TOEIC tests all the 4 competencies of reading, writing, listening, and speaking in a diverse work-related setting that are common across cultures and contexts. For the above reasons, TOEIC is accepted by 14000+ organizations worldwide and 5+ million tests are conducted annually.

## ITOEIC as an enabler of workplace assessments

English continues to be the preferred lingua franca for businesses around the world. India Skills Report 2023, prepared by Wheebox revealed that having

**MR. SACHIN JAIN**
Country Manager
India & South Asia, ETS India

English as the second language for students significantly enhances their employability. TOEIC, which has widespread acceptance, offers a comprehensive assessment of all markers of proficiency in the English language.

It enables organizations to identify candidates with the optimal English proficiency skills that can seamlessly blend with overall workplace requirements. TOEIC can also be utilized to evaluate proficiency of existing workers already working for an organization and thereby be used as a marker for upskilling in the context of language proficiency. Organizations and individuals can benefit from an array of test resources available under TOEIC – these include the TOEIC Bridge Score User guides, Examinee Handbooks and sample tests and questions.

## Overarching benefits for India's workforce'

With India aiming to become the Global Skills Capital of the World and taking steps to prepare a future ready workforce, it is imperative to integrate globally recognized evaluation such as TOEIC into workplace assessments. The new National Credit framework (NCrF) under NEP 2020, also advocates for the inclusion of credits based on skill-based assessments, among other additions. Assessments such as TOEIC can help to enhance the global employability and mobility of Indian candidates.

UNVEILING

THE 11TH EDITION OF

# INDIA SKILLS REPORT

**THEME**

IMPACT OF AI ON THE FUTURE OF WORK, SKILLING, AND MOBILITY

# Exploring the Theme

## Impact of AI on the Future of Work, Skilling, and Mobility

In the relentless march of progress, some moments stand as significant milestones in our journey—a testament to our adaptability, resilience, and unyielding commitment to a better tomorrow. The India Skills Report 2024, the eleventh edition, is one such milestone.

The theme of this year's report, "Impact of AI on the Future of Work, Skilling, and Mobility," illuminates a transformative change in the fabric of industry and education in this present generation. Artificial Intelligence (AI) has emerged as the catalyst propelling us into an era where opportunities, challenges, and possibilities abound. The World Economic Forum estimates that by 2025, 85 million jobs will be automated, but 97 million new jobs will be created due to the growth of AI and other technologies. India, in 2023 is on the verge of accelerating the adoption of AI across industries, education and public services.

Spotlighting India's exceptional achievements, this report will underscore the nation's leading position in global AI skill penetration and talent concentration, boasting an impressive score of 3.09. As of August 2023, India proudly hosts an installed talent base of 416K professionals, responding to the current demand of approximately 629K. Anticipating a surge, the projected demand for AI professionals in India is expected to reach a remarkable 1 million by 2026.

The Indian government's proactive initiatives, such as the AI Task Force and the insightful discussion paper by NITI Aayog on the 'National Strategy for AI,' reflect a resolute commitment to leverage AI for the economic transformation of the nation. This year's ISR 2024 report will shed light on the collaborative efforts of Indian academia, industry, and government, showcasing their strategic alignment with global AI trends. It will articulate how concerted policies and innovative avenues are being forged for sustainable development, illustrating India's readiness to capitalize on the unfolding AI landscape.

## The Transformative Power of AI: Reshaping the Way We Work

In the heart of India, a quiet revolution is taking place—one that is not marked by the roar of engines or the clatter of machines but by the gentle hum of algorithms and the flicker of screens. Artificial Intelligence (AI), a phenomenon that was once the stuff of dreams, now threads its way through the fabric of our daily lives, influencing industries, reshaping jobs, and molding the future of work in ways previously unimaginable. We are all aware of the disruption caused by generative AI, as tools like ChatGPT and MidJourney inspire marketing, sales, design, and development teams with new ways of tackling complex tasks. As of now, with over 100 million users, India comprises 8.47% of all ChatGPT users, second to only the United States comprising 13.07% of users worldwide. But, there's far more to AI than generative text, images or speech!



### AI in Healthcare

Picture a world where AI-powered algorithms meticulously scan medical images, detecting cancer cells with a precision that surpasses human doctors. Imagine AI-driven chatbots providing round-the-clock support, soothing the concerns of patients in need. This is the reality unfolding in India's healthcare sector, where AI is not just a tool but a lifeline.



### AI in Finance

In the world of finance, AI is more than just a set of equations; it's the guardian of our investments. It tirelessly monitors transactions, detecting fraudulent activities in real-time, and securing our financial world. Meanwhile, AI-generated investment portfolios provide tailored strategies, allowing individuals to grow their wealth with personalized precision.

## AI in Manufacturing

Within the heart of our factories, AI-powered robots are at work. They don't tire, they don't falter, and they assemble products with a precision that borders on artistry. AI algorithms anticipate machine failures before they occur, ensuring seamless production lines and minimal disruptions.

## AI in Retail

The act of shopping has transformed, with AI as its propelling force. Chatbots analyze past purchase histories, making product recommendations that align with individual preferences. In the background, AI orchestrates the efficient movement of goods, optimizing supply chains and ensuring timely deliveries.

These are but a few snapshots of the AI-enabled transformation gripping India's workplaces. With every algorithm, every line of code, and every pixel on a screen, AI is crafting a new narrative—one where tasks are automated, jobs are created, and the very essence of work evolves.

## What Does the AI-Powered Future Hold for India's Youth?

Within these pages, as we journey through data and insights of India Skills Report 2024, we unveil the far-reaching implications of AI on our work dynamics, knowledge dissemination, and the very essence of our existence. AI is not merely a technological leap; it is a paradigm shift that automates tasks previously entrusted to humans, reshaping the fundamental nature of work. It sparks a wave of creativity, fosters problem-solving, ignites innovation, and elevates social interaction as the new currency of employment.

In response to the growing demands of industry and academia, the Indian government is investing in skilling and reskilling programs to help workers transition to new jobs in the AI-powered economy.

In this report, you will find evidence of AI's transformative prowess—jobs being created, traditional roles being redefined, and fresh vistas of occupation taking shape. It's a tale of resilience and adaptability where individuals, industries, and state governments embrace AI's potential to not just navigate change but to flourish within it. Driven by this year's WNET employability metrics and the Hiring Intent Survey results for 2024, we weave an intricate narrative of the economy, talent, and industry, fueled by the unwavering determination of our team, partners, and participants.

A report by LinkedIn found that AI skills are the most in-demand hard skills in India and the future is bright for India's youth in this regard. As we explore this report, our journey is enlivened by the narratives of success that spotlight real-world AI applications in skilling and employment in India. The Indian government is investing heavily in AI research and skilling initiatives. In 2023, **the government allocated INR 10,000 crore to AI research and development** to further add to the digital transformation that is reshaping the economy. As the wheels of change turn, the Indian government stands resolute. Initiatives such as the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and the Skill India Mission are equipping our workforce with the AI skills necessary for the future. It is a commitment to inclusivity, ensuring that no one is left behind in this transformative journey.

Yet, amidst this transformation, we find a convergence of human and artificial intelligence. AI is not replacing human potential; it's enhancing it. The promise of skilling, now amplified by AI, heralds an era of boundless possibilities. AI-powered learning platforms have become our mentors, providing personalized learning experiences and identifying the chasms in our knowledge. They recommend training courses tailored to our needs, ensuring that our skills remain in step with the times. The National Skill Development Corporation **(NSDC) employs AI for personalized learning,** while the Indian Institute of Technology Madras pioneers an AI-driven job-matching platform. These stories underscore the tangible influence of AI, reshaping the realms of education and employment.

Although the number of Indian workers migrating to other countries for work has increased by 20% in the past five years, in the grand vision of India's skilling initiatives, the statistics gathered in this year's report reflect a profound commitment to empowerment for all within this great nation. The government is working on developing a National Migration Policy to protect the rights of migrant workers and facilitate their mobility

as well as access to resources wherever they choose to tread. Pradhan Mantri Kaushal Vikas Yojana (PM-KVY), Skill India, and Digital India form a trinity of the many impactful and transformative government-led programs, endeavoring to uplift millions through education and opportunity. Having trained over 10 million people in 2023, the PMKVY ushers hope and enthusiasm for India's youth. We also witness the empowering ascent of women in the workforce and the emergence of diverse new job profiles across industries in this year's report. Furthermore, the success of Make in India led by the Indian government shows promise of a self-sufficient and sustainable mode of development for various sectors and communities across the nation.

In the heart of our exploration lies a symphony of statistics, mirroring the contours of change and progress in India and the globe. The path forward is not without its challenges, but they are challenges we are equipped to overcome. With unity and resolve, the government, businesses, and educational institutions are collaborating to ensure that every individual has the chance to cultivate the skills essential to thrive in an AI-powered world.

As we stand on the precipice of this transformation, we are reminded that our choices today will shape the India of tomorrow. The possibilities are boundless, and together, we shall seize them, shaping a future where AI and human potential harmonize to build a more prosperous and inclusive India.The India Skills Report 2024 is more than a mere ledger of statistics; it serves as a compass guiding us toward a future where the potential for perseverance and progress stretches to infinity, like an endless horizon over the sea.

May this year's report inspire you, guide you, and empower you as it has for millions of enthusiasts seeking cutting-edge insights into the employment and employability landscape of India. Along with our esteemed partners, institutions, and participants, we have forged a vision to collaboratively assess and produce strategic insights that will serve industrialists, talent magnets, educators, policymakers, and the youth as a force for adaptability and progress. Together, let us embrace the winds of change and chart a course for a brighter, more inclusive, and AI-powered future for India and her youth.

# IMPACT OF AI ON THE FUTURE OF WORK, SKILLS, AND MOBILITY



### MR. NIRMAL SINGH
Chief Convenor of India Skills Report,
Founder and CEO, Wheebox | An ETS Company

## Understanding the AI Revolution in India

India possesses the potential to emerge as a global leader in the AI revolution with the significant advancements made in this field, and the immense scope for innovation across its vibrant IT landscape. To navigate this transformative journey successfully, India must address its challenges head-on and retain inclusion as the main agenda. Collaboration among government bodies, businesses, and educational institutions remains paramount, as observed in the success of various initiatives to upskill India's youth and the developments in the nation's digital public infrastructure.

Investing in AI extends beyond technological advancement and India has always been the target for foreign investments in IT and business that act as a catalyst to the unfolding dreams of digital India. Investment in AI signifies a commitment to forging a more inclusive, prosperous future, where innovation thrives, opportunities are realized, and the avenues of a brighter tomorrow are plentiful. The AI revolution is India's call to shape its destiny as a people-first economy, take the lead in innovation, and pioneer a future that celebrates the synergy between technology and humanity.

## An Opportunity for Widespread Digital Transformation

Artificial intelligence (AI) stands as one of the most transformative forces reshaping industries and societies across the globe and if India stands to benefit we must understand the various opportunities and challenges involved in this pursuit. In the grand vision of technological evolution, India is rapidly emerging as a

key player in this unfolding AI revolution that traverses across civilization as a beacon of sustainable growth. This seismic shift that AI encourages is not only essential but inevitable, and its implications are both far-reaching and profound for its citizens and the globe.

One of India's undeniable strengths lies in its vast population and the abundance of data generated by its diverse citizens. These factors together create a fertile ground for the development and widespread application of AI technologies. With such a wealth of resources at its disposal, India is primed to harness the transformative potential of AI across various sectors. As the curtains rise on this AI-driven era, NASSCOM's projections indicate a breathtaking journey ahead. With the Indian AI industry aiming for the stars, a staggering USD 28.8 billion by 2025 is within reach. This upward trajectory at a CAGR of 45% is substantiated by AI's mushrooming adoption across sectors like healthcare, transportation, finance, retail, agriculture, and manufacturing.

With a relative AI skill penetration three times the global average, India is positioned as a leader in the rapidly evolving field. India boasts a robust demand for AI skills, with a staggering 213,000 talent gap projected by 2022. The country is home to 416,000 AI and data science professionals, with a 60% to 73% demand-supply gap in key roles such as ML engineer, data scientist, DevOps engineer, and data architect. As per the World

Economic Forum, a 22% shift in the job landscape by 2028 is anticipated, driven primarily by emerging AI roles.The financial landscape is set to witness a seismic shift due to this rapidly evolving inclusion of AI across regions. By 2025, AI is predicted to inject up to $500 billion into India's GDP, a number set to catapult to $967 billion by 2035. The AI software segment is geared for an annual growth of 18% till 2025, fueled by India's expanding investments, projected to hit $881 million this year.

Recognizing the pivotal role that AI can play in its growth trajectory, the Indian government, academia, and industry have embarked on a journey of substantial investment in nurturing AI capabilities and skills. These strategic initiatives reflect a commitment to positioning India at the forefront of the global AI revolution.

## Rising Demand for AI Skills Globally

The global landscape is witnessing a seismic shift in the demand for AI skills, with a remarkable 33% surge recorded across 14 countries spanning North America, Europe, and the Pacific. The OECD report on the supply, demand, and characteristics of the AI workforce across OECD countries provides valuable insights into the emerging trends in AI skill demand. The report highlights that the AI workforce, consisting of workers with specialized AI skills, is concentrated in a few high-skilled occupations, including mathematicians, actuaries and statisticians, software and application developers, ICT managers, database and network professionals, and electrotechnology engineers. The report also emphasizes that the AI workforce is disproportionately highly educated and male. Furthermore, the report underscores that the demand for AI skills in the labor market is on the rise, and the impact of AI on the workplace is significant. The vast majority of OECD countries have issued national AI strategies, recognizing the importance of skills, but not all propose concrete actions to address the evolving skill needs due to AI. While the United States leads in AI job postings, other nations are carving niches of expertise, exemplified by France's focus on autonomous vehicles and the Netherlands' strides in robotics. The transformation spurred by AI is not one of job scarcity but rather an evolution in roles and skill sets. The narrative in this section explores the statistics and dynamics of the AI skills landscape in India, drawing comparisons with the USA, Europe, and Asia, shedding light on the challenges and opportunities that each region faces.

In the context of India, the rising demand for AI skills globally necessitates strategic initiatives to address the evolving skill needs due to AI. This includes skills anticipation and assessment for AI, as well as the need for national strategies to address the evolving skill needs due to AI. Additionally, emphasizing the importance of fostering a conducive environment for implementing AI-powered technologies, as well as the need for continued focus on skills development will position India as a global leader in AI.

In India, the AI market is a thriving hub, with projections indicating a robust growth to USD 28.8 billion by 2025, expanding at an impressive CAGR of 45%. The Indian government's support for AI initiatives, coupled with a conducive ecosystem, collaborative efforts, and a steadfast focus on skills development, positions the country as a potential global leader in AI. The education sector in India contributes significantly to the AI talent pool, with a digital talent pool of 1.6 million. Universities and colleges across the nation offer dedicated degree programs and specialized courses in AI, data science, machine learning, and robotics. Government initiatives, such as the National Skill Development Mission and Skill India Mission, underscore the commitment to skilling the youth in AI and related areas. Industry-academia collaboration further strengthens the landscape, providing industry-specific AI skill development programs. Despite the promising landscape, challenges persist, including an uneven distribution of skills, concerns about the quality of education and training, and limited access to technology and infrastructure in rural areas.

Global trends, as forecasted by esteemed institutions, paint a nuanced picture. McKinsey Global Institute anticipates that automation could lead to the loss of 800 million jobs worldwide by 2030 while creating 950 million new ones. The World Economic Forum underscores that 65% of jobs will require new skills by 2025 due to automation and AI adoption. Meanwhile, the OECD predicts a potential 15% boost in global economic output by 2030 through widespread AI adoption. In Europe, the European Commission envisions the AI market reaching €290 billion by 2025, generating 2 million new jobs. However, the World Bank sounds a cautionary note, emphasizing the need to train 1 million AI specialists in Europe by 2030 to meet escalating demand. PwC adds that 70% of European CEOs anticipate significant workforce impacts from AI in the next 5 years, necessitating collaboration between academia and industry to bridge the gap.

Asia is not exempt from the transformative wave, with the International Labor Organization warning that Southeast Asia confronts a risk of automation for 56% of jobs. While China aspires to be the global AI leader by 2030, Singapore aims to train 20,000 AI professionals by 2025. Challenges include upskilling 500 million jobs at risk of automation and addressing the uneven distribution of AI skills. In the United States, the White House projects a staggering $1.5 trillion AI market by 2025, supported by over $1 billion in government investment since 2019. However, the Brookings Institution reports that 70% of US employers struggle to find workers with the necessary AI skills. With 92% of US companies facing challenges in finding AI talent, the nation anticipates 5 million AI jobs by 2030. Challenges include a shortage of qualified professionals and the need for ethical and responsible AI development.

Industry-specific trends globally further underscore the profound impact of AI. In healthcare, AI is set to create 1.6 million new jobs by 2030, while finance anticipates a displacement of 1 million jobs alongside the creation of 1.5 million new AI-skilled positions. Manufacturing expects 5 million new AI-related jobs by 2030, contrasting with retail, where 850,000 jobs may be displaced by 2025, but 4 million new AI-centric roles are poised to emerge. In response to the escalating demand for AI skills, governments and educational institutions globally are investing in comprehensive AI education and training programs. Europe's commitment is evident in the European Commission's strategy, while the Asian Development Bank underscores the urgency of upskilling 500 million jobs at risk of automation in Asia. In the United States, the Biden-Harris administration's National AI Research and Development Strategic Plan aims to sustain US leadership in AI, complemented by substantial investments in AI education and training programs across diverse industries.

The rising demand for AI skills is reshaping industries, economies, and the very fabric of the global workforce. The challenge lies not only in meeting the immediate demand but also in preparing individuals and organizations for the continued evolution of work in the age of artificial intelligence. Staying ahead and thriving in the AI-driven future requires a proactive approach to learning, staying updated, and continuously upskilling. Leveraging a combination of resources and methods can equip professionals and aspirants with the necessary skills to navigate this evolving field. AI-focused education programs and initiatives have not only equipped a new generation of innovators but have ignited a transformative wave of groundbreaking advancements extending beyond digital innovation. This surge in knowledge has been particularly impactful due to the engagement of a youth population that is not only well-informed but also deeply connected in the digital realm.

## Embracing Continous Innovation to Nurture Aspirations

In diverse sectors like healthcare, finance, and environmental conservation, collaborative endeavors powered by AI have yielded practical and innovative solutions, showcasing the potential of harnessing artificial intelligence for societal betterment. Importantly, ethical considerations in AI development have laid the groundwork for responsible practices, cultivating trust among users and stakeholders. This trust is pivotal in fostering widespread acceptance and adoption of AI technologies, ensuring that the benefits are harnessed responsibly and sustainably.

Amidst these transformative advancements, professionals and aspirants can proactively embrace the major socio-political and economic changes brought about by AI. Collaborative projects stemming from AI-focused hackathons stand as a testament to the tangible benefits arising from collective efforts in the AI space. To navigate this AI revolution effectively, staying updated is paramount. Thought leaders and research institutes, such as MIT Technology Review, Stanford AI Lab, and Forbes AI, provide a constant influx of the latest insights and breakthroughs. Engaging in online courses, and workshops, and participating in communities dedicated to AI fosters knowledge-sharing and learning from experienced professionals. Industry reports and whitepapers from reputable research firms offer strategic insights for understanding the broader landscape and anticipating future developments.

Equipping the youth with AI skills is a crucial investment in the future. Government initiatives, educational institutions, private sector initiatives, and non-profit organizations play pivotal roles in making AI education accessible. Initiatives like the National AI strategy in India, coupled with skilling programs, aim to harness the potential of emerging technologies among the youth. The vibrant youth population in India, well-versed in technological advancements, holds a unique advantage in contributing significantly to collaborative international efforts, bringing a diverse perspective and innovative solutions to the forefront.

Advantages stemming from India's skilled youth include the potential to address global challenges through AI-driven solutions. In healthcare, AI proficiency can facilitate the development of cost-effective and scalable solutions, enhancing accessibility worldwide. In finance, innovative fintech solutions can promote financial inclusion and stability. Environmental conservation can benefit from the youth's ingenuity in developing AI-driven tools for sustainable resource management and climate change mitigation. By nurturing and empowering the youth with a comprehensive understanding of AI and its ethical implications, India's skilled workforce is poised to play a pivotal role in shaping the evolving landscape of artificial intelligence on a global scale. Continuous advancements, driven by a youth population well aware of AI intricacies, contribute not only to technological progress but also to the development of responsible and ethical AI practices. A focus on lifelong learning, developing a diverse skill set, active networking, and ethical responsibility, ensure that professionals remain at the forefront of the revolution at hand. As the landscape evolves, the strides taken by the youth, supported by robust industry practices, educational initiatives, and ethical policies, promise a future where AI not only transforms industries but also enhances the well-being of societies globally.

## Taking a Leap into the Future of AI for India

The confluence of India's demographic advantage, data abundance, and focused investments signals an exciting future where AI not only drives economic growth but also enhances the quality of life for citizens. The journey toward realizing this AI-powered potential is well underway, promising an era of innovation, progress, and prosperity for India's cultural, social and economic growth.

**Economic Growth :** India's quest for economic growth finds an able ally in AI, as it is expected to contribute 1.5 trillion USD to the Indian economy by 2035, according to a report by PwC. AI is poised to revolutionize India's economy, contributing trillions of dollars in GDP and creating millions of jobs in the process. In manufacturing, AI-powered robots are optimizing production lines, reducing errors, and enhancing productivity. In agriculture, AI-driven sensors are monitoring crop health, suggesting precise interventions, and bolstering agricultural yields. In healthcare, AI-powered

algorithms are crafting personalized healthcare plans for patients, facilitating early disease detection, and improving overall healthcare outcomes.

**Social Development :** Beyond economic prosperity, AI offers India a potent tool to tackle some of its most entrenched social challenges. AI-powered learning platforms are being used by over 10 million students in rural India, according to a report by the National Skill Development Corporation (NSDC). Education, healthcare, and poverty alleviation are causes that can significantly benefit from AI-driven innovations. AI-driven diagnostic tools are revolutionizing healthcare, enabling early disease detection, more efficient treatment plans, and improved access to quality care for India's vast and diverse population. Additionally, technology-driven financial services are reaching the financially underserved, promoting financial inclusion, and thus, taking strides towards reducing poverty with access to both government-led schemes and private funds alleviating the challenges faced by many.

**Job Creation :** Paradoxically, while AI is automating certain tasks, it is also generating new employment opportunities. The demand for AI skills in India is expected to grow by 50% in the next five years, according to a report by LinkedIn. As AI research, development, and implementation expands, new jobs are emerging in fields like data science, machine learning, and NLP engineering. The future could see up to 90 million new jobs in India by 2030, according to McKinsey Global Institute. AI has the potential to create a more diverse and dynamic job market, catering to a wide spectrum of skills and talents, and influencing a cumulative growth in the nation's capacity for innovation at speed and scale.

## Challenges on the Horizon

The path to an AI-powered India is not without its share of challenges. It is important to understand how the Indian government, industry, and academia are facing the many challenges of implementing AI head-on, to build an inclusive, progressive, and tangible future for widespread responsible AI adoption.

### 1. Shaping a Skilled Workforce

To meet the talent shortage, India is promoting AI education at all levels, from primary school to university. The government also works with businesses and universities to develop apprenticeship programs and other on-the-job training opportunities as seen in the case studies towards the end of this section. This will

bridge the skill gap deficit observed in recent years, as AI creates new jobs and as specialized disciplines in various fields reinvent the trajectory of India's economic fortitude.

As we delve into the AI industry, several noteworthy companies have natively emerged as leaders in this field. These companies are pioneering advancements in AI technology, each with its unique focus and contributions.

• Anthropic, established in 2021, is dedicated to the development of ethical AI. It employs various techniques to ensure that AI systems align with human ethics and values.

• Arya.ai has played a pivotal role in automating business processes and enabling data-driven insights for numerous enterprises. The company specializes in crafting enterprise AI solutions, harnessing technologies like natural language processing and machine learning.

• Founded in 2016, Fluid AI offers a platform powered by AI, facilitating workflow automation and the construction of business applications.

• Infinite Analytics specializes in building AI models for diverse applications, including credit profiling, health diagnostics, and personalized recommendations. Their expertise extends to sectors such as finance, healthcare, and e-commerce.

• Nanobi's extensive domain expertise spans transportation, healthcare, and education. Collaborating with global organizations, the company has developed AI models for route optimization and learning analytics.

• In the healthcare sector, Niramai is making significant strides, aiming to democratize cancer screening. Their innovative software leverages thermal images to detect breast tumors, making screening more accessible and cost-effective.

These companies exemplify India's growing influence in the global AI landscape, leveraging technology to address complex challenges and drive innovation across various industries. With the increased use of these technologies in the market, more educational institutions and corporations are inclined to offer in-house training facilities to help interested candidates catch up to the demands of AI-driven employment. By creating a space to be filled by qualified talent, the industry's evolution is complemented by public and private sector initiatives in skilling and employability enhancement that show immense promise for the future.

However, in many areas, industries have identified a skill gap deficit that must be addressed going forward to maximize the impacts of the AI revolution in India.

## 2. Ethical Concerns

In the year 2020, India took a significant step forward by unveiling the draft of its National Strategy for Artificial Intelligence. This forward-looking initiative lays the groundwork for the future regulation, development, and widespread adoption of AI within the country.

At its heart, the National Strategy for Artificial Intelligence represents India's commitment to embracing the potential of AI while ensuring that it is harnessed responsibly and beneficially. This strategic framework sets the stage for India to not only participate actively but also to lead in the global AI landscape.

## Key Elements of the National AI Strategy

• **Task Force for Ethical, Legal, and Societal Issues :** A central pillar of this strategy involves the formation of a dedicated task force. This task force is entrusted with the important responsibility of addressing ethical, legal, and societal concerns associated with AI. It conducts a thorough examination of AI's impact on various aspects, including privacy, security, fairness, and the workforce. Its mission is to ensure that AI technologies are deployed thoughtfully, taking into account their broader implications for society.

• **AI Regulatory Authority :** The strategy also envisions the establishment of an AI regulatory authority. This regulatory body is poised to become the guardian of AI standards and practices. It will set out guidelines and safeguards for AI development and implementation across diverse sectors. The authority plays a critical role in cultivating an atmosphere of trust and accountability within the AI ecosystem.

• **Driving Responsible AI Adoption: :** With a focus on responsible AI adoption, the strategy aims to strike a balance between innovation and ethics. It encourages the development and utilization of AI technologies that benefit society while safeguarding against potential risks and misuse.

By outlining these fundamental components, India's National Strategy for Artificial Intelligence paves the way for a future where AI contributes significantly to the nation's growth and welfare while upholding principles of fairness, transparency, and ethical use.

## 3. Infrastructure Changes

The Indian government is investing heavily in digital infrastructure, including high-speed internet and data centers. For example, the BharatNet project aims to provide broadband connectivity to all villages in India. Additionally, several private companies are investing in data centers in India to boost the bandwidth for AI adoption and implementation at a large scale required for cumulative progress across the nation.

AI has the potential to not only transform India's economy, society, and workforce in profound ways but also create the pedestal for a future that thrives on collaboration, innovation, and increased regard for this planet. The government has also created various innovation hubs and other ecosystems to support AI research and development across the nation. Another important offshoot to the steady advancement of AI in India is the attraction of global investors, who are keen on siding with India's knack for innovation to bridge the infrastructural gaps that prevent widespread AI adoption.

India's dedication to AI investments has not gone unnoticed, with a commendable sixth place in AI investments between 2013 and 2022, accumulating a substantial USD 7.73 billion in the past decade. A comprehensive study delves into the transformative potential of generative AI, poised to unleash USD 621 billion in productive capacity - a noteworthy contribution, nearly a fifth of India's GDP in 2021.

The AI services market is India's arena of the future, racing to a projected US$7.8 billion by 2025, moving at a CAGR of 20.2%. As this transformation unfolds, the possibilities of new job creation and the transformation of existing roles loom large. However, it's imperative to confront the challenges head-on, such as ensuring our workforce is equipped with the training and education required to match the evolving job landscape. The responsible use of AI and the ethical underpinning of its development must be at the forefront of every business and policymaker's agenda.

To delve into the implications of imminent infrastructural changes in the Indian ecosystem for AI, let's explore some case studies that highlight this year's theme "impact of AI on the future of work, skilling, and mobility."

## Inclusion in an AI-led World

The widespread adoption of Artificial Intelligence (AI) is reshaping the way we work, collaborate, and lead our lives. The use cases presented in this report, from e-commerce giants like Flipkart optimizing supply chains to tech behemoths like Google democratizing digital access through AI-driven translation tools, offer a glimpse into the monumental shifts happening across industries. Moreover, organizations like the National Skills Development Corporation (NSDC) and the Indian Institute of Technology Madras (IIT Madras) are harnessing the power of AI to provide personalized learning experiences and streamline job matching, catalyzing economic growth and individual empowerment. The Pradhan Mantri Kaushal Vikas Yojana (PM-KVY) is empowering the Indian youth with AI-related skills, addressing the workforce needs of tomorrow. As reflected in the data gathered by the WNET and Hiring Intent Survey for 2024, these initiatives are making significant strides in reducing unemployment and gender disparity by training hundreds of thousands of individuals in AI-related skills, ensuring a brighter and more inclusive future for India.

India is in the throes of an AI revolution, and the ISR 2024 report is set to chart this profound transformation, where India's workforce, skilling initiatives, and mobility take center stage in a future destined to be altered by artificial intelligence. In the following pages of this year's ISR 2024 report, we delve into findings that explore the impact of AI on the future of work, skilling, and mobility, to guide business leaders, policymakers, and academia with insights, trends, perspectives, and practical analogies required to capitalize on the AI revolution at hand. We will find avenues of growth, study the rapidly evolving talent landscape of India, and identify the implications of AI on everyday life in India and the world.

The impact of AI extends beyond enhancing operations; it encompasses the creation of jobs, economic growth, and, most importantly, the empowerment of individuals to thrive in this rapidly evolving economic landscape. As AI continues to revolutionize our industries, it is imperative that we adapt, learn, and harness its potential to usher in a future where opportunities are boundless, and inclusivity is paramount. It is important to realize that the transformation enabled by technology should empower us to discover more areas of innovation and help us base the progression of this trend on diversity and inclusion - that nobody is left behind as we face the future united in the spirit of sustainable development.

# NATIONAL EMPLOYABILITY TEST ANALYSIS
## THE SUPPLY STORY

# INSIGHTS FROM THE WHEEBOX NATIONAL EMPLOYABILITY TEST (WNET)

## Key Takeaways from the WNET Analysis for 2024

These findings in the 11th edition are a result of the evaluation of **3.88 Lakhs** candidates who took the Wheebox National Employability Test (WNET) across academic institutions in India.

• In India, the overall young employability has improved to 51.25% over the previous year. This is to state that more than 51.25% of test takers across all domains scored 60% or above on the WNET proctored survey.

• In terms of large talent availability, youth from the states of Haryana, Maharashtra, Andhra Pradesh, Uttar Pradesh, Kerala and Telangana were deemed states with the largest concentration of highly employable resources.

• Haryana has the highest employable youth concentration with 76.47% of test takers in this region scoring 60% and above on the WNET

• The age range with the highest employability was found to be between 22 and 25 years old, with 63.58% of the test takers across top 10 cities in this age range being found highly employable.

• Uttar Pradesh has the highest concentration of talent in this age group of 22-25 years old with 74.77% of applicants from this region in this age group found to be highly employable. Maharashtra comes second for employability in the age group of 22-25 with 71.97%.

• Telangana has the highest concentration of employable talent in the age group of 18-21 with 85.45% found

employable followed by Kerala 74.93% employable resources in this age group.

• Gujarat has the highest availability of employable resources in the age group of 26-29 with 78.24% in this age group found employable. Jharkhand comes second in employability for this age group of 26-29 at 76.56%.

• Among top cities with employable talent in the age group of 18-21, Pune came first with 80.82% of candidates found highly employable, followed by Bengaluru with 72.18% and then Trivandrum with 67.22% employability in this age group.

• For employability in the age group of 22-25 among topi cities, Lucknow comes first at 88.89%, followed by Mumbai at 82.45% and then Bengaluru with 74.63% availability of employable talent in this age group.

• For employability in the age group of 26-29, Pune tops the list of cities with available talent at 85.71% followed by Lucknow with 75% and then Jaipur with 71.80% employable talent in this age group.

• MBA degree holders are the top demographic for highly employable resources in terms of domain across all states, with applicants with an MBA comprising 71.16% of candidates scoring above 60% on the WNET.

• Percentage of B.Pharma test takers who scored above 60% on the WNET test increased from last year to 54% found highly employable across all states.

• Percentage of candidates from the Information Technology domain were found to be highly employable with 68.44% scoring above 60% on the WNET test across all regions.

• Computer science graduates were second most employable with 66% in this domain found highly skilled. This is a promising statistic for India's IT industry's demands entering 2024. 64.67% of graduates in BE/BTech test takers were found highly employable while 64.63 MCA candidates were also found highly employable, identifying the talent availability of qualified engineering and computer applications talent among India's youth.

• Maharashtra is the state with the highest concentration of employable talent in the BE/BTech domain with 80.56% found highly employable, followed by Andhra Pradesh with 73.23% and then Kerala with 68.36% highly employable BE/BTech talent.

• Maharashtra has the highest concentration being 84.62% of Polytechnic talent found highly employable followed by Jharkhand with 64.71% and Kerala with 16.62% in this domain

• Maharashtra has the highest concentration of highly employable candidates from the BE/BTech, Engineering domain with 69.03% scoring above 60% on the WNET.

• Karnataka at 78.85%, Maharashtra at 71.32%, and Uttar Pradesh at 58.33% are the states with the highest concentration of BBA graduates found employable

• Maharashtra at 73.15%, Madhya Pradesh 61.11% and Tamil Nadu 60.00% are the top states with employable MBA candidates

• Haryana at 90.48%, Uttar Pradesh at 80.00% and Gujarat at 54.55% are the top states with highly employable MSc. graduates



• Uttar Pradesh, Delhi and Madhya Pradesh are the top three states with the availability of highly employable talent in the ITI domain across India.

• 51.8% of male test takers nationwide were found to be employable resources, which is a significant increase from last year's 47.28% male employability ratio.

• 50.86% of females were found to be highly employable resources nationwide, a drop from last year's 53.8% female employability ratio.

• With 51.8% of male applicants determined to be highly employable compared to 50.86% of female applicants that are highly employable, the increased participation ratio of males to females in the test shows a growing balance in the availability of highly employable talent.

• The consistent rise in women's employability over the past ten years is a positive sign of radical changes in India's developing labor market. Increased participation of women at work will give industries an edge with key roles already being occupied by women as we go into 2024.

• Haryana was reported to have the highest concentration of highly employable females who are prepared for the workforce at 49.58%, while Andhra Pradesh state came in second with 39.96%.

• Maharashtra has the highest concentration of highly employable males who are prepared for the workforce at 55.24% followed by Uttar Pradesh with 54.77% highly employable male talent availability.

• The figures for the current year indicate that, like in previous years, a majority of test takers—87.83%—are looking for internship employment within organizations.

• Topping the chart for another year in a row, an increase to 98.33% of candidates interested in availing internship opportunities is in the Andhra Pradesh region, followed by Telangana with 96.72% internship seekers.

• Pune is the city with the highest concentration of male employable talent with 75% being found employable. Bengaluru has the highest number of female employable talent with 44.01% female test takers found highly employable.

• Kerala is the most preferred state to work for both male and female employable talent as per this year's results, with Cochin being the most preferred area to work for female test takers.

• Although the majority of male test takers suggested they are willing to work in any of India's top cities, Bangalore came as the next most preferred city for males seeking employment.

• Karnataka is the state with the highest availability of English skills with 73.33%, followed by Uttar Pradesh at 68.75% and Kerala at 61.66% availability of English as a Second Language.

• Bengaluru city topped the list of cities with the highest availability of English skills and Numerical while Trivandrum topped the list of cities with the highest availability of computer skills this year. Bengaluru came second in the list of cities with the highest computer skills availability.

• Telangana has the highest availability of Numerical skills with 78.68%, followed by Andhra Pradesh with 69.45% and then Maharashtra with 64.35% proficiency among the youth test takers.

• For Critical Thinking skills, candidates from Telangana scored highest with availability at 37.70% followed by Maharashtra at 33.15% and then Andhra Pradesh at 33.26% proficiency among the youth.

• Maharashtra, Uttar Pradesh, and Kerala are the top three states with the highest availability of talent with computer skills.

• States of Kerala, Maharashtra and Tamil Nadu comprised the most number of candidates willing to take up jobs with a preferred salary that paid between 0-2 lakhs per annum.

• Candidates from Kerala, Tamil Nadu, and Maharashtra constituted the majority opting for a preferred salary that paid above 2.6 lakhs per annum

**Key Finding :** Gmail is the most preferred email service provider among all test takers with 98.55% using Gmail accounts to take this year's WNET test.

## Analysis of Employability Trends and Benchmarks

The revelations stemming from the WNET employability survey within the India Skills Report 2024 paint a nuanced picture of the trends and shifts within the nation's employable youth demographic. These findings offer profound insights into the evolving expectations, as well as the demographic transformations characterizing this crucial segment of the population.

One of the paramount observations of the survey is the laudable increase in the overall employability rate, soaring to 51.25% as compared to the preceding year. This notable uptick suggests a positive trajectory in the skills and preparedness of the youth, signaling a promising outlook for their integration into the job market. The geographical distribution of highly employable resources further accentuates the diversity of regional talent pools contributing to India's employability landscape. States such as Haryana, Maharashtra, Andhra Pradesh, Uttar Pradesh, Kerala, and Telangana stand out as focal points with the highest concentration of employable resources. Haryana, with 76.47% of test takers scoring above 60% on their WNET test comprises the top state of highly employable youth this year. The rapid advancements underscores the significance of acknowledging and leveraging diverse regional strengths in workforce development initiatives.

Within the age demographic analysis, the cohort of 22-25 years emerges as a standout category with the highest employability, notably led by Uttar Pradesh. This demographic insight signifies the presence of a robust and potentially impactful workforce, particularly in the mid-entry level segment of the job market. MBA degree holders surface as the most employable demographic across all states, indicative of a prevailing preference for business education. Concurrently, the Information Technology domain, particularly exemplified by computer science graduates, exhibits substantial employability at 68.44%, complementing the demand for skills in this sector.

In terms of gender dynamics, the survey reports an overall increase in employability for males across India compared to last year's findings. Importantly, the participation ratio of males to females has experienced a notable improvement, indicating a commendable stride towards gender inclusivity in the availability of highly employable talent. The youth's proactive approach towards internships emerges as a notable theme, with a majority expressing a keen interest in such opportunities to gain experience and venture with the workforce of India. Andhra Pradesh particularly stands out in this regard, boasting a staggering 98.33% interest in internships. This trend shows a forward-thinking mindset among candidates, emphasizing the value placed on gaining practical experience. Kerala's prominence as the most preferred state for both male and female employable talent signifies regional preferences in the employment landscape. Simultaneously, Bangalore retains its status as the preferred city for male job seekers, highlighting the urban preferences of this demographic.

The proficiency landscape is also explored in the survey, with Karnataka leading in English proficiency, and Telangana showcasing excellence in numerical skills. Bengaluru takes the lead among cities with high availability in both English and numerical skills, emphasizing the importance of versatile linguistic and analytical abilities in the contemporary job market. Critical thinking skills, a cornerstone in professional aptitude, find their champions in Telangana, Maharashtra, and Andhra Pradesh. This higligths the increasing emphasis on analytical abilities among the youth, aligning with the evolving demands of the job market. States such as Maharashtra, Uttar Pradesh, and Kerala consistently demonstrate high talent availability across various skill categories solidifying their status as key hubs for potential employers. These insights serve as valuable guideposts for academia, industry, and government stakeholders to adapt their strategies in tandem with the dynamic shifts in the job market, ensuring alignment with the aspirations of the emerging workforce.

Furthermore, the survey reveals the pervasive impact of technology across all sectors, shedding light on the imperative for a harmonious integration of human skills and industrial advancements. These results, highlighted by the WNET test and survey findings, are pivotal in shaping a promising future where innovation, creativity, and technological proficiency coalesce to meet the challenges of a rapidly evolving talent landscape in India.

## Shifts in Early Career Dynamics

The evolving talent landscape in 2024 is anticipated to generate a plethora of job opportunities, particularly in the form of internships, catering to both freshers and early-career professionals. Telangana has the highest concentration of employable talent in the age group of 18-21 with 85.45% found employable followed by Kerala with 74.93% employable resources in this age group. The imperative for acquiring new skills is expected to be a driving force, with digital literacy emerging as a pivotal focus across diverse domains and job roles. The growing trend of applicants actively seeking internship opportunities reveals a substantial talent pool and the adept utilization of this resource by corporate entities will play a pivotal role in shaping India's economic strength in the years ahead.

A notable trend is the consistent increase in female labor force participation, fostering healthy competition and gradually rectifying long-standing gender imbalances across societal and cultural realms. This shift is poised to have a transformative impact at all levels. The sustained growth in available talent spans various age groups, domains, and regions, signaling a surplus of capable employees to meet existing and future demands. However, the landscape also reveals the emergence of more strategic roles for candidates of all ages. Domain-wise, B.Com and MBA graduates stand out as highly employable, and the pharmaceutical sector experiences a significant uptick in employability across diverse age brackets.

The positive hiring intent expressed by employers in last year's Hiring Intent Survey persists into 2024. There is a notable demand for candidates with 1-5 years of experience yet again this year, indicating a focus on emerging professionals. Simultaneously, there is an overarching intention to hire freshers, suggesting a balanced approach to talent acquisition. The availability of diverse prospects and heightened global awareness of Indian trade is predicted to give rise to new vocations requiring contemporary skills, across businesses of varying sizes.

## A Demographic Advantage For India

"The demographic landscape of India reflects a youthful population, with 26.31% falling in the 0-14 years category, and a median age of 28.4 years across all regions. This demographic vitality aligns seamlessly with the robust economic vibrancy indicated by an impressive employability rate of 51.25%, underscoring the substantial availability of highly employable talent within the workforce."

WNET found that **51.25%** of the participating Indian youngsters were highly employable, and **87.83%** of the applicants said they wanted to get an internship to launch their careers.

The Information Technology (IT) sector plays a pivotal role, contributing 8% to the national GDP and serving as a global IT offshore hub. MBA degree holders emerge as a key demographic, comprising 71.16% of candidates scoring above 60% on the WNET across various states, highlighting their significant contribution to the pool of highly employable resources. As new startups make their way into the IT industry, proficient business analysts, decision-makers and C-suite maestros will be in demand to reap the economic advantages of

India's budding talent market and innovation hubs scattered across the nation. India's agricultural industry, supplying 21% of the world's coconuts and 19% of bamboo, is a vital sector with over 50% of the population dependent on agriculture. The recently unveiled PLI program, backed by a $1.4 billion investment in the food processing industry, signifies a strategic initiative to fortify this essential sector, contributing to the economic resilience of the nation. In response to transportation and mobility sector changes, there is a growing demand for electric cars, aligning with efforts to combat urban and rural pollution. The electronic systems market, contributing 2.9% to the GDP, anticipates recruiting more skilled labor in the upcoming year, especially in response to emerging technologies like hybrid automobiles and energy-efficient power systems. This parallels the rising employability in related disciplines among the youth, with a notable 68.44% of candidates from the Information Technology domain scoring above 60% on the WNET across all regions. Engineering and computer applications talent among India's youth is robust, with 64.67% of BE/BTech graduates and 64.63% of MCA candidates identified as highly employable. Maharashtra leads in the concentration of employable talent in the BE/BTech domain at 80.56%, followed by Andhra Pradesh and Kerala. This wealth of technical talent meets the growing demand across industries, particularly in the Information Technology, Finance, Healthcare, Automotive and Manufacturing sectors that are rapidly implementing AI and technology solutions for better operational outcomes.

## MOST EMPLOYABLE AGE GROUP 2024



**63.58%**

MOST EMPLOYABLE AGE GROUP 2024

AGE BETWEEN 22–25 YEARS

The outcomes of this year's test show the pivotal role played by the available pool of employable talent in shaping India's economic resilience. The confluence of demographic vigor with economic strength, particularly in pivotal sectors like IT, agriculture, and emerging technologies, positions the nation on a trajectory of sustained growth and adaptability. This strategic alignment is vital for navigating the challenges and seizing opportunities presented by the ever-evolving economic landscape.

Notably, the percentage of B.Pharma test takers scoring above 60% on the WNET test has increased, reaching 54% this year. This surge in highly employable candidates across states compliments India's ever growing prowess in biotechnology on the global stage. The existing impressive biotechnology infrastructure is poised for further expansion, projected to grow at a 14% CAGR between 2022 and 2025.

Furthermore, the Aviation Sector anticipates a substantial 15.9% growth in international tourist travel, aligning with the development of a more interconnected system of global travel and commuting. The travel and tourism sector, a significant employer for approximately 90 million people across the country, is poised to experience significant benefits, especially considering the rebound from the negative impacts of the two-year hiatus caused by the COVID-19 pandemic.

The improved gender balance in the availability of highly employable talent is evident in the increased participation ratio of males to females in the test. With 51.8% of male applicants identified as highly employable compared to 50.86% of female applicants, this trend indicates a positive shift in the landscape, reflecting the consistent rise in women's employability over the past decade. This transformation in the labor market bodes well for industries, with key roles increasingly being occupied by women as we enter 2024. However, the gender parity debate will go on until a true transformation is invited by collective efforts towards creating unbiased and practical solutions to inequalities observed across the world.

The demographic data for the year 2022-2023 reveals the youthful preparedness of India's population, with a substantial portion of the workforce deemed highly employable. The IT sector's significant contribution to the national GDP and its widespread impact across diverse industries and verticals, along with growth projections in sectors like agriculture, electric cars, electronic systems, aviation, and biotechnology, paints a promising picture for India's economic future. Skill India's strategic focus on technology-oriented practical training, coupled with the establishment of an infrastructure conducive to digital literacy, agile adoption, and sustained innovation, positions the nation's skill ecosystem as a fundamental driver of jobs and learning. The success of government-led skilling initiatives and private-public partnerships lays a strong foundation for a transformative era in the impending age of AI. As India adapts and innovates, the symbiotic relationship between skills development and evolving market demands is poised to define the trajectory of the nation's workforce landscape in the years to come.

# Which Domain Have the Higest Employability

The India-wide skills data, indicating the percentage of users scoring more than **60%** in WNET Educational Domains, stands at a commendable **51.25%.** This suggests a substantial proportion of individuals exhibiting proficiency in various educational domains, notably in MBA, Engineering, and IT, underscoring a positive trajectory in the overall skill readiness of the Indian workforce.

• Delving specifically into the domain of BE/B.Tech., the percentage of employable resources is as follows across various educational domains :

• Information Technology (IT): The IT domain leads with an impressive 68.44%, emphasizing the robustness of skills in this pivotal sector.

• Computer Science (CS): Computer Science follows closely with a notable 66.00%, showcasing the strength of individuals specializing in this foundational field.

• Electronics and Communication Engineering: This domain records a substantial 58.91%, reflecting a proficient talent pool in electronics and communication.

• Electrical Engineering: With 57.69%, electrical engineering contributes significantly to the employable resource base.

• Mechanical Engineering: Mechanical Engineering stands at 54.46%, indicating a solid presence of skilled professionals in this traditional yet crucial field.

• Civil Engineering: Civil Engineering, too, is noteworthy with 54.31%, adding to the diverse skill set within the BE/B.Tech. category.

These percentages shed light on the distribution of employable talent across specific educational domains, providing valuable insights for both academia and industry. The strong representation of IT and computer science aligns with the evolving demands of the job market, while the presence of engineering disciplines propels the enduring significance of core engineering fields.The employability scores across various domains, as unveiled by this year's WNET results, offer a comprehensive snapshot of the evolving trends and preferences within India's youth. In the realm of technical education, B.E/B.Tech graduates stand out with a notable 64.67% employability score, reflecting a strong technical acumen that aligns seamlessly with the demands of rapidly evolving industries in 2024.

Shifting our focus to business education, the MBA domain emerges with a commanding 71.16% employability score, indicating a prevailing preference for a business-oriented skill set. This underscores a positive outlook for leadership and managerial roles in the job market, showcasing the importance placed on strategic and managerial expertise. For graduates in the arts, the employability score for B.Arts test takers stands at 47.11%, portraying a moderate standing and emphasizing the diverse pathways available to arts graduates. This aligns with the broader trend of acknowledging and valuing skills beyond traditional academic domains, opening doors to varied sectors. In the commerce domains, B.Com graduates exhibit a reasonably competitive employability score of 48.12%, reflecting a balanced demand for commerce-related skills. Similarly, the employability score for B.Sc graduates at 51.27% indicates the demand for scientific and analytical skills, aligning well with the evolving requirements of industries.

The technology sector remains a stronghold, with MCA test takers commanding a high employability score of 64.63%. This reflects a robust demand for specialized skills in computer applications and IT, promising significant opportunities in the technology-driven job market. Vocational skills, as represented by ITI test takers, exhibit a moderate employability score of 40%, suggesting a competitive landscape for individuals with vocational and technical expertise. Polytechnic graduates face a challenging scenario, as indicated by an employability score of 22.37%, emphasizing the need for strategic interventions and upskilling initiatives. In the pharmaceutical domain, B.Pharma graduates boast a strong employability score of 54%, signaling a promising landscape for the pharmaceutical sector. This aligns with the broader trend of growth and opportunities in the healthcare industry.
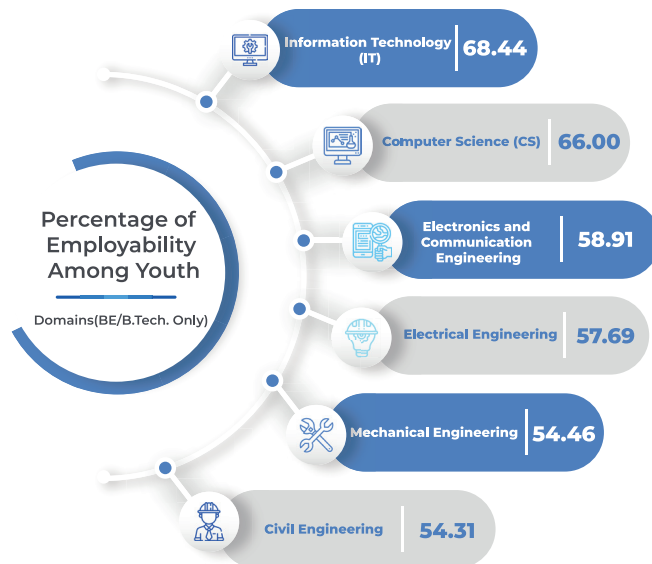
These employability scores encapsulate the diverse strengths and preferences of India's youth, reflecting a dynamic job market with a high demand for both technical and managerial skills. As we navigate the evolving landscape in 2024, the data emphasizes the importance of a well-rounded and adaptable skill set to seize the myriad opportunities presented by the job market.
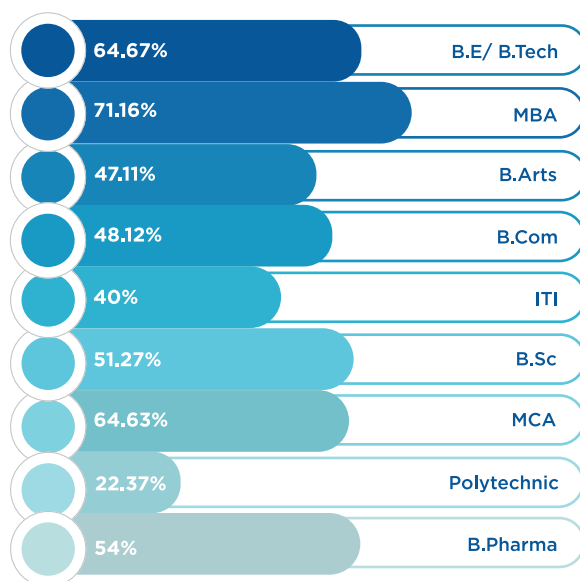
# Domain - Wise Employability

**52.25%** | 📈 OVERALL EMPLOYABILITY AMONG YOUTH

Percentage of Employability Among Youth

Domains(BE/B.Tech. Only)

| Domain | Value |
|--------|-------|
| Information Technology (IT) | 68.44 |
| Computer Science (CS) | 66.00 |
| Electronics and Communication Engineering | 58.91 |
| Electrical Engineering | 57.69 |
| Mechanical Engineering | 54.46 |
| Civil Engineering | 54.31 |

## Employability Skills of test takers who scored 60% in WNET

| Percentage | Stream |
|-----------|--------|
| 64.67% | B.E/ B.Tech |
| 71.16% | MBA |
| 47.11% | B.Arts |
| 48.12% | B.Com |
| 40% | ITI |
| 51.27% | B.Sc |
| 64.63% | MCA |
| 22.37% | Polytechnic |
| 54% | B.Pharma |

# Domain Specific Learning Agility & Ocean Personality Traits

This year's data provided highlights the top five educational streams with a higher level of learning agility and OCEAN personality traits in India from the youth employability analysis. These streams include B.Tech/B.E, MBA, B.Sc, B.Com, and B.A., where candidates expressed significant acumen in respective learning and management skills. Let's delve into the significance of these trends and their role in preparing students for the challenges posed by the ongoing AI revolution.

## 1. Learning Agility :

• **B.Tech/B.E Leading the Pack :** The inclusion of B.Tech/B.E at the forefront of both learning agility and OCEAN personality traits underscores the importance of technical education in fostering adaptability and a growth mindset. With the rapid advancements in technology, professionals with engineering backgrounds are often better equipped to grasp new concepts and apply them to real-world scenarios.

• **MBA for Strategic Thinking :** The presence of MBA in the top ranks signifies the emphasis on strategic thinking and leadership skills. In the era of AI, where business landscapes are evolving swiftly, individuals with management education are better positioned to navigate complexities, make informed decisions, and drive organizational success.

• **Diversity in Learning :** The inclusion of diverse streams like B.Sc, B.Com, and B.A suggests that learning agility is not confined to technical domains alone. A well-rounded education that includes science, commerce, and arts empowers students with versatile skills, enabling them to adapt to different professional environments.

## 2. OCEAN Personality Traits:

• **B.Tech/B.E and MBA for Conscientiousness :** The prominence of B.Tech/B.E and MBA in OCEAN personality traits, particularly conscientiousness, highlights the significance of discipline, responsibility, and attention to detail. These traits are crucial in industries where precision and reliability are paramount, especially in the context of AI-driven technologies.

• **B.Sc, B.Com, and B.A for Openness and Adaptability :** The inclusion of B.Sc, B.Com, and B.A in the OCEAN traits suggests that students from diverse educational backgrounds tend to exhibit openness to new experiences and adaptability. In the AI revolution,

where interdisciplinary collaboration is key, individuals with varied perspectives and an open mindset play a vital role in innovation.

• **Significance for Tackling the AI Revolution :** The trends in learning agility and OCEAN personality traits are highly significant in the context of the AI revolution. AI is transforming industries and job roles, demanding a workforce that is not only technically proficient but also possesses soft skills such as adaptability, creativity, and strategic thinking.

• **Adapting to Technological Changes :** B.Tech/B.E graduates, with their technical expertise, are well-suited to lead in the development and implementation of AI technologies. The inclusion of other streams signals a recognition that AI impacts diverse sectors, requiring professionals with a broad understanding of its implications.

• **Strategic Decision-Making and Leadership :** MBA graduates play a crucial role in guiding organizations through the strategic integration of AI. Their leadership skills and ability to make informed decisions contribute to the successful implementation of AI solutions in businesses.

• **Interdisciplinary Collaboration :** The diverse educational streams in the list indicate the importance of interdisciplinary collaboration in the AI landscape. Professionals with varied educational backgrounds bring unique perspectives to the table, fostering innovation and addressing complex challenges posed by AI.

The identified trends in learning agility and OCEAN personality traits underscore the need for a diverse and adaptable workforce in the face of the AI revolution. Quality education in these top streams equips individuals with the technical know-how, strategic thinking, and versatile skills necessary to not only tackle the challenges presented by AI but also to contribute meaningfully to the ongoing technological transformation in India.
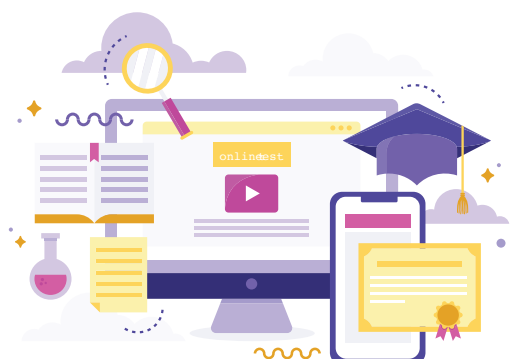
## Top 5 Educational Streams with Higher Level of Learning Agility
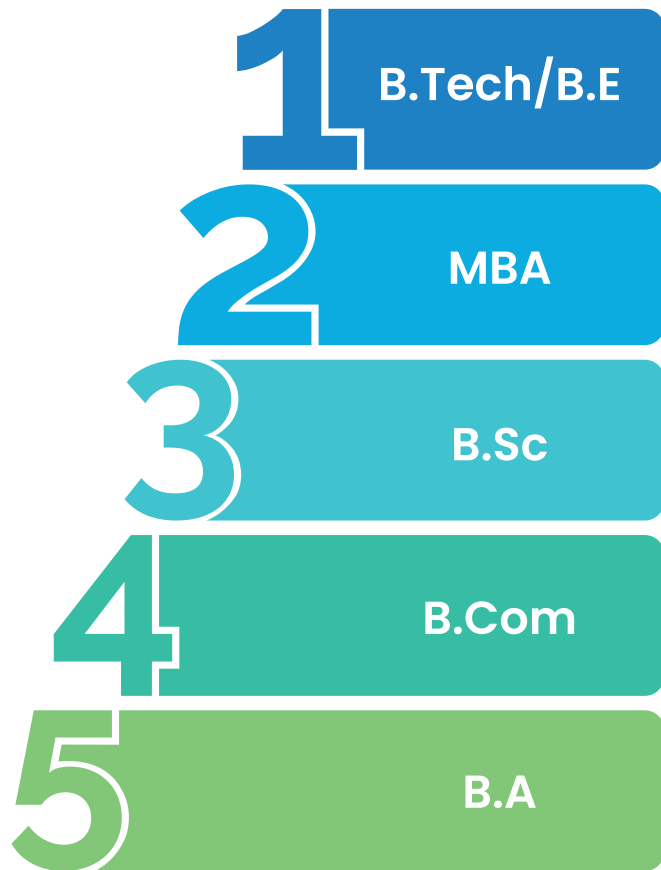
1 **B.Tech/B.E**

2 **MBA**

3 **B.Sc**

4 **B.Com**

5 **B.A**

## Age wise Employability

age of employable resources is as follows across variThe age-wise employability data in the country provides a nuanced perspective on the distribution of skilled resources, both at the national and regional levels. Examining the age-wise and city-wise data on employability provides valuable insights into the dynamic landscape of India's workforce. In the 18-21 age bracket, Telangana, Kerala, and Maharashtra stand out as top-performing states, showcasing a promising trend in the younger demographic. As we transition to the 22-25 age group, Uttar Pradesh, Maharashtra, and Delhi take the lead nationally, indicating a surge in employable resources as youth progress in their careers.

Moving to the 26-29 age range, Gujarat, Jharkhand, and Maharashtra emerge as frontrunners, suggesting sustained employability trends in the slightly older cohort. This regional diversity underscores the need for targeted interventions, recognizing that employability dynamics can vary significantly across states. Shifting the focus to cities, Pune consistently shines across all age groups, emphasizing its status as a robust employment hub. Bengaluru and Maharashtra cities dominate the 18-25 age groups, highlighting these regions as thriving ecosystems for young, employable talent. Meanwhile, Lucknow takes a prominent position in the 22-29 age categories, showcasing its relevance as a city with a diverse talent pool.

It's important to note that this analysis primarily captures urban employability trends, and understanding the rural landscape is equally vital for a comprehensive overview. As we delve into the implications of these findings, it becomes evident that a one-size-fits-all approach may not suffice. Tailored strategies for each age group and region can enhance employability initiatives. Skill development programs, especially in states with lower employability rates, should be a priority. Aligning educational and skill development programs with the specific needs of industries in different regions is essential for fostering a skilled and adaptable workforce.

This year's findings lay the groundwork for informed decision-making in education, skill development, and employment policies. Policymakers in government, academia, and industry should consider regional nuances and demographic factors to formulate effective and inclusive employment policies that cater to the diverse needs of India's evolving workforce. This comprehensive breakdown illuminates the regional and age-specific nuances in employability, providing

valuable insights for shaping targeted strategies and interventions in the job market.

## Age Group : 18-21 Years

**India-wide Percentage of Employable Resource: 47.76% - Top 10 States**



- Telangana
- Kerala
- Maharashtra
- Andhra Pradesh
- Uttar Pradesh
- Karnataka
- Tamil Nadu
- Bihar
- Punjab
- Haryana
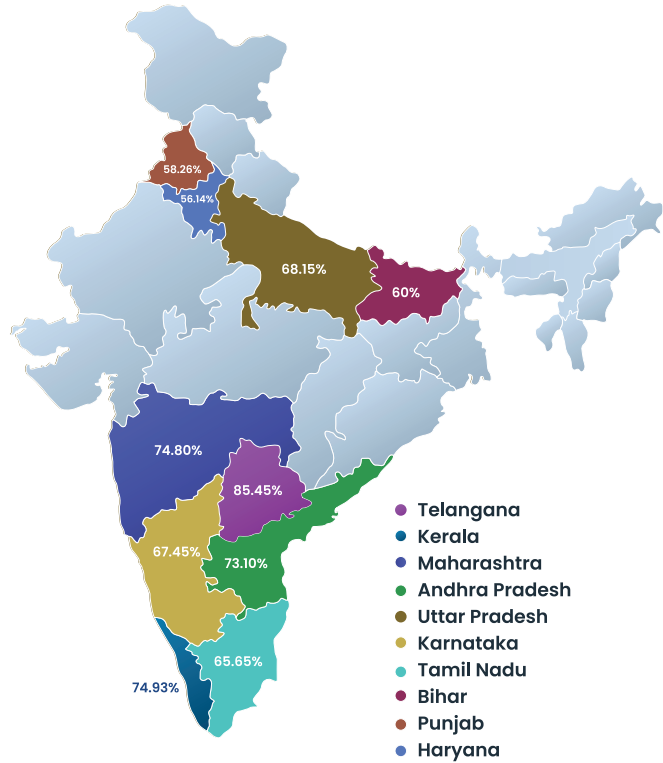
## Age Group : 22-25 Years

**India-wide Percentage of Employable Resource: 63.58% - Top 10 States**



- Uttar Pradesh
- Maharashtra
- Delhi
- Karnataka
- Madhya Pradesh
- Andhra Pradesh
- Kerala
- Tamil Nadu
- Haryana
- Bihar
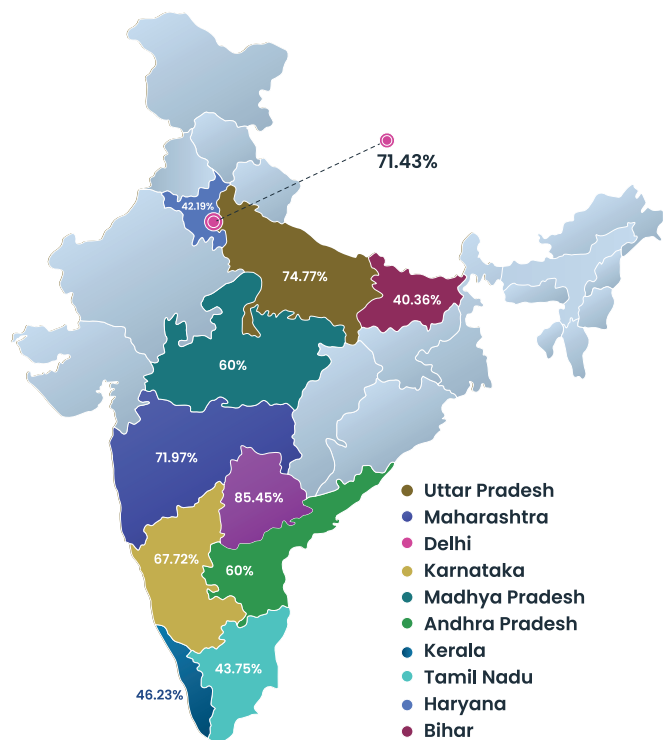
## Age Group : 26-29 Years

### India-wide Percentage of Employable Resource: 54.95% - Top 10 States



- 42%
- 45%
- 50%
- 62.50%
- 76.56%
- 78.24%
- 71.10%
- 45.33%
- 40.60%
- 26.06%

- ● Gujarat: 78.24%
- ● Jharkhand: 76.56%
- ● Maharashtra: 71.70%
- ● Uttar Pradesh: 62.50%
- ● Rajasthan: 50.00%
- ● Kerala: 47.62%
- ● Karnataka: 45.33%
- ● Haryana: 45.00%
- ● Delhi: 42.00%
- ● Tamil Nadu: 40.60%
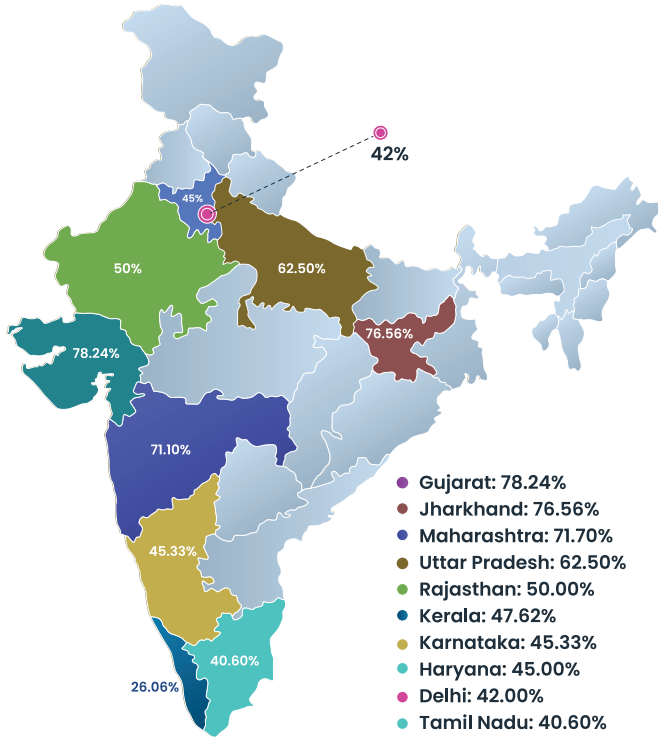
## Age Group : 18-21 Years

### Top 10 Cities



- 33.5%
- 61.00%
- 39.85%
- 58.28%
- 80.82%
- 51.50%
- 72.18%
- 47.10%
- 67.22%
- 62.63%

- ● Pune: 80.82%
- ● Bengaluru: 72.18%
- ● Trivandrum: 67.22%
- ● Ernakulam: 62.63%
- ● Lucknow: 61.00%
- ● Ahmedabad: 58.28%
- ● Hyderabad: 51.50%
- ● Chennai: 47.10%
- ● Patna: 39.85%
- ● Gurgaon: 33.50%
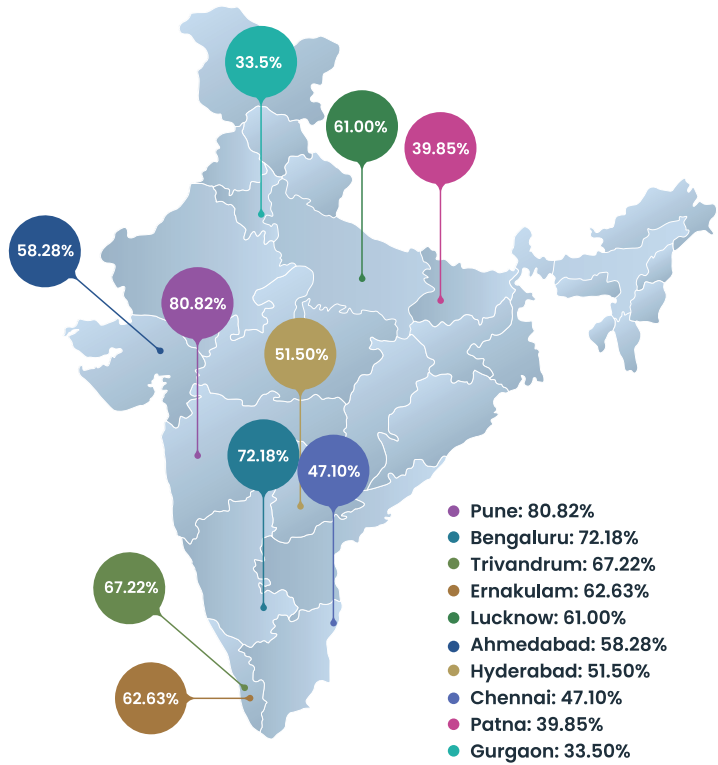
## Age Group : 22-25 Years

### Top 10 Cities



- 71.43%
- 63.04%
- 88.89%
- 58.50%
- 42.50%
- 51.29%
- 70.41%
- 82.45%
- 74.63%
- 46.90%

- ● Lucknow
- ● Mumbai
- ● Bengaluru
- ● New Delhi
- ● Pune
- ● Gurugram/Gurgaon
- ● Patna
- ● Nagpur
- ● Kozhikode
- ● Indore
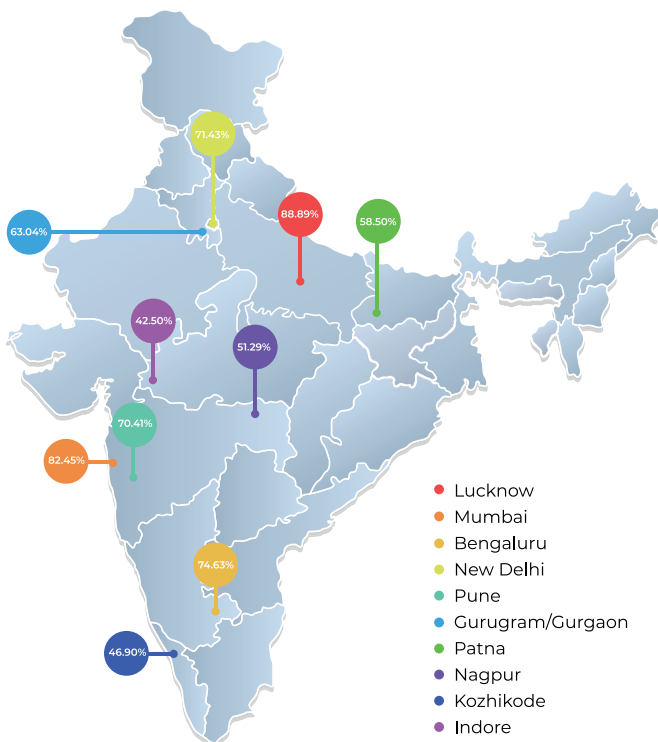
## Age Group : 26-29 Years

### Top 10 Cities



- 39.00%
- 75.00%
- 71.80%
- 32.58%
- 27.00%
- 55.00%
- 85.71%
- 61.80%
- 65.50%
- 47.50%

- ● Pune
- ● Lucknow
- ● Jaipur
- ● Chennai
- ● Bengaluru
- ● Nagpur
- ● Thiruvananthapuram
- ● New Delhi
- ● Ranchi
- ● Rajkot
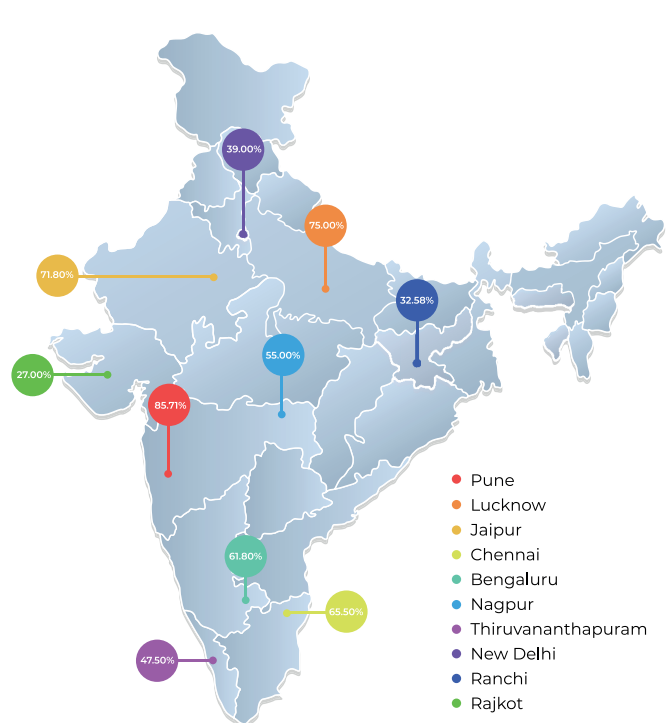
## State with Highest Youth Employability

The data on WNET scores above 60% provides a nuanced understanding of the regional and urban distribution of high-performing candidates. In the realm of states, Maharashtra comes second in the lead with an impressive score of 73.03%, followed closely by Andhra Pradesh, Uttar Pradesh, and Kerala. Telangana, Karnataka, and Punjab also secure notable positions, showcasing a robust presence of well-performing candidates across diverse regions. However, the standout performer is Haryana, recording an exceptional score of 76.47%, magnifying its prominence in nurturing high-scoring individuals in the years leading up to 2024.

Shifting the focus to cities, Pune emerges as the frontrunner, with an impressive 75.00% of candidates scoring above 60%. Bengaluru and Mumbai follow, demonstrating their significance as urban centers fostering a high-caliber talent pool. Delhi, Trivandrum, and Lucknow secure notable positions, further highlighting the geographical diversity of well-performing candidates. Interestingly, the data indicates that performance in WNET is not confined to major hiring activity in top metropolitan areas, despite cities like Guntur, Chandigarh, and Chennai boasting a remaining vast majority of candidates with scores exceeding 60%.

The decentralization of high-scoring individuals suggests a promising trend of talent dispersion beyond major urban hubs. Firstly, the decentralization of high-scoring individuals signifies a more inclusive participation in skill development and employment readiness. Traditionally, major urban hubs have been perceived as the primary contributors to the skilled workforce, leading to a concentration of opportunities in specific geographic locations. However, the WNET data challenges this notion by showcasing that talent and proficiency are not limited to metropolitan areas alone. This diversification broadens the pool of skilled individuals, creating a more geographically distributed talent landscape as evident from the numerous states that are in contention for highly employable talent.

For policymakers, educators, and businesses, recognizing and nurturing talent in non-metropolitan areas becomes crucial. Tailoring skill development initiatives and educational programs to cater to the specific needs and aspirations of individuals in these regions can further amplify the positive impact. Additionally, businesses looking to expand or set up operations

could explore untapped talent pools in these areas, fostering economic growth in previously overlooked regions.

**Fun Fact:** 95.27% of test takers used a Google Chrome browser to take the test.

Secondly, the impact on the Indian job market is noteworthy. The dispersion of high-scoring candidates beyond urban centers implies that businesses and industries in non-metropolitan regions may witness an upsurge in access to well-prepared and proficient professionals. This could lead to a more balanced distribution of employment opportunities across the country, reducing the overreliance on metropolitan areas and potentially addressing issues related to migration for employment. Moreover, the promising trend in non-urban India suggests that efforts in skill development, education, and employment readiness programs are making inroads into diverse regions. This decentralization aligns with broader national goals of inclusive growth, where opportunities are not confined to specific pockets but are accessible to talent across the country.

## States-Wise Employability

**Top 10 States where users have scored more than 60% in WNET**



- Haryana
- Maharashtra
- Andhra Pradesh
- Uttar Pradesh
- Kerala
- Telangana
- Karnataka
- Punjab
- Tamil Nadu
- Delhi
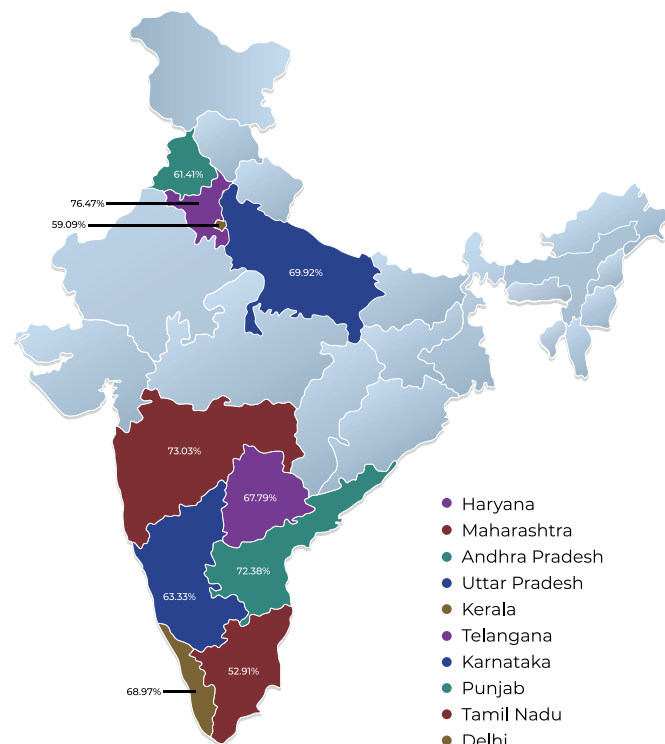
## City-Wise Employability

**Top 10 Cities where users have scored more than 60% in WNET**



- ● Pune — 75%
- ● Bengaluru — 72.46%
- ● Mumbai — 68.23%
- ● Delhi — 65.87%
- ● Trivandrum — 55.24%
- ● Lucknow — 54.15%
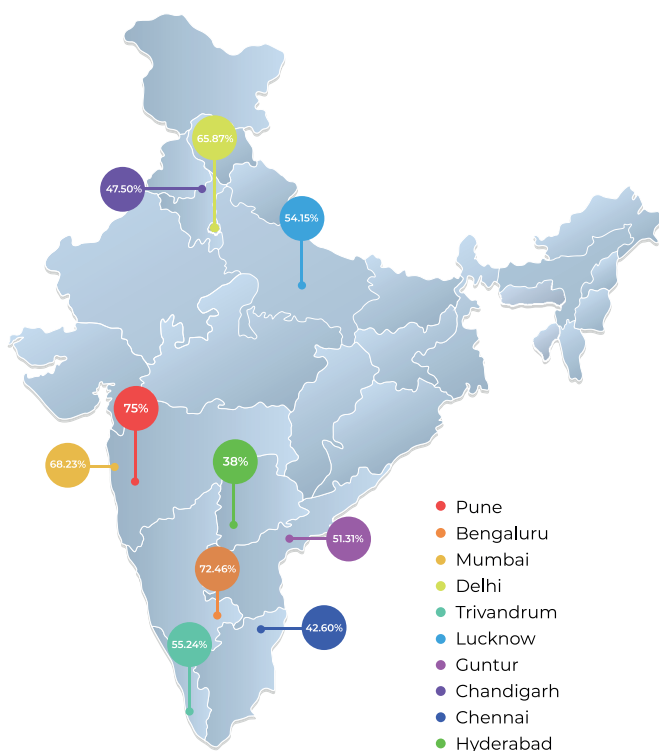- ● Guntur — 51.31%
- ● Chandigarh — 47.50%
- ● Chennai — 42.60%
- ● Hyderabad — 38%

## In-Demand Skills Across India's Youth Population

The data on skills distribution across states and cities in India reveals valuable insights into the preparedness of the country's workforce. Here are key takeaways and justifications for the impact of these trends on the future of India's job market and talent landscape :

• **English as a Second Language :** Karnataka emerges as a leader with 73.33% proficiency, reflecting the state's emphasis on language skills. Uttar Pradesh and Maharashtra follow closely, showcasing a diverse geographic spread of English proficiency. Proficiency in English is crucial for various industries, including IT and customer service. States with high proficiency are likely to attract more job opportunities in these sectors, fostering economic growth.

• **Numerical Skills :** Telangana exhibits remarkable numerical skills at 78.68%, emphasizing the state's focus on quantitative abilities. Bengaluru and Vijayawada lead in cities, indicating strong numerical capabilities in major urban hubs. Proficiency in numerical skills is vital for roles in finance, data analytics, and STEM

fields. Regions excelling in this domain are poised for growth in these industries, contributing to a technologically advanced job market.

• **Critical Thinking :** Telangana tops the list with 37.70%, showcasing a culture that values analytical thinking. Maharashtra and Andhra Pradesh closely follow, indicating a trend toward developing critical thinking skills. Critical thinking is essential in problem-solving and innovation. States fostering this skill set are likely to witness advancements in research, technology, and entrepreneurship, shaping a dynamic job market.

• **Computer Skills :** Maharashtra, Uttar Pradesh, and Kerala lead in computer skills, underscoring their commitment to technological advancements. Bengaluru emerged as a technology hub, leading among cities. Proficiency in computer skills is foundational in the digital age. Regions excelling in this area are poised to become technology hubs, attracting industries seeking a technologically adept workforce.

• **Regional Variations :** Kerala consistently appears in the top states across different skills, showcasing a well-rounded talent pool. Uttar Pradesh and Bihar, while excelling in numerical skills, exhibit diverse proficiency levels in other domains. Regions with diverse skill sets are better equipped to meet the multifaceted demands of an evolving job market, ensuring resilience and adaptability.Overall, the geographic spread of skills in India indicates a positive trajectory toward a well-prepared and diverse talent pool. The emphasis on language, numerical, critical thinking, and computer skills aligns with the demands of a globalized and technology-driven job market. The trends observed suggest that states and cities fostering a holistic skill development approach are likely to lead in attracting diverse industries, contributing significantly to India's economic and job market growth.

**Key Takeaway :** Overall, Haryana stands out as a top performer in youth employability development, with an impressive 76.47% of test takers scoring above 60% on their WNET tests

# Domain Specific Employability Across States

**Top 5 States where engg graduates(BE/BTech) have scored more than 60% in their Domain**



80.56%
73.23%
61.43%
35.65%
68.36%

- Maharashtra
- Andhra Pradesh
- Kerala
- Karnataka
- Tamil Nadu
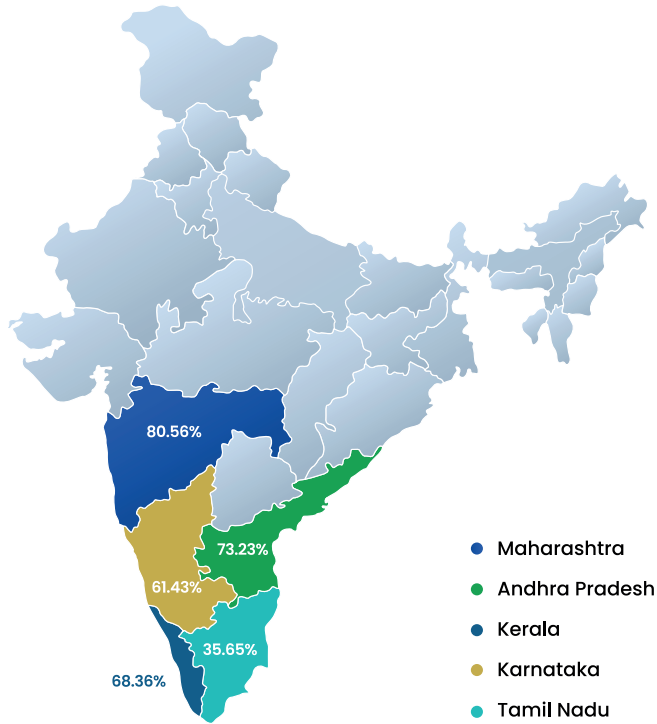
**Top 5 States where ITI candidates have scored more than 60% in their Domain**



- Uttar Pradesh
- Gujarat
- Delhi
- Madhya Pradesh
- Kerala
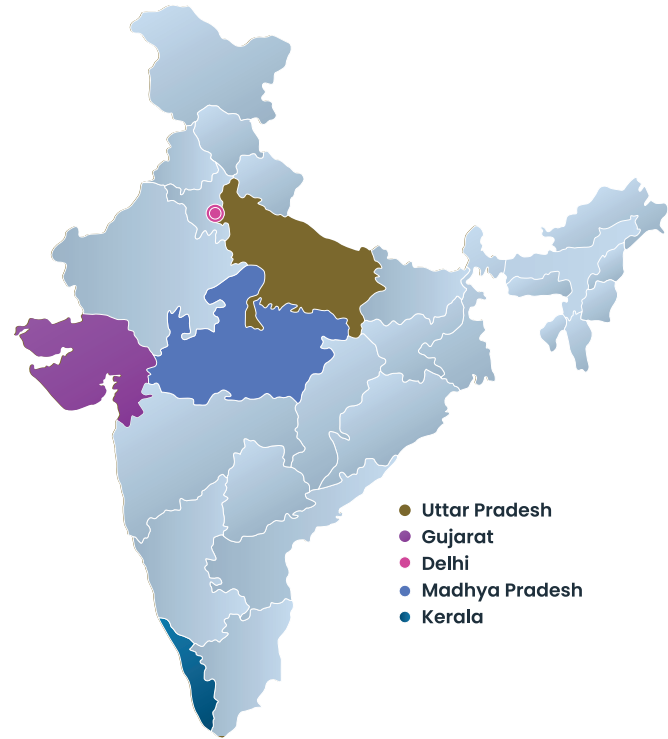
**Top 5 States where Polytechnic graduates have scored more than 60% in their Domain**



10.00%
64.71%
84.62%
14.29%
16.62%

- Maharashtra
- Jharkhand
- Kerala
- Tamil Nadu
- Bihar
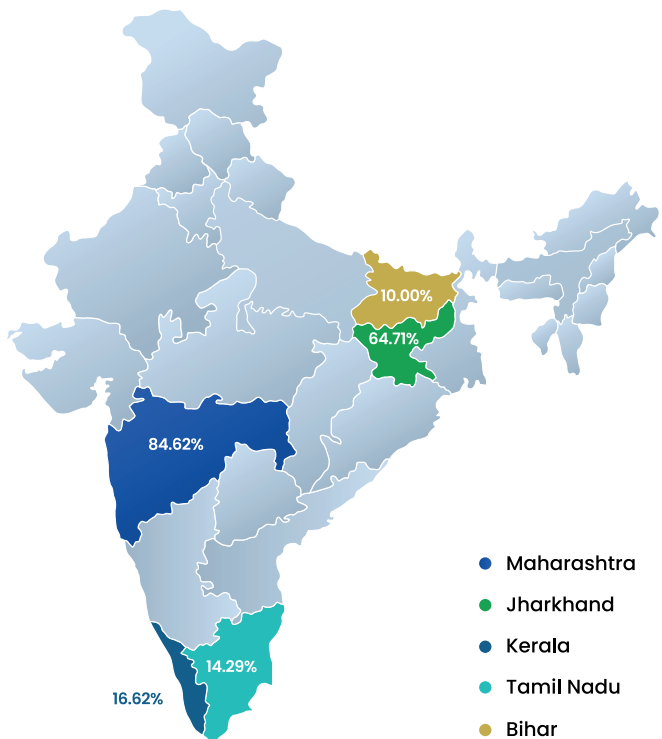
**Top 5 States where MCA post graduates have scored more than 60% in their Domain**



90.48%
80.00%
54.55%
53.13%
47.22%

- Haryana
- Uttar Pradesh
- Gujarat
- Tamil Nadu
- Kerala
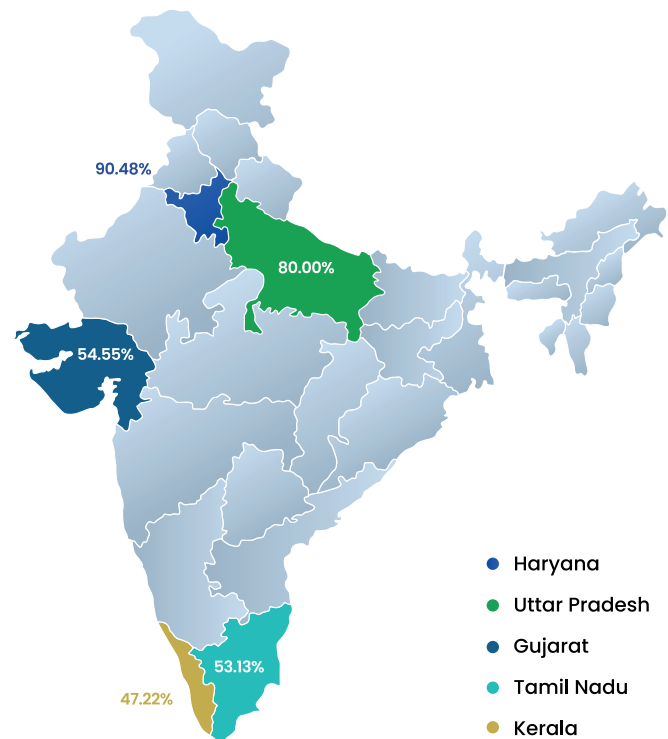
## Top 5 States where M.Sc. post graduates have scored more than 60% in their Domain

60.00%
50.00%
64.29%
90.91%
50.43%

- Tamil Nadu
- Karnataka
- Maharashtra
- Kerala
- Andhra Pradesh
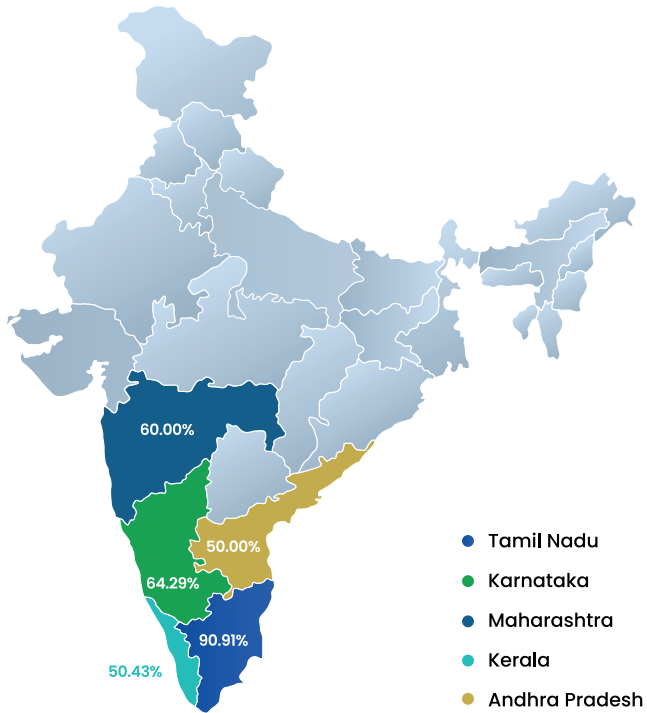
## Top 5 States where B.A. graduates have scored more than 60% in their Domain

56.76%
38.46%
71.32%
78.85%
35.14%

- Karnataka
- Maharashtra
- Uttar Pradesh
- Bihar
- Kerala
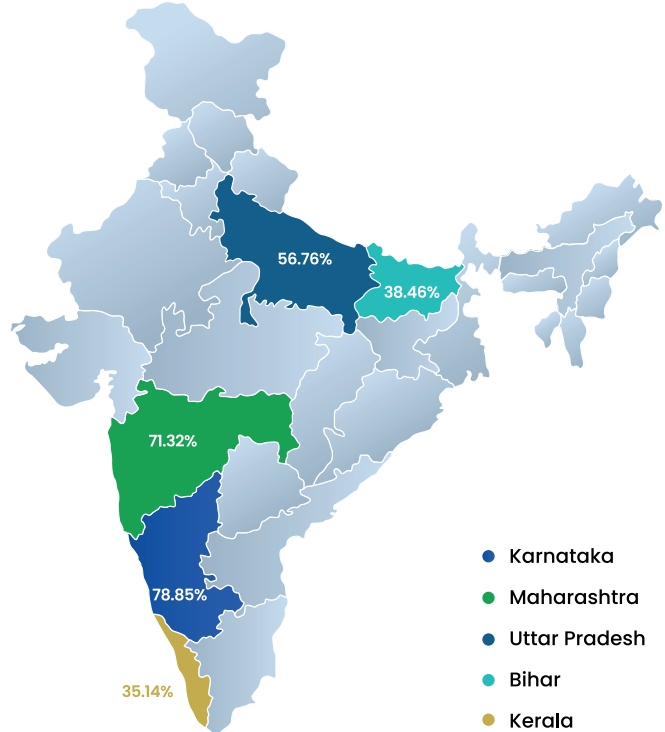
## Top 5 States where MBA post graduates have scored more than 60% in their Domain

55.32%
61.11%
73.15%
60.00%
48.84%

- Maharashtra
- Madhya Pradesh
- Tamil Nadu
- Uttar Pradesh
- Kerala
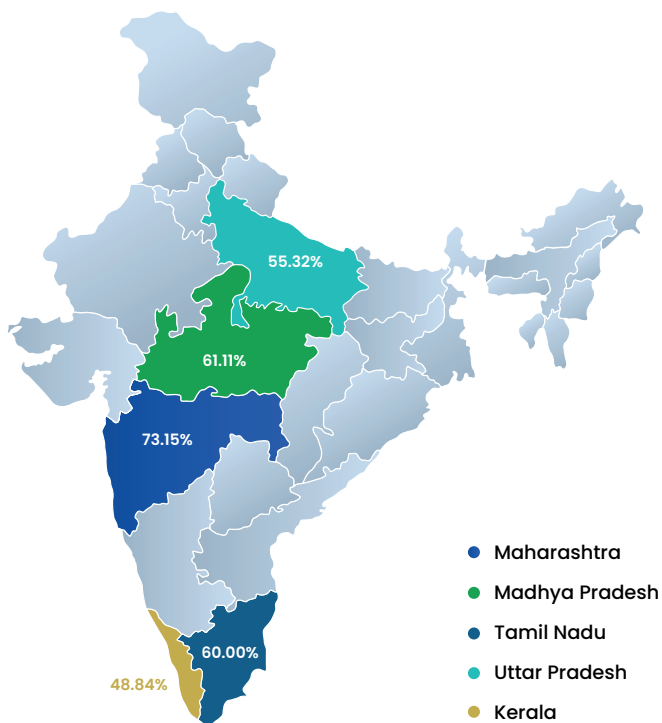
## Top 5 States where BCA graduates have scored more than 60% in their Domain

89.29%
63.89%
71.11%
42.86%
43.18%

- Haryana
- Karnataka
- Maharashtra
- Kerala
- Tamil Nadu
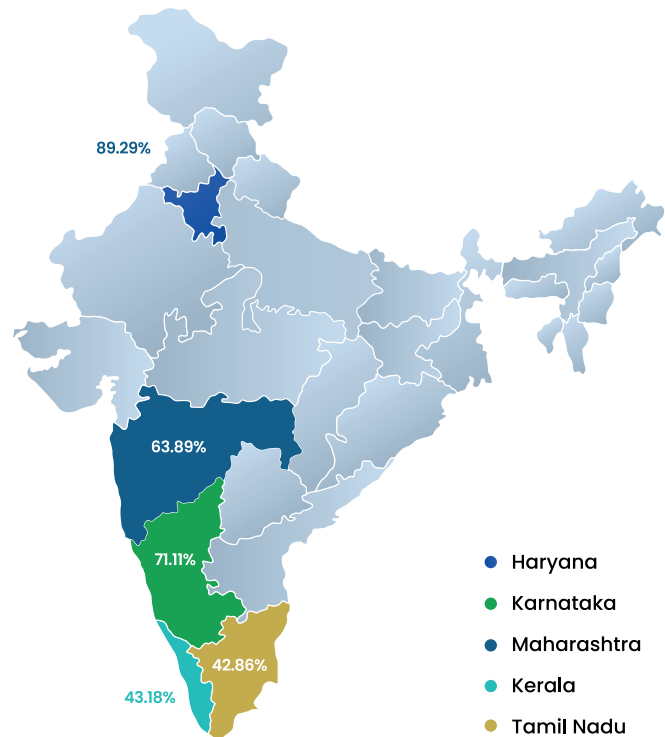
**Top 5 States where BCom graduates have scored more than 60% in their Domain**



71.70%
73.88%
75.41%
55.56%
29.78%

- Karnataka
- Maharashtra
- Uttar Pradesh
- Tamil Nadu
- Kerala
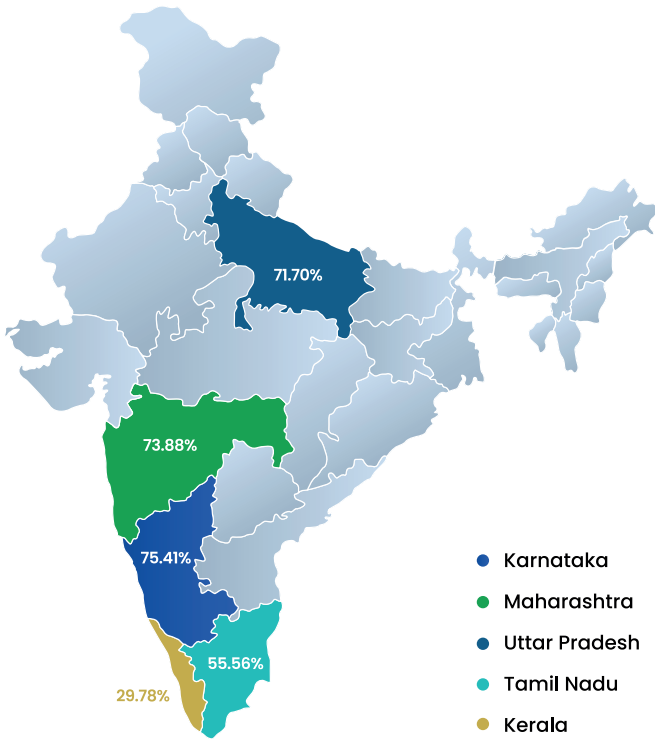
**Top 3 States where BBA graduates have scored more than 60% in their Domain**



58.33%
38.46%
71.32%
78.85%
35.14%

- Karnataka
- Maharashtra
- Uttar Pradesh
- Bihar
- Kerala
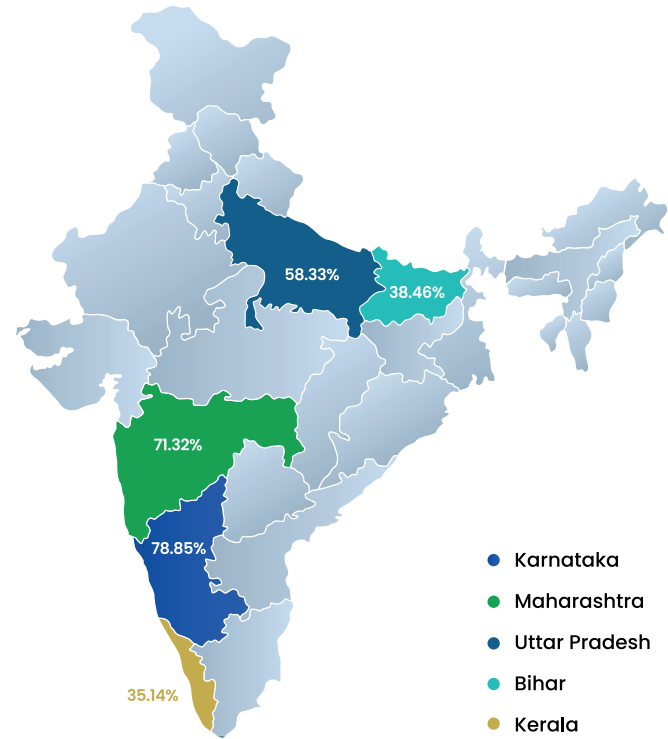
**Top 5 States where BSc graduates have scored more than 60% in their Domain**



72.22%
68.90%
67.20%
71.05%
42.49%

- Uttar Pradesh
- Tamil Nadu
- Maharashtra
- Karnataka
- Kerala
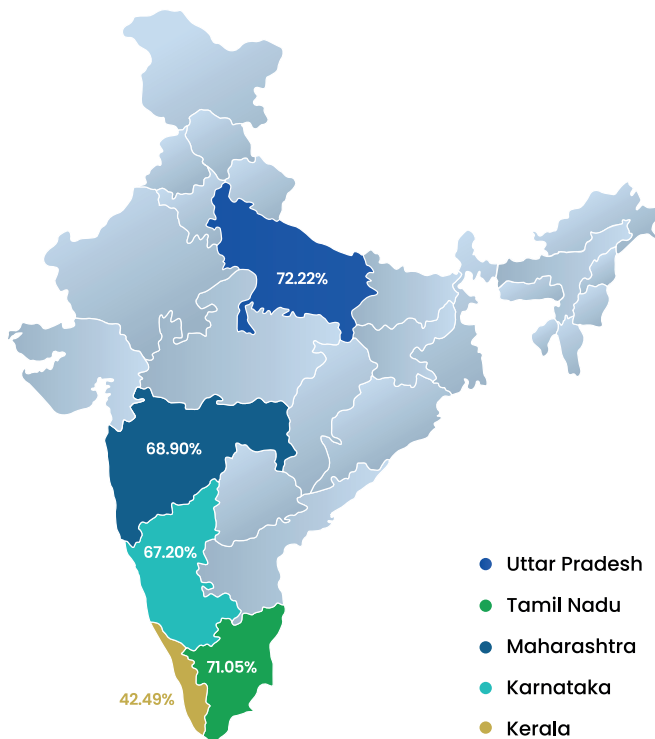
# Skill-Wise Talent Availaility in The Nation

**Top 10 States with Available Skills in English as Second Language**



59.69%
48%
68.75%
61.11%
65.62%
66.14%
73.33%
65.48%
61.18%
61.66%

- Karnataka
- Uttar Pradesh
- Telangana
- Maharashtra
- Andhra Pradesh
- Kerala
- Tamil Nadu
- Delhi
- Bihar
- Haryana

## Top 10 States with Available Skills in Numerical



- ● Telangana 78.68%
- ● Andhra Pradesh 69.45%
- ● Maharashtra 64.35%
- ● Uttar Pradesh 61.71%
- ● Bihar 61.47%
- ● Karnataka 61%
- ● Tamil Nadu 59.09%
- ● Kerala 54.8%
- ● Haryana 44.78%
- ● Punjab 41.57%
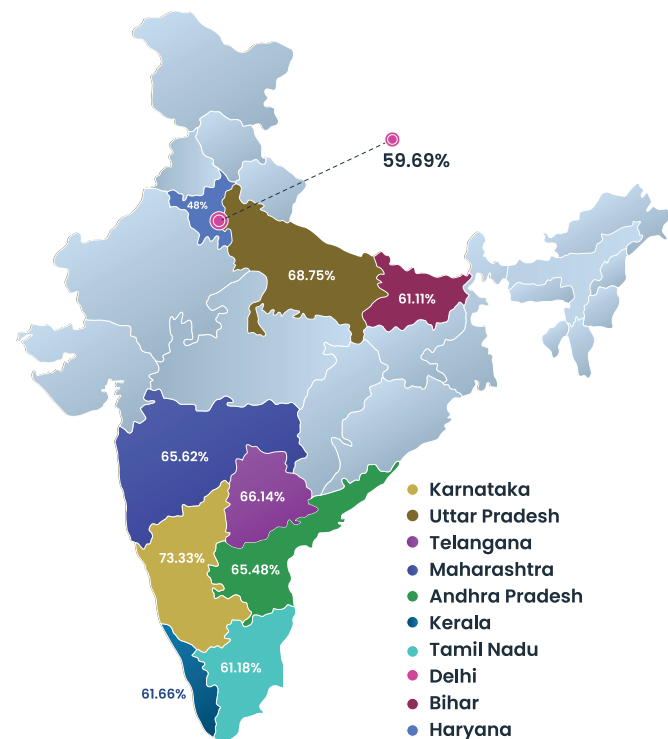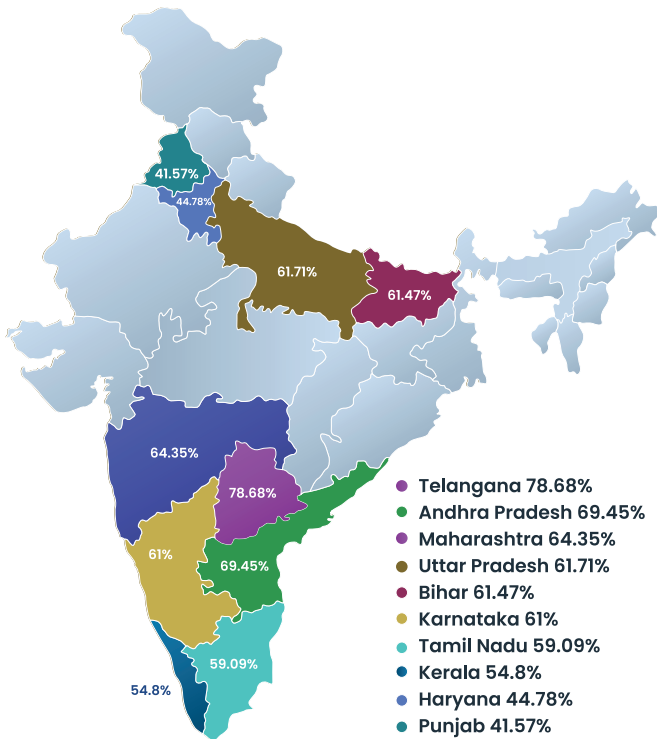
## Top 10 States with Available Skills in Computer Skills



- ● Maharashtra
- ● Uttar Pradesh
- ● Kerala
- ● Bihar
- ● Karnataka
- ● Uttarakhand
- ● Telangana
- ● Andhra Pradesh
- ● Punjab
- ● Tamil Nadu
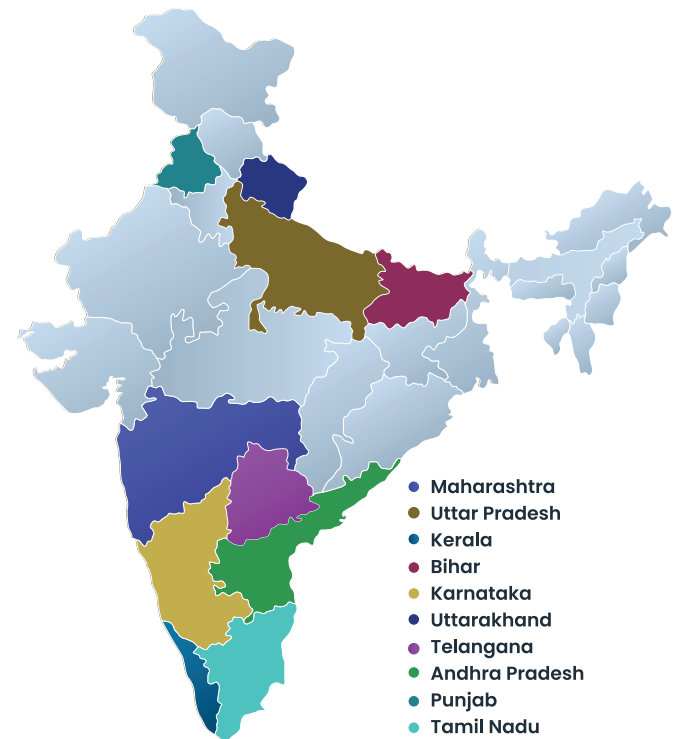
## Top 10 States with Available Skills in Critical Thinking



- ● Telangana 37.70%
- ● Maharashtra 33.15%
- ● Andhra Pradesh 33.26%
- ● Delhi 31.81%
- ● Karnataka 31.5%
- ● Uttar Pradesh 29.29%
- ● Kerala 26.06%
- ● Tamil Nadu 25.00%
- ● Punjab 22.81%
- ● Haryana 27.45%

## Top 10 Cities with Available Skills in English as Second Language
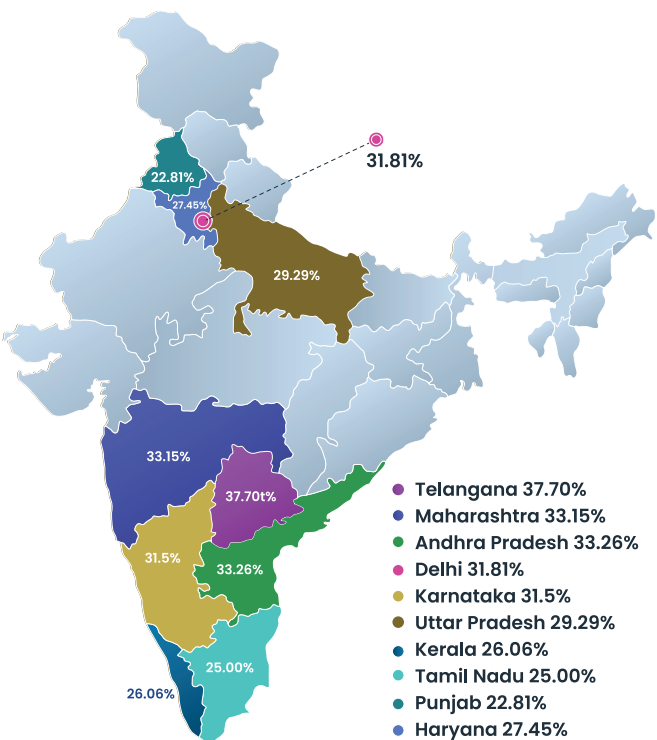


- ● Bengaluru
- ● Pune
- ● Kollam
- ● Mumbai
- ● Trivandrum
- ★ New Delhi
- ● Chennai
- ● Lucknow
- ● Hyderabad
- ● Kozhikode
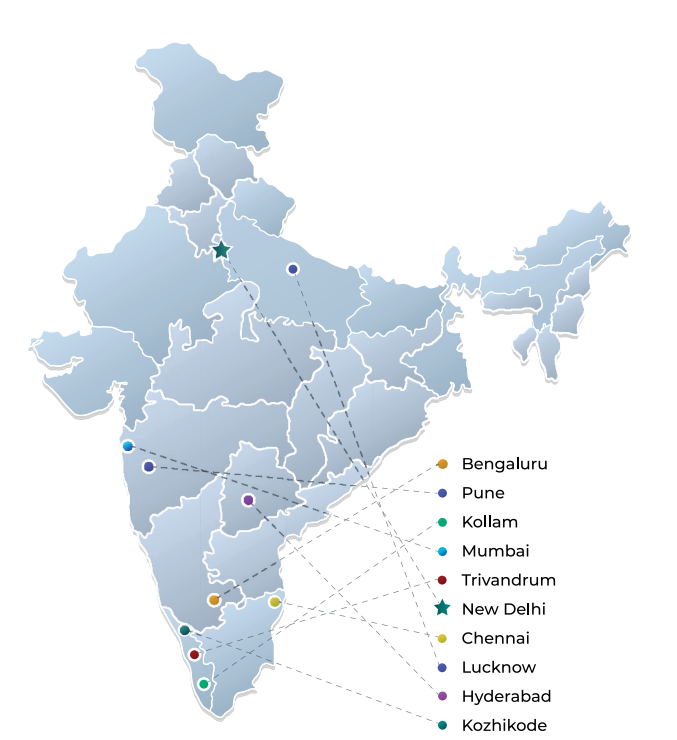
**Top 10 Cities Available Skills in Numerical**



- Bengaluru
- Vijayawada
- Guntur
- Nashik
- Vadgaon
- Satara
- Pune
- Mumbai
- New Delhi
- Lucknow
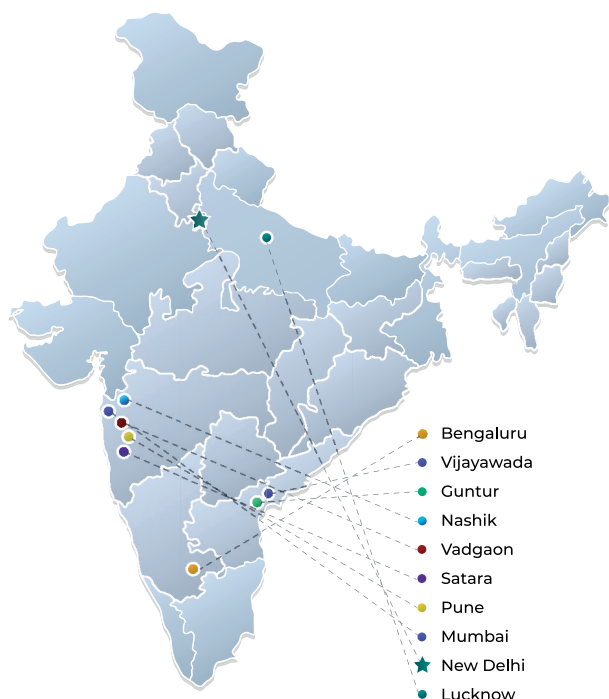
## Gender Participation and Employability

Within the framework of India's economic trajectory, gender disparities persist, reflecting a labor force participation rate of 73.6% for males and 24% for females. ISR's recent survey, a beacon of fresh insights, paints an optimistic picture, revealing an encouraging increase in female participation in the organized sector from 33% to 36% in 2023. While this progress is noteworthy, the stark reality remains that less than 1 in 5 Indian women are part of formal employment, underscoring the imperative need for sustained efforts to bridge the gender gap.

The data on gender participation is enriched by the findings in this year's WNET results, further illuminating the evolving landscape of India's employment dynamics. India-wide, the percentage of male employable resources stands at 51.8%, slightly higher than their female counterparts at 50.86% this year. This nuanced difference reflects a more balanced gender participation rate in employability rather than a red flag, with both males and females contributing significantly to the skilled workforce.

In the top 10 states with the highest percentage of available male employable resources, Maharashtra leads with 55.24%, followed closely by Uttar Pradesh at

54.77%. The data suggests a robust male employability landscape across states, with a noteworthy presence in regions such as Andhra Pradesh, Karnataka, and Tamil Nadu.

Conversely, when examining the top 10 states with the highest percentage of available female employable resources, Haryana emerges at the forefront with 49.58%, indicating a considerable female employability index in the state. While these figures showcase encouraging signs, it's essential to address the variations across states and continue fostering an environment conducive to female participation in the workforce. In major cities, Pune takes the lead with the highest percentage of available male employable resources at 75.00%, closely followed by Bengaluru at 72.16%. On the female employability front, Bengaluru leads with 44.01%, reflecting a strong female workforce in the city. These urban insights highlight the diverse dynamics of gender participation at the city level, showcasing both male and female contributions to the skilled labor force of the future.

Increased female participation in the workforce to 36% from last year's 33% is a massive step in the right direction, with males comprising 64% of the workforce across industries this year, compared to last year's 67% as per this year's Hiring Intent Survey. This positive trajectory signifies a shifting paradigm in gender dynamics, indicating an expanding role for women in India's workforce. However, the persistent gender gap underscores the need for comprehensive strategies to enhance female inclusion and equal opportunities in all sectors. While there is evident progress in bridging gender disparities, sustained efforts are crucial to achieving true gender parity in the Indian eonomy. This year's data reflects a positive trajectory, emphasizing the importance of continued initiatives and policies that empower and encourage female participation, contributing to a more

## Gender-Wise Employability Trends

**India-wide Percentage of Male and Female-Employable resource**

**51.8%** — INDIA-WIDE PERCENTAGE OF MALE EMPLOYABLE RESOURCE 2024

## India-wide Percentage of Female Employable resource

**50.86%** INDIA-WIDE PERCENTAGE OF FEMALE EMPLOYABLE RESOURCE 2024

## Top 10 City where Percentage of available Female Employable resources

Top 10 City with Percentage of available Female Employable resources

Bengaluru 44.01%
Pune 39.10%
Chandigarh 38.00%
Mumbai 36.50%
New Delhi 33.80%
Trivandrum 32.90%
Hyderabad 28.58%
Lucknow 27.28%
Guwahati 22.80%
Bhubaneshwar 19.60%

## Top 10 States where Percentage of available Male Employable resources

Top 10 States with Percentage of available Male Employable resources

Maharashtra 55.24%
Uttar Pradesh 54.77%
Andhra Pradesh 51.43%
Karnataka 46.33%
Tamil Nadu 41.36%
Kerala 39.83%
Telangana 38.82%
Bihar 32.00%
Punjab 29.98%
Haryana 26.89%

## Top 10 States where Percentage of available Female Employable resources

Top 10 States with Percentage of available Female Employable resources

Haryana 49.58%
Andhra Pradesh 39.96%
Delhi 36.36%
Uttar Pradesh 35.16%
Punjab 34.43%
Maharashtra 32.83%
Telangana 31.15%
Kerala 24.96%
Tamil Nadu 24.55%
Bihar 18.03%

## Top 10 City where Percentage of available male Employable resources

Top 10 City with Percentage of available Male Employable resources

Pune 75.00%
Bengaluru 72.16%
Lucknow 67.02%
Mumbai 65.50%
New Delhi 61.50%
Trivandrum 53.24%
Hyderabad 47.5%
Chennai 47.10%
Jaipur 42.60%
Ahmedabad 41.50%

## Freshers Seeking Internships Across The States

In a nation pulsating with youthful vigor and ambition, the latest data on internship aspirations among Indian youth reveals an exciting narrative. With a staggering 87.83% of users expressing a keen interest in availing internships, the enthusiasm for experiential learning and professional growth is palpable across the country.

Delving deeper into the regional landscape, the top 10 states spearheading this internship fervor paint a promising picture for the future of India's corporate hiring activity:

• **Andhra Pradesh (98.33%) :** The southern state emerges as a frontrunner, with an overwhelming majority of users expressing a strong desire for internships. This signals a proactive and career-oriented youth population, setting a high benchmark for other states.

• **Telangana (96.72%) :** In close pursuit, Telangana showcases a vibrant ecosystem of aspiring interns. The state's commitment to nurturing talent and providing practical exposure is evident in this robust interest.

• **Punjab (93.44%) :** The northern state demonstrates a commendable appetite for internships, indicating a robust educational environment and an eagerness among youth to bridge the gap between academia and industry.

• **Haryana (92.44%) :** With a significant percentage of users expressing their intent for internships, Haryana reflects a workforce that understands the value of hands-on experience and is ready to contribute meaningfully to the professional arena.

• **Bihar (91.80%) :** The eastern state surprises with a strong inclination towards internships, reflecting a changing narrative in a region traditionally known for its academic prowess.

• **Maharashtra (91.55%) :** As an economic powerhouse, Maharashtra's youth are aligning their aspirations with industry needs, showcasing a proactive approach towards skill development and career advancement.

• **Uttar Pradesh (89.84%) :** The most populous state in India demonstrates a robust appetite for internships, hinting at a dynamic and eager workforce ready to take on professional challenges.

•**Tamil Nadu (88.91%) :** With a strong tradition of education, Tamil Nadu's youth exhibit a commendable interest in internships, underlining the state's commitment to producing industry-ready professionals.

• **Karnataka (87.67%) :** Home to India's Silicon Valley, Karnataka's youth are keenly aware of the importance of internships in the tech-driven landscape, showcasing a forward-looking mindset.

• **Kerala (84.95%) :** The southern state, known for its emphasis on education, boasts a considerable percentage of youth eager to engage in internships, signaling a commitment to practical learning.

## What Does This Mean for Corporate Hiring Activity?

The resounding interest in internships across states bodes well for Indian corporate hiring activities in the upcoming year. The substantial pool of eager and skilled resources, spanning various disciplines and geographies, is a beacon of hope for industries seeking fresh talent. This surge in internship aspirations signifies a workforce that is not only academically sound but also ready to contribute meaningfully from day one. The youth's inclination towards internships is indicative of a proactive approach to career development, a quality that resonates positively with recruiters and hiring managers.

As we navigate the ever-evolving landscape of corporate hiring in India, the latest insights produce a dynamic shift in the demand for talent across industries. The upcoming year is poised to witness a significant surge in the overall demand for postgraduates, constituting a notable 25% of the corporate workforce. Foremost among the sectors driving this demand is the IT and services industry, where postgraduates are expected to comprise a substantial 43% of the workforce.

While the demand for freshers with Engineering or equivalent degrees (BE/B.Tech) remains steady at 49%, an intriguing development is the notable increase from 15% to 18% in the demand for freshers graduating with BA/BCA/BBA/B.Com/BSc, and other diverse degrees. This shift suggests a broader recognition of skill sets beyond traditional engineering domains, reflecting a nuanced understanding of the diverse talents required in today's multifaceted business environment.

Zooming in on specific sectors, the demand for BE/B. Tech talent takes center stage in the automotive sector, poised to constitute a commanding 89% of

engineering graduates in the workforce. Following closely is the IT sector, anticipating a growing 51% composition of engineering graduates, reaffirming the sector's insatiable appetite for technical prowess. The BFSI sector emerges as a focal point for fresher hiring, projecting a substantial 40% increase in hiring activity. This surge in demand for freshers is not confined to a particular industry, as the average hiring activity forecast for entry-level professionals across all sectors is expected to escalate by an impressive 22%.
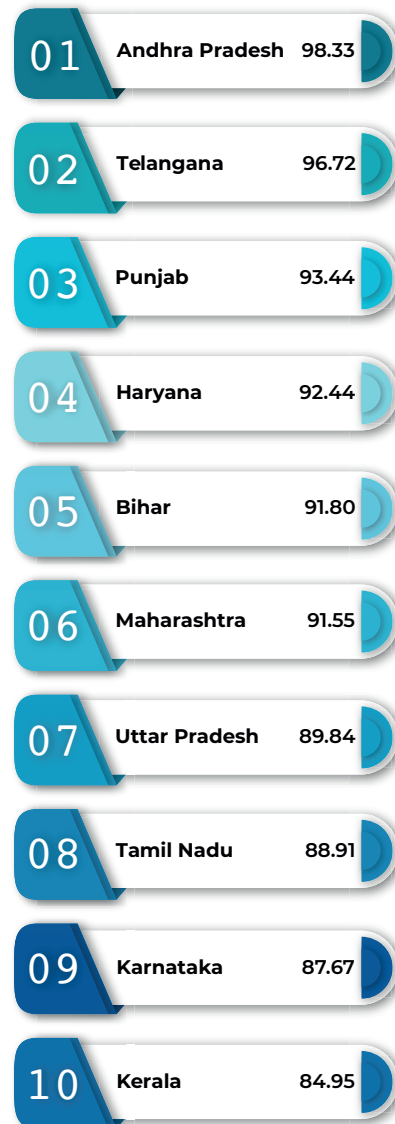
This dynamic shift observed with the results of the India Hiring Intent Survey for 2024 is a reflection of the evolving needs of industries as they navigate a rapidly changing business landscape. The heightened demand for postgraduates, especially in the IT and services sector, indicates a growing recognition of the need for advanced skills and specialized knowledge. The increased demand for freshers with diverse degrees showcases a progressive mindset among recruiters, acknowledging the value of a well-rounded skill set in fostering innovation and adaptability. Industries are increasingly realizing that a diverse talent pool, comprising both traditional engineering graduates and those with a broader educational background, contributes to a more resilient and versatile workforce. This demand can surely be met by the expectations of youth seeking internships to kick-start their careers in the coming year.

## Internship Preferences Across States

India-wide Percentage of Users who want to avail internships

**87.83%** INDIA-WIDE PERCENTAGE OF USERS WHO WANT TO AVAIL INTERNSHIPS

**Top 10 States Percentage of Users who want to avail internships**

| | State | Percentage |
|---|---|---|
| 01 | Andhra Pradesh | 98.33 |
| 02 | Telangana | 96.72 |
| 03 | Punjab | 93.44 |
| 04 | Haryana | 92.44 |
| 05 | Bihar | 91.80 |
| 06 | Maharashtra | 91.55 |
| 07 | Uttar Pradesh | 89.84 |
| 08 | Tamil Nadu | 88.91 |
| 09 | Karnataka | 87.67 |
| 10 | Kerala | 84.95 |

## Unveiling Aspirations: Youth Salary Expectations Across India

The data gathered this year reveals a diverse spectrum of salary preferences, providing insights into the financial expectations of the youth across different states and skill domains. At a nationwide level, a notable 28.85% of users express a preference for a starting salary range between 0-2 lakhs, underlining the significance of entry-level compensation in the career decisions of a substantial portion of the workforce. Additionally, 17.97% of users aim for a salary between 2-2.6 lakhs, while a majority, comprising 52.48%, express ambitions for a salary range beyond 2.6 Lacs.

Delving into the gender-specific preferences, the data highlights intriguing patterns. A mere 6.07% of male users prefer a starting salary between 2-2.6 lakhs, while a significant 26.35% aim for a higher range, emphasizing an inclination towards higher compensation. Female users, on the other hand, showcase a balanced distribution, with 11.9% and 26.11% expressing preferences for the 2-2.6 lakhs and above 2.6 lakhs salary brackets, respectively. In the states of Kerala, Maharashtra, Tamil Nadu, Karnataka, and Uttar Pradesh, there is a consistent preference for a starting salary range of 0-2 lakhs, illustrating a shared expectation for entry-level compensation. In contrast, states like Andhra Pradesh, Karnataka, Tamil Nadu, Maharashtra, and Kerala emerge as hotspots where employees prefer a salary in the 2-2.6 lakhs bracket, reflecting regional variations in economic expectations. The aspirations for higher compensation are prominently visible in states like Kerala, Maharashtra, Andhra Pradesh, Karnataka, and Tamil Nadu, where employees express a preference for a salary range beyond 2.6 lakhs. This inclination towards higher earnings aligns with the evolving economic landscape and the pursuit of financial growth among the youth.

**Fun Fact :** 75.94% of test takers have a computer at home, with 100% of candidates from Delhi owning a computer.



TRAINING  MENTORING  POTENTIAL  GOALS  EVALUATION  INTERNSHIP  DEVELOPMENT  PRODUCTIVITY
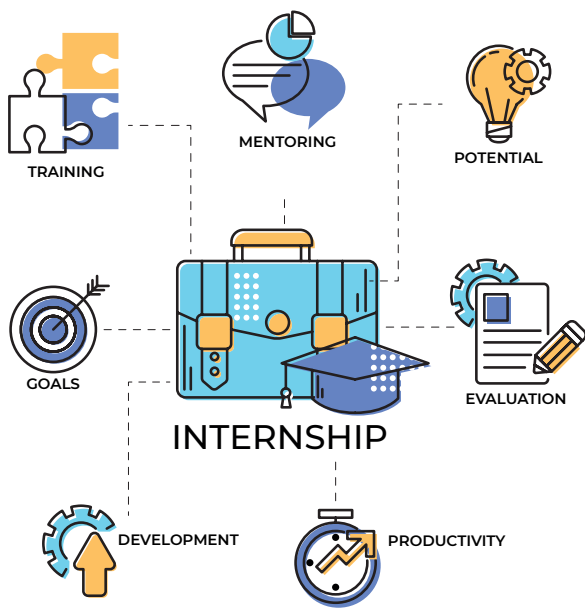
# Salary Preferences Across States

**India wide users who preferred starting Salary range between 0-2 Lacs**

**28.85%** INDIA WIDE USERS WHO PREFERRED STARTING SALARY RANGE BETWEEN 0-2 LACS

**India wide users who preferred Salary range between 2-2.6 Lacs**

**17.97%** INDIA WIDE USERS WHO PREFERRED SALARY RANGE BETWEEN 2-2.6 LACS

**India wide users who preferred Salary range between 2.6 Lacs and above**

**52.48%** INDIA WIDE USERS WHO PREFERRED SALARY RANGE BETWEEN 2.6 LACS AND ABOVE

**Top 5 states where employees preferred salary of**

### 0 to 2 Lakh
Kerala
Maharashtra
Tamil Nadu
Karnataka
Uttar Pradesh

### 2 to 2.6 Lakh
Kerala
Tamil Nadu
Maharashtra
Andhra Pradesh
Karnataka

### 2.6 Lakh and above
Kerala
Maharashtra
Andhra Pradesh
Karnataka
Tamil Nadu

## Male and Female Salary Preferences

**India wide Percentage of male users who preferred starting Salary range between 2-2.6 Lacs**

**6.07%** — INDIA WIDE PERCENTAGE OF MALE USERS WHO PREFERRED STARTING SALARY RANGE BETWEEN 2-2.6 LACS

**India wide Percentage of male users who preferred starting Salary range between 2.6 Lacs**

**26.35%** — INDIA WIDE PERCENTAGE OF MALE USERS WHO PREFERRED STARTING SALARY RANGE BETWEEN 2.6 LACS AND ABOVE

**India wide Percentage of female users who preferred starting Salary range between 2-2.6 Lacs**
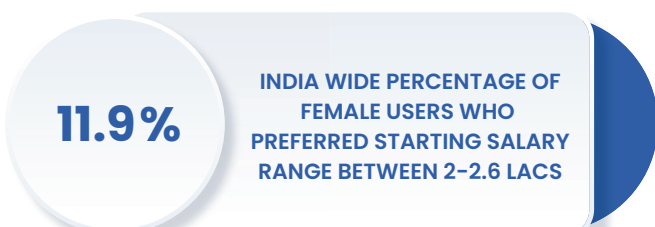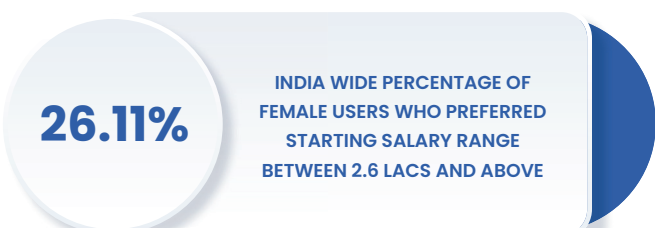
**11.9%** — INDIA WIDE PERCENTAGE OF FEMALE USERS WHO PREFERRED STARTING SALARY RANGE BETWEEN 2-2.6 LACS

**India wide Percentage of female users who preferred starting Salary range between 2.6 Lacs and above**

**26.11%** — INDIA WIDE PERCENTAGE OF FEMALE USERS WHO PREFERRED STARTING SALARY RANGE BETWEEN 2.6 LACS AND ABOVE

## India's Youth Embrace Mobility In Job-Seeking

A resounding theme emerges from the preferences of this year's aspirants—mobility and adaptability. The data showcases a significant shift in the mindset of the youth, with the majority expressing a willingness to explore opportunities across various cities, unfettered by geographical constraints.

An impressive revelation unfolds as "Any" emerges as the top preferred area of work nationwide. This signals a departure from the traditional model of job seeking confined to specific cities, as the modern workforce exhibits a keenness to traverse boundaries in pursuit of promising career avenues. As industries diversify and technology becomes increasingly pervasive, Bengaluru stands as a testament to the adaptability and resilience of India's youth, ready to embrace new horizons and contribute to the ever-evolving professional landscape.

**Key Takeaway :** Bengaluru retains the top spot as the favorite city to work among India's youth

Amidst this panorama of openness to diverse work locations, Bengaluru emerges as a magnetic hub that captivates the aspirations of both male and female test takers. The city's allure goes beyond its geographical boundaries, transcending regional affiliations. For many, Bengaluru is not merely a location; it represents a beacon of opportunities, a city where aspirations meet thriving industries. The significance of Bengaluru as a preferred destination is underlined by its consistent prominence among the top choices for male and female professionals. This city, often hailed as the Silicon Valley of India, has etched its place as a nucleus of innovation, technology, and burgeoning job opportunities. The robust IT sector, coupled with a vibrant startup ecosystem, positions Bengaluru as a magnet for those seeking dynamic, growth-oriented careers. The testament to Bengaluru's appeal is not confined to its contemporary charm; it resonates with the narrative of India's economic trajectory.

## Preferred Area to work

**India wide Top 10 Preferred area of work**

| India wide Top 10 Preferred area of work | Bangalore<br>Cochin/Kochi<br>Pune<br>Trivandrum<br>Hyderabad<br>Chennai<br>Delhi<br>Delhi/NCR<br>Gurgaon |
| --- | --- |

## Kerala Emerges As Preferred State For Youth To Work

The 'preferred state to work' data reveals intriguing insights into the preferences of male and female job seekers across India. Among male candidates, the flexibility of working in "Any" location is highly favored, showcasing the diverse career aspirations that span the nation. Bengaluru emerges as the top choice for male professionals, underlining the city's prominence as a thriving hub for career opportunities. Cochin, with its unique charm and economic prospects, captures the second spot, emphasizing its popularity among male users. In terms of preferred states for males, Kerala takes the lead, followed by dynamic states like Maharashtra, Andhra Pradesh, and Tamil Nadu. These choices align with the diverse economic landscapes and job markets present in these regions, reflecting the strategic considerations of male professionals in their career pursuits.
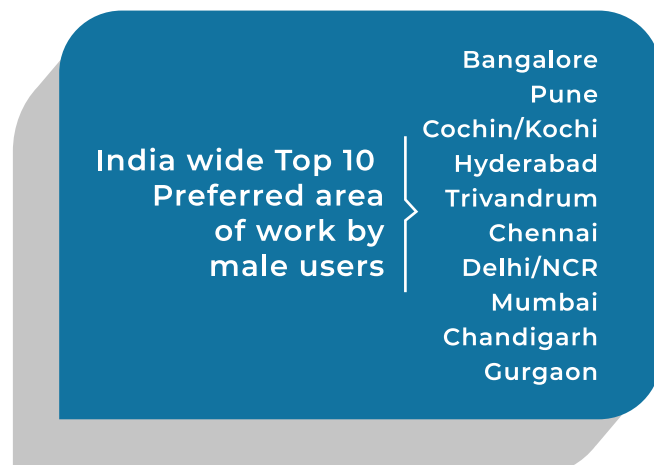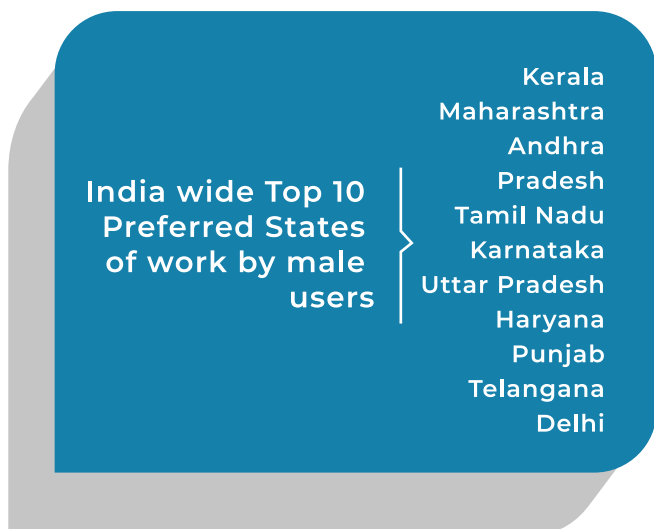
**Key Takeaway :** Kerala is the most preferred state to work for both male and female test takers, while Cochin is the most preferred city among female test takers.

closely for the female test takers' appeal, reinforcing its status as a city that attracts job-seeking women with

its vibrant opportunities. Kerala, with its enchanting landscapes and vibrant cultural significance, emerges as the preferred state for job seekers across the country, among both males and females. The state's unique blend of natural beauty and economic opportunities positions it as a beacon for those in search of fulfilling careers. Amidst the diverse cities within Kerala, Cochin stands out as the second most preferred destination among both females and males. Renowned for its bustling seaport, Cochin combines historical richness with a burgeoning modern infrastructure, making it an ideal locale for professionals seeking a harmonious blend of tradition and innovation. The allure of Kerala, coupled with the dynamic possibilities in regions like Trivandrum, Calicut and Cochin, enliven the state's status as a prime destination for those eager to embark on a journey of professional growth and personal fulfillment.

## Preferred Place to work

**India wide Top 10 Preferred area of work by male users**

| India wide Top 10 Preferred States of work by male users | Kerala<br>Maharashtra<br>Andhra Pradesh<br>Tamil Nadu<br>Karnataka<br>Uttar Pradesh<br>Haryana<br>Punjab<br>Telangana<br>Delhi |
| --- | --- |

| India wide Top 10 Preferred area of work by male users | Bangalore<br>Pune<br>Cochin/Kochi<br>Hyderabad<br>Trivandrum<br>Chennai<br>Delhi/NCR<br>Mumbai<br>Chandigarh<br>Gurgaon |
| --- | --- |

**India wide Top 10 Preferred area of work by female users**

| India wide Top 10 Preferred states of work by female users | Kerala |
| --- | --- |
| | Maharashtra |
| | Andhra |
| | Pradesh |
| | Karnataka |
| | Tamil Nadu |
| | Uttar Pradesh |
| | Haryana |
| | Rajasthan |
| | Punjab |
| | Delhi |

| India wide Top 10 Preferred Areas for work by female users | Cochin/Kochi |
| --- | --- |
| | Bangalore |
| | Trivandrum |
| | Pune |
| | Other |
| | Chennai |
| | Hyderabad |
| | Delhi |
| | Delhi/NCR |
| | Mumbai |

# State-Wise Breakdown Of Youth Employability

Top 10 States where users have scored more than 60% in WEST (along with the percentages) are explored in this section.

## Haryana

Haryana, with its strategic location and growing educational ecosystem, is making significant contributions to India's talent pool. The state exhibits strengths in education, diverse skill sets, and a balanced age-wise distribution, positioning it as an appealing destination for industries seeking skilled professionals. In the realm of education, Haryana's commitment is evident as 76.47% of test-takers from the state scored above 60% in the WNET assessment. This reflects a focus on academic excellence and an emphasis on building a knowledgeable and skilled workforce. Haryana's employability skills showcase a broad spectrum of proficiency. The state ranks high in English as a Second Language (38.82%), Numerical skills (44.78%), Critical Thinking (27.45%), and Computer Skills among BE/B.Tech. graduates. This indicates the versatility and competency of professionals in Haryana across these vital domains. A notable characteristic of Haryana's workforce is the balanced distribution across different age groups. With 92.44% of residents owning a computer at home, the state demonstrates a high level of digital literacy, essential for thriving in a technology-driven work environment.

Haryana's performance in key skills such as English as a Second Language, Numerical skills, Critical Thinking, and Computer Skills positions it as a significant player in the contemporary job market. Professionals from Haryana are equipped with the necessary skills to meet the demands of diverse industries., Haryana emerges as a promising contributor to India's talent landscape, driven by a strong educational foundation, diverse skill sets, and a digitally literate workforce. The state's proficiency in critical skills makes it an attractive destination for industries seeking versatile and well-prepared professionals.

## Maharashtra

The data from Maharashtra provides a comprehensive snapshot of the state's academic and professional landscape. In terms of educational achievements, Maharashtra boasts an impressive performance in the WNET, with a high percentage of users scoring more than 60%, standing at a remarkable 73.03%.

This indicates a strong emphasis on educational excellence and proficiency among the state's test takers. Moving beyond academic achievements, the employability skills of Maharashtra's workforce, particularly among BE/B.Tech. graduates are noteworthy. The state shows a substantial percentage of employable resources in key educational domains such as Information Technology (IT) at 68.44%, Computer Science (CS) at 66.00%, and other engineering disciplines like Electronics and Communication Engineering, Electrical Engineering, Mechanical Engineering, and Civil Engineering, all contributing significantly to the state's skilled workforce.

The preference for specific skills is also evident, with Maharashtra featuring in the top states with available skills in English as a Second Language, Numerical skills, Critical Thinking, and Computer Skills. This diversified skill set indicates a well-rounded talent pool in the state, covering essential competencies needed in various sectors. Moreover, Maharashtra is a leader in terms of preferred salary ranges, with test takers from the state expressing interest in various salary brackets. The state ranks high in the desire for starting salaries ranging from 0-2 Lacs, 2-2.6 lakhs, and beyond 2.6 lakhs, showcasing a diverse range of expectations among the workforce. Looking at the age-wise distribution, Maharashtra exhibits a balanced distribution of employable resources across age groups, indicating a sustained focus on skill development and education for individuals in the 18-29 age range. Maharashtra emerges as a key player in the Indian job market, contributing significantly to the talent pool with well-educated, skilled individuals across various domains, making it an attractive destination for industries seeking diverse and proficient professionals.

## Andhra Pradesh

Andhra Pradesh stands out prominently in the analyzed data, reflecting a robust educational and employability landscape. In the realm of academic performance, Andhra Pradesh showcases an impressive performance in the WNET, with over 72.38% of test takers scoring more than 60%. This signifies a strong commitment to education and proficiency among individuals in the state. The employability skills of Andhra Pradesh's workforce, particularly among BE/B.Tech. graduates are noteworthy. The state exhibits a high percentage of employable resources in key educational domains, including Information Technology (IT) at 68.44%, Computer Science (CS) at 66.00%, and various engineering disciplines like Electronics and Communication Engineering, Electrical Engineering,

Mechanical Engineering, and Civil Engineering. This indicates a well-equipped workforce in engineering and technology-related fields.

Andhra Pradesh is also a frontrunner in terms of preferred salary ranges, with test takers expressing varied expectations. The state ranks high in the desire for starting salaries ranging from 0-2 Lacs, 2-2.6 Lakhs, and above 2.6 Lakhs, reflecting the diverse aspirations and expectations of the workforce. Looking at the age-wise distribution, Andhra Pradesh demonstrates a balanced representation of employable resources across age groups, indicating a sustained focus on skill development and education for individuals in the 18-29 age range. Moreover, Andhra Pradesh excels in terms of specific skills, featuring in the top states with available skills in English as a Second Language, Numerical skills, Critical Thinking, and Computer Skills. This diversified skill set positions the state's workforce as versatile and well-prepared for the demands of various industries. Andhra Pradesh emerges as a pivotal contributor to India's talent reservoir, showcasing a robust commitment to education, a diverse array of skill sets, and a well-distributed demographic profile. These factors collectively position the state as an appealing destination for companies in search of adept professionals across all major age groups.

## Uttar Pradesh

Uttar Pradesh, with its substantial population, plays a pivotal role in India's educational and employment landscape, as evident from the analyzed data. In the WNET, Uttar Pradesh showcases a commendable performance, with 69.92% of test takers scoring more than 60%. This reflects a positive trend in the state's educational outcomes, emphasizing a significant pool of individuals with a good grasp of various subjects. The employability scenario in Uttar Pradesh is notable, especially among BE/B.Tech. graduates. The state exhibits a high percentage of employable resources in critical domains such as Information Technology (IT) at 68.44%, Computer Science (CS) at 66.00%, and other engineering disciplines, including Electronics and Communication Engineering, Electrical Engineering, Mechanical Engineering, and Civil Engineering. This demonstrates a strong foundation in engineering and technology-related fields.

When it comes to preferred salary ranges, Uttar Pradesh presents diverse expectations among test takers. The state ranks prominently in the desire for starting salaries ranging from 0-2 Lacs, 2-2.6 Lakhs, and above 2.6 Lakhs, indicating a spectrum of salary expectations among the workforce. Analyzing the age-wise distribution, Uttar Pradesh reveals a well-distributed representation of employable resources across age groups, showcasing a balanced emphasis on skill development and education for individuals in the 18-29 age range. Uttar Pradesh also exhibits strength in specific skills, featuring in the top states with available skills in English as a Second Language, Numerical skills, Critical Thinking, and Computer Skills. This well-rounded skill profile positions the state's workforce as versatile and well-prepared for the demands of diverse industries. Uttar Pradesh remains a significant contributor to India's talent pool, with a strong emphasis on education, diverse skill sets, and a balanced age-wise distribution, making it an attractive destination for industries looking to hire youth talent in 2024.

## Kerala

Kerala, known for its high literacy rates and emphasis on education, reflects distinctive trends in the analyzed data. In the WNET, Kerala showcases a robust performance, with 68.97% of test takers scoring more than 60%. This highlights a strong academic foundation and a considerable number of individuals with commendable knowledge across educational domains. The employability landscape in Kerala is particularly noteworthy, especially among BE/B.Tech. graduates. The state demonstrates a significant percentage of employable resources in critical domains such as Information Technology (IT) at 68.44%, Computer Science (CS) at 66.00%, and other engineering disciplines, including Electronics and Communication Engineering, Electrical Engineering, Mechanical Engineering, and Civil Engineering. This suggests a strong focus on engineering and technology-related fields. Examining the preferred salary ranges, Kerala exhibits diverse expectations among test takers. The state ranks prominently in the desire for starting salaries ranging from 0-2 Lacs, 2-2.6 Lakhs, and above 2.6 Lakhs, reflecting a varied spectrum of salary expectations within the workforce.

Analyzing the age-wise distribution, Kerala displays a well-distributed representation of employable resources across age groups, indicating a balanced emphasis on skill development and education for individuals in the 18-29 age range. Kerala also stands out in terms of skills, featuring in the top states with available skills in English as a Second Language, Numerical skills, Critical Thinking, and Computer Skills. This diverse skill profile positions the state's workforce as adaptable and well-equipped for the demands of various industries. Kerala has grown into a significant

contributor to India's talent pool, boasting strong academic performance, diverse skill sets, and a balanced age-wise distribution. The state's emphasis on education and technology-related fields makes it an attractive hub for industries seeking skilled and versatile professionals in various disciplines. Kerala also emerges as the most preferred state for candidates to work in this year's WNET responses.

## Telangana

Telangana, a state at the forefront of India's technological landscape, presents a compelling narrative based on the analyzed data. Starting with academic performance, Telangana stands out prominently in the WNET, with 67.79% of test takers scoring more than 60%. This underscores a robust educational foundation and a substantial number of individuals excelling in various educational domains. Telangana's employability scenario is particularly noteworthy, with a high percentage of BE/B.Tech. graduates showcasing proficiency in critical domains. Notably, the state boasts 68.75% employable resources in English as a Second Language, 78.68% in Numerical skills, 37.70% in Critical Thinking, and features among the top states with available Computer Skills. This suggests a strong emphasis on technological and quantitative competencies among the workforce.

In terms of preferred salary ranges, Telangana exhibits diverse expectations among test takers, reflecting a spectrum of salary preferences. This diversity in salary expectations indicates the varied priorities and financial aspirations within the state's workforce. Analyzing the age-wise distribution, Telangana showcases a robust representation across age groups, particularly in the 18-21 and 22-25 age brackets. This distribution signifies a consistent focus on skill development and education among the younger demographic, aligning with the demands of the evolving job market.

Telangana's importance in the technological landscape is further emphasized by the widespread availability of computer skills. The state features prominently in the list of top states with available skills in English as a Second Language, Numerical skills, Critical Thinking, and Computer Skills, indicating a well-rounded and tech-savvy workforce. Telangana is a key player in India's talent ecosystem, driven by strong academic performance, a focus on technological skills, and a diverse workforce with varying salary expectations. The state's emphasis on technology and proficiency in critical skills positions it as a hub for industries seeking

adept and adaptable professionals, especially in IT, finance, engineering, and technical career choices. It is no secret that Hyderabad city in Telangana has emerged as a prime destination for foreign investments and job opportunities in India.

## Karnataka

Karnataka, a state renowned for its dynamic IT industry and educational institutions, showcases distinctive trends in the analyzed data. Academically, Karnataka stands out with a substantial percentage of test takers scoring more than 60% in the WNET – 63.33%. This reflects a robust educational landscape and a considerable number of individuals excelling in various educational domains. In terms of employability, Karnataka's workforce demonstrates a strong command over critical skills. The state ranks prominently in the top 10 for English as a Second Language, Numerical skills, Critical Thinking, and Computer Skills among BE/B.Tech. graduates. This suggests a well-rounded set of competencies, particularly in areas crucial for today's job market. When considering salary preferences, Karnataka exhibits a diverse range of expectations among test takers, reflecting varied priorities and financial goals within the state's workforce. This diversity is a positive indicator of the dynamic and evolving nature of the job market in Karnataka.

Examining the age-wise distribution, Karnataka presents a robust representation across age groups, particularly in the 18-21 and 22-25 age brackets. This indicates a consistent focus on skill development and education among the younger demographic, aligning with the demands of the evolving job market. The state's prowess in technology is further underscored by the widespread availability of computer skills. Karnataka features prominently in the list of top states with available skills in English as a Second Language, Numerical skills, Critical Thinking, and Computer Skills, portraying a tech-savvy and adaptable workforce. In summary, Karnataka remains a significant player in India's talent landscape, driven by strong academic performance, a focus on critical skills, and a diverse workforce migrating from all parts of India to the Silicon Valley of India, Bengaluru city. The state's emphasis on technology and proficiency in essential skills positions it as a prime destination for industries seeking candidates to fit the agenda of 2024's corporate hiring activities in the state.

## Punjab

Punjab emerges as a significant contributor to India's talent reservoir, underscored by notable data points that highlight the state's commitment to education, diverse skill proficiencies, and balanced age-wise distribution. These factors collectively position Punjab as a sought-after destination for industries in search of adept and well-rounded professionals. The state's prowess in education is evident from the impressive performance in the WNET, where a substantial percentage of test-takers, 61.41%, scored above 60%. This reflects Punjab's dedication to fostering academic excellence and providing a solid grounding for its workforce. In terms of employability skills, Punjab's workforce showcases versatility, particularly in critical domains. The state secures a noteworthy position in the top 10 for English as a Second Language (34.43%), Numerical skills (41.57%), Critical Thinking (22.81%), and Computer Skills among BE/B.Tech. graduates. This data underscores the proficiency of Punjab's professionals in these vital domains.

A key strength lies in the balanced age distribution of Punjab's workforce, with 29.98% of available male employable resources and 34.43% of female employable resources. This balanced distribution indicates a sustained emphasis on skill development and education across age groups, aligning with the evolving demands of the job market. Punjab's technological acumen is apparent in its impressive performance in skills related to English as a Second Language, Numerical skills, Critical Thinking, and Computer Skills. The state's professionals exhibit proficiency in these crucial areas, showcasing adaptability and a keen understanding of contemporary industry requirements. Punjab stands out as a notable player in India's talent landscape, supported by data points that emphasize its commitment to education, diverse skill sets, and a balanced demographic distribution. The state's appeal lies in the versatility of its professionals, making it an attractive hub for industries across India looking to land talented young professionals for the year 2024.

## Tamil Nadu

Tamil Nadu emerges as a powerhouse in India's talent landscape, characterized by a strong commitment to education, a diverse range of skill sets, and a well-distributed workforce across age groups. These factors position Tamil Nadu as a highly desirable destination for industries seeking proficient and adaptable professionals. The state's dedication to education is evident in the WNET performance, where a significant percentage of test-takers, 52.91%, scored above 60%. This underscores Tamil Nadu's emphasis on academic excellence and the cultivation of a knowledgeable and skilled workforce. Tamil Nadu's employability skills showcase versatility across various domains. The state secures a prominent position in the top 10 for English as a Second Language (24.55%), Numerical skills (59.09%), Critical Thinking (25.00%), and Computer Skills among BE/B.Tech. graduates. This reflects the proficiency of Tamil Nadu's professionals in these crucial areas.

A notable strength lies in the balanced age distribution of Tamil Nadu's workforce, with 41.36% of available male employable resources and 24.55% of female employable resources. This balanced representation across age groups suggests sustained efforts in skill development and education, aligning with the dynamic needs of the job market. Tamil Nadu's technological prowess is highlighted by its impressive performance in skills related to English as a Second Language, Numerical skills, Critical Thinking, and Computer Skills. The state's professionals demonstrate proficiency in these vital areas, showcasing adaptability and a keen understanding of contemporary industry requirements. In conclusion, Tamil Nadu stands out as a major player in India's talent landscape, backed by data points that highlight its commitment to education, diverse skill sets, and a well-distributed workforce.

## Delhi

Delhi, the national capital territory, emerges as a dynamic force in India's talent landscape, characterized by a robust educational foundation, diverse skill sets, and a workforce that spans various age groups. This positions Delhi as a pivotal destination for industries in search of adept and adaptable professionals. Delhi's commitment to education is evident in the performance of its test-takers, with 59.09% scoring above 60% in the WNET assessment. This underscores the region's focus on academic excellence and its efforts to foster a knowledgeable and skilled workforce. In terms of employability skills, Delhi showcases versatility across various domains. The city features prominently in the top 10 for English as a Second Language (36.36%), Numerical skills (61.71%), Critical Thinking (31.81%), and Computer Skills among BE/B.Tech. graduates. This indicates the proficiency of Delhi's professionals in these crucial areas. One of Delhi's notable strengths is its diverse and well-distributed workforce across age groups.

With 100% computer ownership at home, the city's residents demonstrate a high level of tech-savviness, reflecting their readiness for the demands of the modern workplace. Delhi's strong performance in skills related to English as a Second Language, Numerical skills, Critical Thinking, and Computer Skills underscores its technological prowess. Professionals from Delhi showcase adaptability and a comprehensive understanding of contemporary industry requirements. In conclusion, Delhi remains a key player in India's talent landscape, boasting a solid educational foundation, diverse skill sets, and a tech-savvy workforce. The city's appeal lies in its proficiency across critical skills, making it an attractive region for industries seeking problem-solvers and experts at numerical.

## States with Impressive Record of Future Skills and General Knowledge

The data provided reveals interesting insights into the future skills and general knowledge levels across different states in India, as per this year's Indian State Ranking for specific skills by ISR's WNET employability analysis. Let's delve into the findings for both categories and discuss their significance.

### 1. Category: Future Skills :

• **Andhra Pradesh Leads in Future Skills :** With an impressive score of 76.15%, Andhra Pradesh emerges as the top state in terms of future skills. This suggests a strong emphasis on preparing the workforce for the evolving demands of the future, including technological advancements and industry-specific requirements.

• **Emerging Southern States :** Noticeably, states from the southern part of India, such as Karnataka (69.83%) and Maharashtra (68.81%), also exhibit high scores in future skills. This could be attributed to a robust education system, proactive skill development initiatives, and a thriving IT industry in these regions.

• **Kerala's Balanced Approach:** Kerala, leading in both future skills (43.89%) and general knowledge (41.98%), showcases a balanced approach towards education. This suggests a holistic curriculum that not only imparts knowledge but also hones skills that are crucial for the future job market.

### 2. Category: General Knowledge :

• **Maharashtra Takes the Leadra Pradesh Leads in Future Skills :** Maharashtra emerges as the frontrunner in general knowledge with an impressive score of 72.69%. This indicates a strong academic foundation and a population that is well-versed in various domains of knowledge. The presence of educational hubs like Mumbai and Pune likely contributes to this high ranking.

• **Southern States Lag in General Knowledge :** Interestingly, while southern states like Karnataka and Tamil Nadu excel in future skills, they show lower scores in general knowledge (67.33% and 41.09%, respectively). This highlights a potential gap in traditional knowledge domains, which might need attention for a more comprehensive educational approach.

• **Uttar Pradesh's Noteworthy Performance :** Uttar Pradesh demonstrates strength in both future skills (65.63%) and general knowledge (68.36%). This suggests a well-rounded education system that focuses on both practical skills and theoretical understanding, positioning the state as a potential hub for versatile and knowledgeable professionals.

## Significance of this year's WNET state-wise skills findings:

The state-wise skill report findings shed light on crucial aspects of the education landscape in India, emphasizing the pivotal role of holistic development, regional disparities, and policy implications. The significance of these findings extends beyond the immediate rankings, offering valuable insights into the future preparedness of India's youth and the potential societal impact.
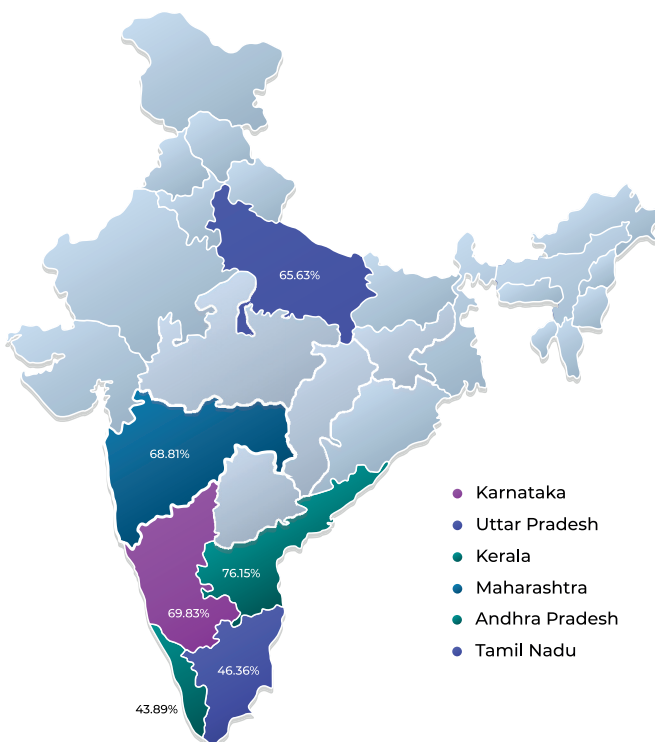
• **Holistic Development is Key :** The ISR findings strongly advocate for a holistic approach to education, a sentiment echoed by the exemplary performance of states like Andhra Pradesh and Maharashtra in both future skills and general knowledge categories. This underscores the need for a curriculum that transcends the traditional boundaries of theoretical learning, integrating practical skills that align with the demands of the ever-evolving job market. A balanced education system that nurtures not only academic proficiency but also practical acumen equips individuals to navigate the complexities of the professional world.

• **Regional Disparities :** The regional variations highlighted in the ISR rankings illuminate the diverse

educational landscapes across states. Policymakers can leverage this information to implement targeted interventions in specific regions, addressing the unique challenges each area faces. By tailoring educational initiatives to meet the specific needs of different states, authorities can work towards reducing disparities and ensuring that students across the nation have equal access to quality education. This approach promotes inclusivity and lays the foundation for a more uniform and robust education system.

• **Policy Implications :** The ISR data serves as a valuable compass for policymakers, guiding them in formulating strategies that can enhance the overall educational ecosystem. Understanding the strengths and weaknesses of each state allows authorities to craft targeted policies that address specific areas requiring improvement. This data-driven policymaking approach contributes to the creation of a more responsive and adaptive education system, better aligned with the demands of the contemporary world. It sets the stage for initiatives that go beyond short-term fixes, fostering a sustainable and continuously improving educational infrastructure.
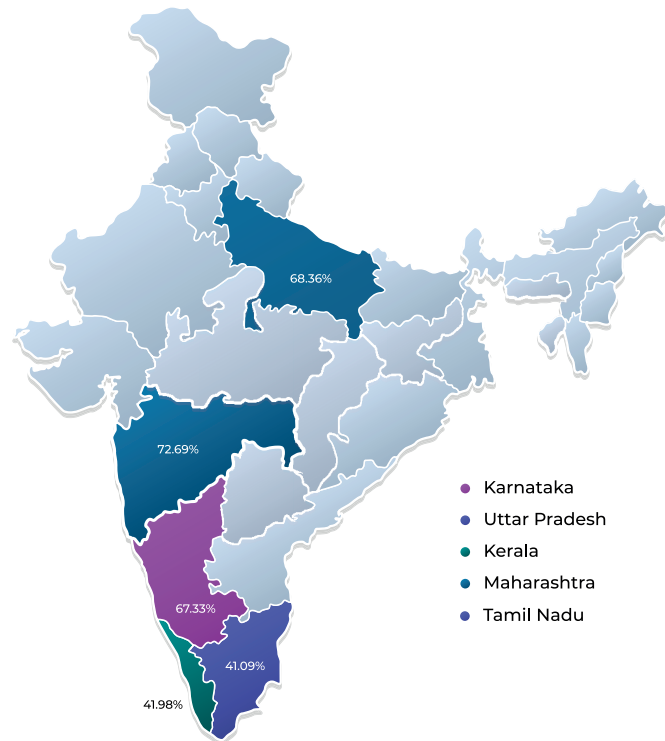
# General Knowdedge

**Top 5 States**



- Karnataka
- Uttar Pradesh
- Kerala
- Maharashtra
- Tamil Nadu

# Future Skills

**Top 5 States**



- Karnataka
- Uttar Pradesh
- Kerala
- Maharashtra
- Andhra Pradesh
- Tamil Nadu

# Top Cities on The Radar of Corporates in 2024

The data on cities where users have scored more than 60% in the WNET test reveals a compelling narrative about the evolving landscape of employability. While traditional tech hubs like Bengaluru, Delhi, Mumbai, Hyderabad, and Chennai continue to play a crucial role, the emergence of cities like Pune, and Lucknow as centers of highly employable talent is noteworthy. These cities have demonstrated significant growth, with Pune leading the pack at an impressive 75%, showcasing a remarkable increase in employability. Bengaluru, a perennial hub, continues to maintain a high score at 72.46%, reaffirming its status as a tech powerhouse. The data also sheds light on the changing dynamics of employability, with cities like Trivandrum, Guntur, and Chandigarh making substantial strides. Trivandrum, in particular, stands out with a notable 55.24% score, indicating a growing pool of highly skilled individuals in various regions of Kerala migrating to the state capital. This trend challenges the conventional notion that employability is confined to major urban centers, signifying a broader dispersion of talent across the country.

In the context of technology-driven transformation, the increased employability in cities beyond the usual

suspects aligns with the evolving demands of the job market. As industries embrace digitalization and technological advancements, the demand for skilled professionals is growing across diverse geographical locations and so is the talent landscape. The WNET data reinforces the notion that cities, irrespective of their size or historical prominence, are becoming key contributors to India's talent pool and the development of new age skills and awareness among the youth.

## Academic Outlook : The Impact of AI on Society

India stands at the forefront of leveraging AI to reshape its education system, invigorate its economy, and enhance societal well-being. As the nation navigates this transformative era, a careful balance between technological innovation and ethical responsibility remains essential for ensuring that AI becomes a force for inclusive and sustainable progress. The impact of Artificial Intelligence (AI) on India's education system, economy, and society is increasingly profound, ushering in a transformative era with implications across various sectors.

## Education :

India's National Education Policy 2020 marks a pivotal step, prioritizing the integration of AI into the curriculum across all levels. The focus extends beyond basic understanding to nurturing AI literacy, computational thinking, and problem-solving skills among students. Complementing this, the AI4K12 Initiative, launched by the Ministry of Education, ambitiously aims to introduce AI education to 10 million school children by 2023. Concurrently, startups like BYJU'S and Toppr are driving innovation with AI-powered learning platforms, personalizing education and providing adaptive learning experiences. The government's substantial investments in AI education, including funding for AI labs, research projects, and skill development programs, underscore the commitment to shaping a technologically adept generation.

## Economy :

India's AI industry is on a trajectory of exponential growth, estimated to reach USD 28.8 billion by 2025 with a remarkable CAGR of 45%. This surge is driven by increasing demand for AI solutions, spanning diverse sectors such as agriculture, healthcare, and finance. The expansion of the AI landscape is not only creating a demand for technical expertise but is poised to

generate 2 million new jobs in India by 2025, particularly in areas like AI development, data science, and machine learning. The anticipated boost to India's GDP by 15% by 2035 further underscores AI's role in enhancing efficiency and productivity across sectors. Government initiatives, such as "Make in India" and "Digital India," are strategically designed to attract foreign direct investment (FDI) in AI and bolster digital infrastructure, laying the foundation for a robust AI-driven economy.

## Society :

AI is ushering in transformative changes in societal domains, particularly in healthcare, agriculture, financial inclusion, and social welfare. In healthcare, AI is facilitating the development of advanced diagnostic tools, personalized patient care, and improved access in rural areas. Agriculture benefits from AI's ability to optimize crop yields, predict weather patterns, and connect farmers to markets, fostering sustainable practices. Financial inclusion sees AI-powered services extending access to credit and financial products to underserved communities. Furthermore, AI is harnessed for social welfare programs, identifying vulnerable populations and enabling targeted assistance.

However, as with any transformative technology, ethical concerns loom large. The potential negative impacts of AI, such as job displacement, bias, and privacy violations, have become subjects of intense scrutiny. Acknowledging these concerns, the Indian government is actively committed to developing responsible AI guidelines and regulations, ensuring that the benefits of AI are balanced with ethical considerations.

## The Evolving Landscape of AI Education in Academia

Artificial Intelligence (AI) has emerged as a transformative force, reshaping the educational landscape within academia. The evolving outlook of academia on the impact of AI reflects a growing awareness of the unique challenges and opportunities presented by this rapidly advancing field. By embracing tailored teaching methods, fostering collaboration with industry, and cultivating a mindset of coexistence between AI and human expertise, academia is poised to play a pivotal role in preparing future generations for the transformative influence of AI in diverse sectors of society. As these initiatives unfold, academia stands as a crucial driver in shaping a future where AI is seamlessly integrated, contributing to the betterment of industries and society at large.

Recognizing its dynamic nature, academia is undergoing a profound shift in its approach to AI education, acknowledging the need for specialized teaching methods, curriculum agility, and strategic collaborations with industry experts.

## • Teaching AI Differently :

The acknowledgment that AI is not a monolithic entity but a diverse landscape with varied applications has prompted a departure from traditional teaching methods. Within the academic community, there is a growing recognition of three distinct categories of learners:

**1. AI Applicants :** Individuals focusing on the practical application of AI solutions in specific domains such as agriculture or healthcare. Their educational needs demand a curriculum tailored to understanding the practical deployment of AI technologies.

**2. AI Technicians :** This category encompasses professionals like programmers and data scientists who are at the forefront of coding and building AI models. Their educational journey requires a deep dive into the technical aspects of AI development.

**3. AI Deployers :** Often referred to as the plumbers of AI, these individuals specialize in the mass deployment of AI solutions across various industries. Their educational path necessitates a strategic curriculum focused on implementation and scaling.

## • Industry-Academia Collaboration :

To bridge the gap between academia and industry, fostering a symbiotic relationship is deemed imperative. Active engagement with industry experts is facilitated through initiatives such as sponsored internships and collaborative research projects. These initiatives provide students with practical exposure, enriching their understanding of AI applications and deployment strategies.

The synergy between academia and industry not only prepares students for real-world challenges but also ensures that academic research remains relevant and impactful. This collaborative spirit serves as a catalyst for innovation, with academia contributing theoretical insights and industry providing practical applications.

## • Curriculum Agility :

In the swiftly evolving landscape of AI technologies, curriculum agility is imperative for educational institutions.

The ability to adapt and update course content regularly ensures that students are equipped with the most current knowledge and skills needed to navigate the dynamic AI landscape upon graduation. This adaptability is crucial for preparing students for the real-world challenges they will encounter in AI-related professions.

## • AI as an Aid, Not a Replacement :

A prevailing sentiment within academia is the recognition of AI as a complement to human capabilities rather than a replacement. While AI is poised to enhance efficiency and efficacy in various fields, there is a strong emphasis on the fact that specialized tasks will continue to require human expertise. In healthcare, for example, AI may optimize routine tasks, allowing healthcare professionals to redirect their focus towards more complex aspects of patient care, emphasizing the synergy between AI and human ingenuity.

## • Realizing Impact through Deployment:

The true impact of AI in academia is anticipated to materialize when large-scale deployments occur. AI's potential to enhance efficiency and effectiveness across diverse domains, from agriculture to healthcare, will be fully realized when integrated on a broader scale. Achieving this transition requires a concerted effort from academia, industry, and policymakers to create an environment conducive to AI adoption. Through collaborative initiatives, academia can contribute significantly to the successful deployment of AI technologies, bringing about tangible societal benefits.



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# ACADEMIA SPEAKS

**Rajkumar Devkar**

Training & Placement Officer

VIVA Institutions, Mumbai, Maharashtra, India

Whenever I start my first class with my final year students, "The India Skills Report" is the first thing I make them learn. The India Skills Report is an annual report that provides insights into the state of employability and skills of the Indian workforce. It is a collaborative effort between various organizations and institutions and typically includes data on the skills and employability of graduates and job seekers in India. The "Wheebox" is helping these new talents to understand their expertise and help them add wings to their career journey. The India Skills Report plays a significant role in addressing the skills and employability challenges in India by providing valuable information and insights. It helps in the development of a more skilled and job-ready workforce, which, in turn, contributes to reducing unemployment and fostering economic growth. I am expressing gratitude to all the institutions that are contributing to ISR for their extensive research and reports that have been valuable reference.

As we stand on the brink of a technology-driven revolution, the India Skills Report is a crucial resource for our evolving workforce landscape. In a world profoundly impacted by Artificial Intelligence (AI) and automation, understanding the changing dynamics of work, skill development, and mobility is very important. The India Skills Report (ISR) provides valuable insights, aligning with the government's skilling initiatives and educational reforms. As we strive to equip our graduates with the skills they need to thrive in this new era, the ISR's comprehensive, research-based approach is valuable. It not only aids universities and colleges but also informs policymakers, industries, and higher education institutions, helping bridge the demand and supply gap in the job market. I commend the Wheebox team and their partners for their contribution to the future of India's workforce and look forward to the 11th edition's release at the CII Global Skills Summit in December 2023.

**Rev. Dr  G. Vazhan Arasu**

Principal

St. Aloysius' College Autonomous

Jabalpur, Madhya Pradesh

Latest developments of Science and Technology in higher educational Institutes equipped with innovative research need the guidelines of National Education policy 2020. Path-breaking research needs to be implemented for the industries working on Natural resources exploration, exploitation, and management for sustainable development. The use of Satellite data-based modeling for Water resources; Biodiversity, Mineral Exploration sectors, and early warning for Natural Hazards are required for the development of the country in a holistic way. Wheebox is instrumental in achieving sustenance in the Indian economy through its program. I congratulate them for the release ceremony of ISR 2024.

**Professor Saumitra Mukherjee**

School of Environmental Sciences, Jawaharlal Nehru University, New Delhi

**Prof. (Dr.) Shiv Shankar Shukla**
Head, Department of Pharmaceutical Quality Assurance, Columbia Institute of Pharmacy, Raipur (C.G.)

❝❝ The India Skill Report 2024 on the theme Impact of AI on the Future of Work, Skilling & Mobility reveals improvement in overall employability among youngsters. The use of AI will empower India's youth by offering the necessary skills and training to increase their chances of getting jobs in various sectors. This also boosts an individual's productivity and knowledge.

Heartiest congratulations to the entire team of Wheebox for launching the 11th Edition of India Skills Report 2024. India will definitely become a hub of Talent, Skill, and Knowledge for the upcoming generation through the use of AI technology. ❝❝

❝❝ India has made significant progress in skilling its workforce over the past decade, with the employability of young individuals increasing to 50.3% in 2023. The report also highlights the growing demand for skills in AI, ML, and other cutting-edge technologies. To prepare the workforce for the future of work, the report recommends investing in skilling and re-skilling programs, promoting STEM education, and creating an enabling environment for innovation and entrepreneurship. The India Skills Report 2024 is a valuable resource for policymakers, business leaders, and educators to guide India's skilling and employment policies in the years to come. ❝❝



**Yogesh Satishchandra Baheti**
Founder, Destiny Planners



**Dr. C K Manjunath**
Professor and Head Training and Placement
Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal, Udupi and Consultant New Environment and Energy Research (NEER), Greater Noida

❝❝ AI is a transformative force in the future of work, skilling, and mobility while it offers numerous benefits in terms of automation, efficiency, and personalization. It also presents challenges in terms of job displacement and inequality. Preparing the workforce for this future requires a focus on adaptable skills, lifelong learning, and responsible AI implementation to ensure that AI benefits society as a whole. The impact of Artificial Intelligence (AI) on these areas is profound and multifaceted. AI technologies are transforming the way we work, requiring individuals and organizations to adapt and evolve to remain competitive.

AI's influence in these areas:
1. Re-skilling and Up-skilling
2. Personalization of Learning
3. Collaboration with AI

The India Skills Report is a valuable resource for policymakers, educators, employers, and job seekers. It helps in better understanding the skills and employability landscape in the country and plays a role in guiding the efforts to bridge the skills gap and improve employment prospects for Indian youth. It is a collaborative effort between various organizations and stakeholders, including government agencies, industry associations, educational institutions, and consulting firms. The report typically covers a wide range of topics related to skills, employment, and education in India. ❝❝

I am truly impressed by the significant impact the India Skills Report has made over the past decade. Its insightful analysis and thought-provoking recommendations have been instrumental in shaping India's skilling landscape. The focus on the impact of AI on the future of work, skilling, and mobility in the 11th edition is timely and crucial. As a testament to its credibility, the collaboration with esteemed partners like AICTE, AIU, CII, and Google speaks volumes about its influence. I wholeheartedly endorse the India Skills Report for its unwavering commitment to driving excellence in skill development and policy formulation, making it an invaluable resource for academia, industry, and policymakers alike.

**Dr. Ati Priye**
Director Planning and Development,
Advisor to Vice Chancellor,
CT University

The interplay of technology in both Skill and Entrepreneurship Development sectors is well documented. In particular, artificial intelligence is going to have a tremendous impact on the education sector and it will alter the future of work and the mobility of our graduates across the globe. In this context, the efforts of Wheebox and its strategic partners AICTE, AIU, CII, and Google to roll out 11th edition of India Skills Report 2024 is highly commendable.

**Prof. Dr. Lidwin Dias**
Principal, College of Social Work (Autonomous)
Nirmala Niketan, Mumbai

**Dr Umesha K,**
Professor &HoD
Department of Electronics and Communication Engineering
Jawaharlal College of Engineering and Technology
Lakkidi, Mangalam P.O, Palakkad Dist, Kerala

Since its establishment, the India Skills Report has thrived on an assortment of innovative platforms. I wish to be a part of the marathon Yathra kind of approach to reach all domain-specific and impact-based life sciences, science, and technology-driven community development activities, starting with traditional cart mobility to spacecraft mobility. I'm an innovator, accelerator, and mentor of all technology-related innovations.

Working with Wheelbox has been fantastic in the past, present, and future; it has revealed the wisdom in the robust, democratic innovation and start-up environment, which is incredibly diverse.

Any organization that aims to significantly alter how people view technology, sustainability, economic viability, and adaptability should go above and beyond to establish a 360-degree rotation that will have a lasting influence on all living things, including our present and future generations.

It gives me great pleasure to announce that the 11th edition of the India Skills Report 2024, entitled Wheebox Innovation Yathra, on the "Impact of AI on the Future of Work, Skilling, and Mobility," will be launched at the CII Global Skills Summit in December 2023 with tremendous success.

I hope it develops into a widely acknowledged Yathra that can be found everywhere in the world.
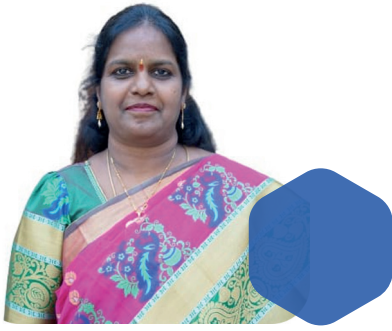
The India Skills Report offers a comprehensive overview of data and delves into specific areas where youth can focus, guided by insights from distinguished speakers. Wheebox is instrumental in addressing numerous challenges and fostering skill sustainability. It serves as a valuable platform for acquiring knowledge, bridging skills gaps, and promoting self-development. Skill development also plays a pivotal role in nurturing an ecosystem among the youth, leading to enhanced self-sustainability.

The impact of artificial intelligence (AI) on the future of work, skilling, and mobility is profound and multifaceted. AI is reshaping industries by automating routine tasks, which can lead to the displacement of certain jobs. However, it also creates new opportunities as it demands a different skill set. The workforce of the future must adapt and upskill to stay relevant in an AI-driven world. Skilling and reskilling become imperative as AI continues to evolve. Mobility in work is also affected, with remote work and gig economy jobs becoming more prevalent. AI plays a crucial role in enabling remote collaboration and managing tasks. Furthermore, it can optimize talent mobility by matching skills with job opportunities more efficiently. However, concerns about job security and ethical AI use need to be addressed. In summary, AI is transforming the nature of work, making skilling and reskilling essential for career longevity, and altering the landscape of mobility by creating opportunities and challenges that must be carefully navigated.

**Dr. A. N. P. P. Anantha Lakshmi**
Vice-President and founder of Techno Innovation & Incubation Center In charge for Centre for Innovation & Entrepreneurship St. Joseph's Degree & PG College, Hyderabad

Wishes and hearty congratulations to Wheebox for the new edition of the India Skills Report 2024 This will be a wonderful platform for the young Graduates and job seekers. Wheebox advances the nation's talent pool through an in-depth analysis of current trends. Wheebox BARO career interest test helps the candidates to identify interest areas in various domains, and career options that can help them make well-informed decisions regarding their career.

**Dr. V. SIVASUBRAMANIAN,**
Professor and Former Head Department of Chemical Engineering National Institute of Technology Calicut, Kozhikode, Kerala

The India Skills Report by Wheebox provides invaluable insights into the evolving landscape of skills and employment in our country. It's an essential resource for policymakers, educators, and employers looking to make informed decisions and bridge the skills gap effectively. I highly recommend the India Skills Report to anyone interested in understanding the skills and employment scenario in India. Its data-driven approach and expert analysis make it an essential tool for staying competitive in the job market.

**Mr. Amit Kolhe**
Managing Trustee
Sanjivani Group of Institute,
Kopargaon, Maharashtra

Heartiest congratulations to Wheebox for the 11th edition of India Skills Report 2024, a much sought after & insightful document laying the road map to the skill requirements of tomorrow. Finding the skill gaps and sharing them will definitely help in the effective training of the future workforce, a much-needed strategy to foster the developmental goals in line with the current policies. This will further help the policymakers in drafting output-oriented policies keeping in view the local and global requirements. This unique initiative of Wheebox entailing trustworthy information will definitely help all the stakeholders in talent hunt & acquisition. I pray for the huge success of this wonderful report and wish for a grand releasing ceremony of the same by Wheebox & strategic partners AICTE & AIU.

**Prof. (Dr.) Ranjit Singh**
Vice Chancellor
Shobhit University, Gangoh,
Saharanpur, UP

It is essential to maximize the talent potential of students to enhance their employability. By attending the online examination for our students by Wheebox, we saw an immediate increase in our placement record. The AI-powered assessment system provides an error-free and effective tool to evaluate the students.

**Prof. N. Palanisamy**
Principal
Annamalai Polytechnic College

# CHANGING THE EDUCATION LANDSCAPE – GOOGLE

A remarkable transformation has been observed in the educational technology landscape over the past one and a half decades. The journey has progressed from rudimentary in-house data centers and bespoke software solutions to the widespread adoption of licensed software applications. Smartboards became ubiquitous in classrooms, and the acceptance of Education SAAS models paved the way for cloud-based applications.

The rise of AI/ML-based learning marked a significant milestone, culminating in the current surge of Generative AI utilization. This period has ushered in a revolution of sorts, reshaping the very nature of learning, teaching methods, and institutional operations. The educational technology landscape has changed dramatically in the last 15 years. In the past, schools and colleges typically had their own in-house data centers and used bespoke software solutions. This made it difficult and expensive to keep up with the latest technologies, and it also limited the ability of schools to share resources.

Today, the vast majority of schools and colleges use licensed software applications. This has made it much easier and more affordable for schools to adopt new technologies, and it has also made it easier for schools to share resources. Smartboards have become commonplace in classrooms, and the adoption of Education SAAS models has paved the way for cloud-based applications.

The rise of AI/ML-based learning has been a major milestone in the evolution of educational technology. AI/ML-based learning systems can provide students with personalized learning experiences, and they can also help teachers to identify and address students who are struggling. The current surge of Generative AI utilization is poised to revolutionize educational technology even further. Generative AI can be used to create personalized learning materials, and it can also be used to automate tasks that are currently performed by teachers.

These changes have had a profound impact on the very nature of learning, teaching methods, and institutional operations. In the past, students were typically passive recipients of information. Today, students are more actively engaged in the learning process, and they are more likely to be using technology to learn. Teachers are also using technology more than ever before, and they are finding new and innovative ways to use technology to engage students and improve learning outcomes.

The changes in educational technology have also had a significant impact on institutional operations. Schools and colleges are now using technology to manage student records, to communicate with parents and guardians, and to deliver instruction. Technology is also being used to automate tasks that were once performed manually, which is freeing up staff time to focus on other important tasks.

The evolution of educational technology is still in its early stages, and it is impossible to say what the future holds. However, technology will continue to play an increasingly important role in education. As technology continues to evolve, schools and colleges will need to adapt to keep up.

## Impact on Learning:

Technology's impact on learning is profound and tangible. The era of learning solely from textbooks and traditional lectures is a bygone era. The digital age has empowered learners with an abundance of information accessible at their fingertips.

This autonomy in learning pace and style, coupled with global collaboration and access to unprecedented resources, has redefined the traditional classroom paradigm. Learners are no longer confined to the four walls of a classroom, but can engage in learning experiences that are personalized, collaborative, and borderless.

Technology has transformed the role of the teacher from a sole dispenser of knowledge to a facilitator of learning. Teachers now curate and create engaging learning experiences that leverage the power of technology to meet the individual needs of learners.

The impact of technology on learning is not without its challenges. However, the benefits of a technology-rich learning environment are clear. Learners who are adept at using technology are better equipped to succeed in a world that is increasingly reliant on digital information and communication.

In short, technology has not only changed the way we learn, but it has also changed the very nature of learning itself.

## Impact on Hybrid Learning :

Technology has laid the groundwork for hybrid learning, seamlessly blending conventional classroom interactions with digital flexibility. Online learning platforms, virtual reality, and augmented reality have shattered geographical barriers, empowering learners to acquire knowledge from diverse environments across the globe.

The integration of artificial intelligence has personalized learning experiences, providing real-time feedback and facilitating adaptable educational methods. This symbiotic blend of individual attention and remote learning epitomizes the hybrid model's dynamic potential.

In essence, technology has not merely enabled hybrid learning but has also elevated it to a paradigm that transcends the limitations of traditional education. By bridging the gap between physical and virtual spaces, hybrid learning harnesses the power of technology to create a truly global and personalized learning experience.

## Impact on Educational Institutes :

Educational institutions have undergone an unprecedented transformation due to the pervasive influence of technology. The shift from paper-based operations to digital efficiencies is emblematic of this transformation. A thriving ecosystem of educational technology companies caters to administrative needs, encompassing solutions such as School SIS, ERP, CRM, Digital Marketing, and Student Lifecycle Management.

Each meticulously harnessed digital facet amplifies data-driven decision-making, revolutionizing operational acumen. In essence, technology has not merely streamlined administrative processes but has also elevated them to a level of sophistication that enables educational institutions to make informed and strategic decisions that enhance their overall effectiveness.

## Impact of GEN AI :

As Generative AI (GenAI) stands poised to transform education, the technology offers numerous opportunities to unlock value and enhance experiences across institutions.

• Hyper-personalized outreach and engagement produced by GenAI will provide innovative, low-cost methods for institutions to achieve enrollment goals.

• Leveraging GenAI for course planning and digital courseware can potentially save time for faculty and produce better student outcomes.

• Teaching students to master the use of GenAI can mitigate potential negative impacts in the labor market and open up new employment opportunities following graduation.

In essence, GenAI has the potential to streamline administrative processes, enhance student engagement, and prepare learners for the demands of the 21st-century workforce. By embracing GenAI, institutions can position themselves for success in an increasingly competitive and rapidly changing world.

The integration of technology into education presents both empowerment and cautionary tales. Personalized learning, real-time feedback, task automation, interactive experiences, and global access to resources illustrate a transformative landscape. Simultaneously, disparities, cyberbullying, distraction dynamics, complexity in choices, and health considerations necessitate careful evaluation. The commitment to champion the adoption of technology in education, and navigating its complexities for years to come, remains paramount.

The transformative potential of technology in education is undeniable. However, it is crucial to acknowledge and address the potential drawbacks to ensure that technology enhances rather than hinders the learning experience. By carefully considering both the benefits and challenges, educators and policymakers can create a technology-rich learning environment that is both effective and equitable for all learners.
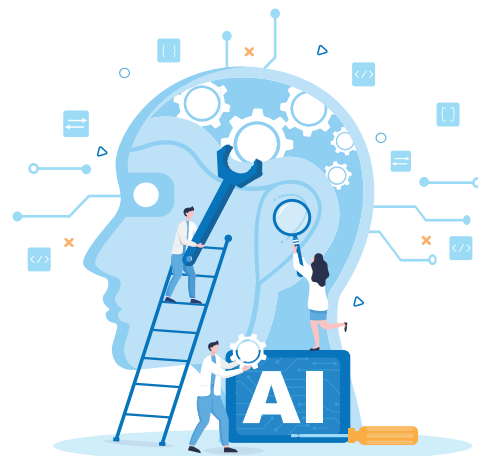
# THE DEMAND STORY

# INDIA HIRING INTENT EARLY CAREER EDITION 2024

In the dynamic realm of global employment, India stands as a beacon of evolving talent trends, navigating through economic shifts, technological advancements, and the ever-changing expectations of the workforce. As the world grapples with uncertainties, the talent market in India is witnessing substantial transformations, signaling positive growth in hiring trends.

One striking observation is the surge in internal mobility globally, indicating a strategic shift among companies to fill their skilling needs from within, amidst the prevailing global uncertainties. In the Indian context, these trends align with an expanding talent pool, underscoring the need for skilled professionals. However, this growth is met with challenges such as a shortage of skilled talent and heightened competition for top-tier professionals. This year's forecast unveils the most sought-after roles, emphasizing the critical importance of both hard and soft skills in the evolving job landscape. Top positions include Software Engineer, Cloud Architect, Data Scientist, Product Manager, Sales Engineer, Manufacturing Engineer, Quality Assurance Engineer, Healthcare Engineer, Clinical Research Associate, Pharmacist, and Nurse.

Specifically, job sectors geared toward business growth and customer acquisition are witnessing a notable uptrend in India. Roles like sales development, business development, and demand generation are at the forefront of this surge, reflecting a strategic focus on driving organizational expansion and outreach.

Looking ahead, the Hiring Intent Survey trends conducted across India for 2024 paint a promising picture. The IT and ITES sectors are expected to retain their status as major contributors to job growth, while other sectors such as manufacturing, healthcare, and retail are poised for robust demand for skilled professionals. Online recruitment statistics echo this optimism, with over 95% of companies gearing up for imminent recruitment drives, leveraging modern recruitment

trends for the Indian industry. Crucially, the significance of soft skills cannot be overstated, with employers emphasizing traits like communication, teamwork, and problem-solving in prospective candidates. Beyond technical prowess, the ability to collaborate and navigate complex scenarios is highly valued in the modern workplace.

However, the changing dynamics in talent acquisition bring forth a critical need for understanding and adapting to emerging trends. The Hiring Intent Survey - Early Career Edition conducted among 15+ industries across India, provides valuable insights into the intricacies of these trends, offering a comprehensive understanding of the evolving demand for talent across various disciplines. As India strides confidently into 2024, deciphering these trends becomes imperative for academia, organizations, and job seekers alike, shaping a future where opportunities abound and talents find their perfect match.

## Keeping Up with Job Trends on Social Media

Heading into 2024 social media platform LinkedIn is anticipating a substantial 20% year-over-year increase in hiring, the pulse of India's job market is strong, driven by heightened demand in key sectors. LinkedIn's projections shed light on a promising horizon for job seekers and employers alike in the domains of technology, manufacturing, and healthcare. Corroborating this outlook, the India Hiring Intent Survey - Early Career Edition by Wheebox echoes a 17.70% increase in hiring expectations confirmed by this year's survey findings. This aligns seamlessly with projections by job platforms like LinkedIn, painting a cohesive picture of the job market's trajectory for the year ahead. Job seekers are advised to proactively manage their professional profiles on platforms like LinkedIn, ensuring they reflect their current skills and experiences. Additionally, the power of networking is underscored as a valuable tool for career growth. As we stand at the intersection of technology and human capital, staying updated and fostering connections will be key to unlocking the myriad opportunities that lie ahead.

**Key Finding:** Most of the hiring activity of 67% of all corporates surveyed this year will come from professional networking or social media as the preferred channel of talent acquisition.

# Hiring Intentions and Trends from Industry Leaders

**Key Takeaways from the Hiring Intent Survey – Early Career Edition for 2024**

**The India Hiring Intent Survey – Early Career Edition was undertaken by corporates across 15 industries across India and shows a positive inclination towards hiring activity forecasted for 2024.**

• On average there is expected to be an overall average of 17.70% increase in new hires across all age groups from freshers to professionals with over 15 years of experience, demonstrating a considerable improvement over the previous year, with a 0.125% increase in positive hiring intent as the projected talent demand for 2024

• Demand for freshers is highest in the BFSI sector with a 40% increase in hiring expected, and the average hiring activity forecast for freshers across all industries is expected to ramp up by 22%

• Demand among companies seeking professionals with 1 – 5 years of experience is expected to grow by 28% with the IT sector creating the most demand in this age group and expected to ramp up hiring activity to 31.7% followed by Engineering and Manufacturing witnessing a 30% increase in demand for this age group

While demand for freshers with Engineering or equivalent degrees (BE/B.Tech)  has remained the same as last year at 49%, there has been an increase from 15% to 18% in the demand for freshers graduating with BA/BCA/BBA/B.Com/BSc.etc., and other degrees

• Demand for BE/B.Tech talent is highest in the automotive sector expected to comprise 89% of engineering graduates in the workforce in the coming year, followed by a growing 51% composition of engineering graduates in the IT sector

• Overall demand for postgraduates across industries is expected to grow to 25% of the corporate workforce, with the highest demand emerging from the IT and services industry expected to increase in number to 43% of postgraduates in the workforce

• Manufacturing and Engineering is expected to comprise 48% of engineering graduates among new hires next year, showing the growing demand for engineers with 30% of new hires expected to have 1 – 5 years of experience

• Management professionals are most in demand in the IT and services industry with 27% of next year's workforce expected to comprise professionals with a postgraduate in management or equivalent, which is a massive climb in hiring from last year's 13% forecasted hiring data for postgraduates in the IT industry

• Demand is highest across all industries for professionals with 1 – 5 years of experience with 28% of new hires expected to be from this age group, followed by 24% of new hires expected to have at least 6 – 10 years of experience

• Internal referrals will play a major role in hiring for talent across all industries as 50% of corporate survey respondents indicate referral programs as a reliable channel in this year's findings

• Professional networking emerged as the most preferred channel of talent acquisition among corporates with 67% showing that social media is a key channel for hiring

• 33% of corporates surveyed indicate that the company website would be the most preferred channel to source talent in their industry

• 17% of corporates anticipate hiring via job portals will be a preferred mode of talent acquisition in the digital age

• Maharashtra, Karnataka, Delhi and Tamil Nadu are rated as the top regions with most availability of talent being targeted by corporates looking to hire in the coming year

• Bangalore and Hyderabad are the top cities on the corporate radar in India for most talent availability where hiring candidates from these states remains a top choice across industries

• Increased female participation in the workforce to 36% from last year's 33% is a massive step in the right direction, with males comprising 64% of the workforce across industries compared to last year's 67% of the workforce comprising of males

• Amidst the surge in demand for new skills and talent, 67% of corporates surveyed indicate that there have been layoffs this year, making room for new jobs and talent being introduced in organizations across industries

• The biggest reason for layoffs this year has been due to performance-based rationalization in organizations, with 58% of layoffs being linked to performance at work

• 17% of layoffs in this year's survey have been due to business factors, while 33% of corporates surveyed have had no layoffs throughout the year

• 59% of corporates surveyed state work from home as the norm for the workforce, which increased from 51% last year while there has been a drop in organizations offering a hybrid model from 37% last year to 33% this year

• While 10% of all corporates surveyed last year indicated a virtual work mode for the workforce, this year only 5% state that virtual is the way forward for employees

• 71% of the services sector and other diversified corporates state that work from office is going to be the most preferred work model, with only 10% favoring a hybrid work model compared to last year's 21%

• Corporates in the IT industry comprise the majority of respondents offering a hybrid model with 54% inclination towards meeting the demands of a hybrid workforce, while Engineering and Manufacturing comes next at 51% anticipating a hybrid workforce

• Across corporates there is a demand that 5% of new hires next year have an experience of 15+ years in their industry, opening the floors to highly targeted hiring activity for top talent across industries

## Gender Participation in the Workforce

Within the framework of India's economic trajectory, gender disparities persist, reflecting a labor force participation rate of 73.6% for males and 24% for females. ISR's recent survey, a beacon of fresh insights, paints an optimistic picture, revealing an encouraging increase in female participation in the organized sector from 33% to 36% in 2023. While this progress is noteworthy, the stark reality remains that less than 1 in 5 Indian women are part of formal employment, underscoring the imperative need for sustained efforts to bridge the gender gap.

**Growth in Female Participation in the Workforce Entering 2024**

| GENDER | 2023 PERCENTAGE | 2024 EXPECTED PERCENTAGE |
|---|---|---|
| FEMALE | 33% | 36% |
| MALE | 67% | 64% |
| TOTAL | 100% | 100% |

In a comparative context, India's female labor force participation rate lags behind counterparts like Pakistan and aligns with Afghanistan's pre-2021 figures. The noteworthy surge in self-employment among women, reaching 65% between June 2018 and December 2022, potentially stems from economic distress, highlighting the necessity for comprehensive measures to address falling household incomes. The enduring challenge of the wage gap, where women earn 76% of what men do, underscores the deep-rooted issues hindering gender equality in the workforce. Despite strides being made, the journey toward achieving parity demands relentless efforts. ISR's findings not only offer a new perspective on the gender parity debate but also signify a collaborative approach with partners and industries to usher in positive change.

ISR is actively working hand in hand with partners and industries to bring the best talent on board, providing new opportunities to women and harnessing the vast employable youth population of India. This collaborative effort is instrumental in providing avenues for women to excel in diverse sectors, contributing to a more equitable and inclusive workforce. The proposed government initiative to reserve a third of parliamentary seats for women aligns seamlessly with this commitment, instilling hope for a future where gender imbalances are rectified systematically, creating a more equitable and inclusive landscape for all.

## Rising Demand for Experienced Professionals

As corporate India embarks on a journey of progress, the demand for professionals with 1-5 years of experience emerges as a cornerstone, poised to surge by an impressive 28%. Leading this transformative wave is the Information Technology (IT) sector, projecting a robust hiring activity set to increase by 31.7%. Engineering and Manufacturing follow closely, witnessing a substantial 30% rise in demand for this dynamic age group. A notable revelation from ISR's forecast is the dominance of Manufacturing and Engineering, constituting a significant 48% of engineering graduates among new hires in the upcoming year. This not only underscores the escalating demand for engineers but also highlights the critical role they play in shaping the workforce of tomorrow. Remarkably, 30% of new hires in these domains are anticipated to bring with them 1-5 years of valuable experience, further emphasizing the industry's reliance on seasoned professionals.

ISR's comprehensive analysis extends across industries,

unveiling that the demand is most pronounced for professionals in the 1-5 years experience bracket, comprising 28% of anticipated new hires. Following closely, 24% of new hires are expected to bring a wealth of experience ranging from 6 to 10 years. These findings illuminate the multifaceted dynamics of the workforce, emphasizing the need for a diverse talent pool to navigate the challenges of a rapidly changing corporate landscape. However, ISR's insights transcend mere statistics. Within this dynamic corporate scenario, there is a distinctive call for highly seasoned professionals, with a noteworthy 5% of new hires next year expected to boast an experience of 15+ years in their respective industries. This revelation not only underscores the industry's recognition of the value these veterans bring but also signals a strategic and targeted approach to hiring top-tier talent across diverse sectors.

## Experience Mix of New Hires in The Workforce of 2024

**Percentage of New Hires Mix Expected for 2024**

| EXPERIENCE | 2024 |
|---|---|
| FRESHERS | 18.80% |
| 1 TO 5 YEARS | 27.80% |
| 6 TO 10 YEARS | 23.90% |
| 10 TO 15 YEARS | 12.90% |
| OVER 15 YEARS | 5.10% |

### Average Mix of New Across Key Industries

| INDUSTRY | AVERAGE OF FRESHERS 2024 | AVERAGE OF 1-5 YRS 2024 |
|---|---|---|
| AUTOMOTIVE | 16 | 5 |
| BFSI | 40 | 35 |
| ENGINEERING & MANUFACTURING | 13.3 | 30 |
| IT | 17.3 | 31.7 |
| OTHERS AND DIVERSIFIED | 21.4 | 26.4 |
| TOTAL | 22 | 26 |

## Hiring for Freshers in the Coming Year

Among India's workforce dynamics, an overarching average increase of 17.70% in new hires spanning from freshers to seasoned professionals with over 15 years of experience is anticipated. This robust surge signals a promising outlook for the employment landscape, emphasizing the need for continuous skilling to meet the evolving demands of the future of work. Within this panorama, the BFSI sector emerges as a beacon, projecting a remarkable 40% increase in hiring for freshers. Across all industries, the hiring forecast for freshers is poised to escalate by 22%, underlining the critical role of foundational skills in preparing the youth for their professional journeys. While demand for freshers with an Engineering or equivalent degree (BE/B.Tech) remains consistent at 49%, there's a notable shift in the landscape with an increase from 15% to 18% in demand for freshers graduating with diverse degrees like BA/BCA/BBA/B.Com/BSc, showcasing the industry's openness to varied skill sets.

In the realm of specialized talent, the automotive sector claims the apex for BE/B.Tech graduates, constitute an impressive 89% of engineering graduates in the workforce. Simultaneously, the IT sector displays a growing trend with a 51% composition of engineering graduates, highlighting the sector's dynamic demand for skilled professionals. Postgraduates are set to play an increasingly pivotal role, constituting 25% of the corporate workforce across industries. The IT and services industry takes the lead, with a substantial increase to 43% of postgraduates in the workforce, reaffirming the industry's recognition of advanced skills. ISR, at the forefront of measuring the world's talent, stands as a catalyst in bringing the best talent to the corporate arena. Through comprehensive assessments and insights, ISR enables industries to tap into the latest advancements in the world of education, ensuring a symbiotic relationship between skilled professionals and the dynamic requirements of the ever-evolving corporate landscape. This collaborative effort, bridging the aspirations of the youth with the opportunities provided by the professional sector, contributes significantly to the progressive narrative of India's workforce.

## Regions Expecting Increased Hiring Activity

Maharashtra, Karnataka, Delhi, and Tamil Nadu stand tall as the top regions, beckoning corporates with a wealth of available talent set to be targeted in the upcoming year. These regions not only serve as hotspots for employment but also signify the diverse and dynamic skill sets found in different corners of the country. Delving into the urban fabric, Bangalore and Hyderabad emerge as the top cities on the corporate radar, captivating attention as hubs with the most abundant talent reservoirs. Hiring candidates from these states remains a strategic and preferred choice across industries, showcasing the thriving opportunities for skilled professionals in these vibrant urban landscapes.

The ISR findings illuminate a significant rise in female participation in the workforce, surging from last year's 33% to an admirable 36%. This positive trajectory represents a noteworthy stride in fostering gender equality, signaling an inclusive approach toward harnessing the full potential of India's talent pool. This increased female employability is a commendable step in the right direction, influencing gender participation across urban and rural areas. The vibrancy of opportunities in India's top cities, driven by technological advancements like AI, creates a ripple effect across sectors,

**Top 5 States Expecting Increased Hiring Activity in 2024**



- Karnataka
- ★ Delhi
- Maharashtra
- Tamil Nadu
- Hyderabad
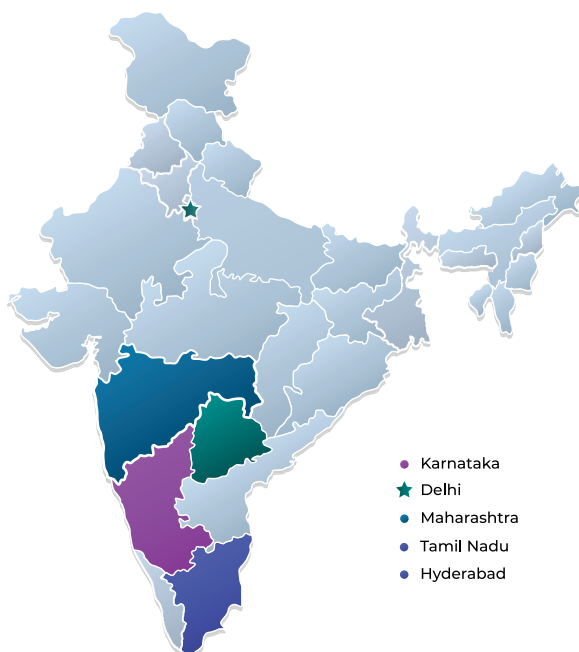
age groups, and social backgrounds. Embracing AI not only creates new job roles but also accelerates the pace of sustainable development, ensuring a holistic and inclusive growth trajectory for the nation. This collective effort, propelled by increased female participation and the dynamic talent landscape in key regions and cities, positions India on the cusp of a transformative era in the workforce, where diversity and innovation converge for a brighter future.

## Corporate's Most Reliable Talent Acquisition Channels

Professional networking emerges as the preferred channel for talent acquisition among corporates, with a significant 67% acknowledging social media's pivotal role in the hiring landscape. The reliance on platforms like LinkedIn underscores the transformative impact of social hiring in identifying and engaging with prospective candidates. Moreover, 33% of corporates affirm that the company website remains a preferred channel for sourcing talent, emphasizing the need for a robust online presence to attract potential candidates. In the digital age, 17% of corporates foresee job portals as a valuable mode of talent acquisition, showcasing the diverse avenues organizations explore to identify and engage with potential hires.

Within the corporate realm, internal referrals are poised to play a pivotal role in talent acquisition, with 50% of survey respondents citing referral programs as a reliable channel. This emphasizes the power of existing networks and the endorsement of current employees in identifying and nurturing top talent within the organization. The landscape of talent acquisition is evolving with the infusion of artificial intelligence, streamlining hiring processes, and transforming HR activities. As organizations increasingly leverage technological advancements, the hiring landscape becomes more inclusive, efficient, and attuned to the diverse needs of the workforce. This multifaceted approach, blending traditional channels, social hiring, and technological advancements, ensures that organizations can identify, nurture, and retain top talent across industries, creating a dynamic and resilient workforce for the future.

## Surge in Engineering and Management Demands Across Industries

Within the engineering domain, the demand for BE/B. Tech talent is pronounced, with the automotive sector leading the way by comprising 89% of engineering

graduates in the upcoming workforce. Following closely, the IT sector exhibits a growing trend, with a 51% composition of engineering graduates, underscoring the industry's reliance on technical expertise. Postgraduates are becoming increasingly integral to the corporate workforce, with an expected growth to 25% across industries. The IT and services industry emerges as a significant driver of this trend, anticipating a substantial increase to 43% of postgraduates in their workforce. This highlights the industry's recognition of the value that advanced degrees bring to navigating complex challenges and fostering innovation.

In the engineering realm, Manufacturing and Engineering are set to dominate, constituting 48% of engineering graduates among new hires. This surge in demand for engineers, particularly those with 1–5 years of experience, emphasizes the critical role they play in driving innovation and progress across sectors. Furthermore, the IT and services industry showcases a remarkable demand for management professionals, with 27% of the upcoming workforce expected to comprise individuals with a postgraduate in management or equivalent. This significant climb from last year's forecasted hiring data (13%) underscores the industry's recognition of the importance of skilled management professionals in ensuring efficient resource management and guiding businesses forward. In the age of artificial intelligence and evolving technology, the demand for qualified technical resources is more pronounced than ever. Engineers and management professionals play pivotal roles in shaping the future of industries, driving innovation, and ensuring sustainable progress. This narrative underscores the significance of these professionals in steering businesses toward success in a rapidly changing landscape.

## Shift in Workforce Dynamics

Amid a dynamic shift in skill demands, a noteworthy 67% of surveyed corporations have undergone layoffs this year, paving the way for a restructuring of job functions and the introduction of fresh talent into organizations across diverse industries. The primary catalyst for these layoffs has been performance-based rationalization, accounting for a substantial 58% of workforce reductions. This points to organizations aligning their talent pool with evolving skill requirements and performance expectations in a rapidly changing landscape.

Business factors have contributed to 17% of the layoffs observed in this year's survey, underscoring the need for organizations to adapt to evolving market

conditions and strategic imperatives. On a positive note, 33% of surveyed corporations have managed to navigate the year without resorting to layoffs, emphasizing the resilience and strategic acumen of these organizations. This shift in workforce dynamics reinforces the importance of organizational excellence and adaptability. As companies reshape their workforce to meet new challenges and capitalize on emerging opportunities, the demand for skills aligned with the future of work intensifies. The interplay between layoffs and the demand for new talent underscores the pivotal role

that identifying and retaining top talent will play in the technology-driven future of work.

**Have there been any recent layoffs in your organization, and if yes, what were the factors contributing to them?**

| RESPONSE | % |
|---|---|
| YES | 67% |
| NO | 33% |

| FACTORS | % |
|---|---|
| NO LAYOFFS. JUST PERFORMANCE BASED RATIONALIZATION | 58% |
| WE HAVE BEEN HIRING | 25% |
| SOME LAYOFFS DUE TO SPECIFIC BUSINESS FACTORS | 17% |

For India's vast youth talent, staying attuned to industry trends and leveraging technology for continuous upskilling will be key to capitalizing on these emerging opportunities. The juxtaposition of layoffs and the demand for new skills emphasizes the imperative for professionals to proactively engage with ongoing advancements, ensuring they remain agile and competitive in the evolving job market. This narrative highlights the symbiotic relationship between layoffs, the demand for new job functions, increased skills, and the overarching theme of organizational excellence for the future of work.

## Back to Normal: Is Work from Home Still the Norm?

In a paradigm shift, 59% of surveyed corporates now consider work from home as the norm, marking an increase from 51% the previous year. However, there's been a decline in organizations offering a hybrid model, dropping from 37% to 33%. This contrasts with the previous year when 10% of all surveyed corporates favored a virtual work mode; this year, only 5% believe virtual is the way forward for employees. Remarkably, 71% of corporates in the services sector and other diversified industries express a preference for the work-from-office model. In this segment, 10% favor a hybrid work model, down from last year's 21%. In contrast, the majority of IT industry respondents (54%) opt for a hybrid model, followed by Engineering and Manufacturing at 51%. This shift in work models aligns with a notable demand for experienced professionals, with 5% of new hires expected to have 15+ years of industry experience next year. This emphasizes a strategic hiring focus on top talent across industries.

While embracing remote work is commendable, the data underscores the value of on-premise workforces. Going to the workplace strengthens social bonds, fosters experience-based learning and empowers less experienced professionals with the guidance required to thrive in the industry. It is also a celebration of the challenges brought by the pandemic coming to an end, restoring normalcy to the professional sector. Although remote work culture has emerged, the growing need for on-premise workforces remains, catering to the demands of economic growth and the professional aptitude sought out by corporates. This narrative illuminates the nuanced dynamics between evolving work models, the demand for experience-based learning, and the significance of on-premise workforces in fostering professional growth.

# INDUSTRY LEADERS SPEAK

In 2024, the IT industry's attention will move beyond figures. Embracing gig and contractual workers, empowering recruiters with data management skills, reflects a strategy aimed at fostering a dynamic and robust workforce for the approaching year.

**Jashan Joshi**
Global Talent Sourcing &
Talent Intelligence Leader, ZS Associates

Our aim is to hire efficiently in 2024. We're integrating India globally, embracing boundaryless TA processes, Apprenticeship hiring through NATS/NAPS, and empowering SME recruiters with data driven training. The new paradigm is 'Recruiting as a Service.

**Anshuman Mukherjee**
Lead HR Manager (TA), Tietoevry

The logistics sector maintains a predominant focus on operations and services, representing 90% of the workforce while the struggle lies in fulfilling the need for proficient sales personnel. A surge in blue-collar hiring is expected in 2024. Envisaging a period of flat hiring growth, the industry is actively exploring new hiring models. Embracing an outsourcing approach will enable in-house teams to concentrate on enhancing productivity and executing a more tactical talent agenda.

**Sivasankar A**
General Manager HR & TA, DSV Solutions Pvt Ltd.

Job roles are changing. Newer competency mix will transform I, so called, standard roles. Successful organisations will anticipate these newer competencies and fulfil them. Fulfilment can happen either by industry academia collaboration or procurement of required skills from the marketplace.

**Amit Rai**
Head HR, Tata Play Fiber

# THE STATES THAT CHANGED THE EMPLOYMENT PARADIGM

## The Andhra Pradesh Story

### Achievements and Highlights - The SD&T Department Report

This section highlights the various achievements of the SD&T department along with various other initiatives to upskill and expand possibilities for jobs among the youth in India.

### Training & Placements :

• Over 15.03 lakh beneficiaries have been trained since 2019

• Academic Schemes - Trained 11.24 lakh students

• Unemployed Youth - Trained 3.17 lakh unemployed youth

• Job Melas/ Fairs - Facilitated 1.74 lakh candidates with placements

### Created in-house training capabilities (infrastructure & human resources) through the Cascading Skill Ecosystem

• 192 Skill Hubs in 175 A/Cs

• 26 Skill Colleges in 25 P/Cs

• 400+ in-house trainers across 21 sectors

• National Skill Training Institute (NSTI) sanctioned in Visakhapatnam by DGT, GOI with Rs. 200 Crores

• Infrastructure & Lab upgradation in ITIs, Polytechnics taken up with Rs. 560 crores. Rs. 100 Crores sanctioned for Modernization

• Modernization of 188 Govt. VocaSonal & Technical InsStuSons with the industry participation

• Regular industrial training for the faculty to upgrade their skills on par with the latest technologies

**Shri. Buggana Rajendranath**
Honourable Minister for Finance, skill development and training, commercial taxes, Planning and legislative affairs, Govt of Andhra Pradesh

### Industry-Specific Training

• Collaborations with Industries, and Sector Skill Councils to ensure quicker job placements

• Introduced Industry 4.0 courses such as Drone Technology, AR&VR, AI & ML, EV Technology, IoT, etc. in ITIs and Polytechnics

• Upgraded Curriculum for 32 diploma courses in line with the latest industrial advancements

• Dedicated "LMS Portal" with Digital Content for more than 200 subjects for Polytechnic students

• Community-specific training programs for SC, ST, and Women beneficiaries

• Training using the global market needs in collaboration with GOI and international agencies

• 78 nursing candidates undergoing German language training. 11 nurses received offers to work in Germany

### Detailed Specifications of Various Initiatives

### The Department of Skills Development & Training

GoAP has created a New Integrated Skill Ecosystem in the state by bringing all skill and vocational education wings under a single umbrella called the Department

of Skills Development & Training (SD&T). The Dept. is providing long-term, and short-term vocational & technical training through various wings under its purview viz, Dept. of Technical EducaSon, Directorate of Employment & Training, APSSDC, SEEDAP, and NAC catering to the diversified pool of beneficiaries.

## Major Highlights:

Provided training to 14,42,134 candidates and placements to 3,57,334 candidates, covering 98 job roles across 20 different sectors.

## A. Department of Technical Education – Nurturing Technical Excellence through Polytechnics

• Updated curriculum for 32 diploma courses in line with the latest industrial advancements

• Industry 4.0 courses such as AI & ML, EV Technology, IoT, etc.

• Dedicated "LMS Portal" with Digital Content for more than 200 subjects

• Upgradation of Polytechnics with Rs. 394 crores

• Industrial training for the faculty to upgrade their skills

• Achieved National Board of Accreditation (NBA) for 9 Government Polytechnics

## B. Directorate of Employment & Training - ITIs: A Journey of Employment Excellence

• Offering Vocational Training in 31 Engineering & Non-Engineering trades

• Collaborations with 150+ industries

• Placed 33,601 candidates out of 41,548 trained with 80.8% placements

• Organized job fairs and facilitated 44,050 candidates with placements

• Industry 4.0 courses such as Drone Service Technician, AR&VR, etc.

### Andhra Pradesh State Skill Development Corporation (APSSDC)

## C. Cascading Skill Ecosystem - Transforming Andhra Pradesh's Skill Development Landscape

A holistic framework to nurture the talent of AP Youth and fulfill the skilled manpower needs of all stakeholders in the state in line with dynamic industrial advancements.

**Objectives** :

• Build an aspirational brand in skilling & recognition to AP Youth at National and global levels

• Credit transferability to ensure multi-entry & exit

• Technology-aided hands-on learning & lifelong learning opportunities

• International mobility for the youth

• Create a blueprint for future AP Skill Vision 2030

**Components :**

### • Skills University

 – Apex Level body to oversee the functioning of the skill ecosystem in the state.

- 50 acres of land allocated for Skills University.

### • Skill Colleges

- One skill College per Parliamentary Constituency (26 skill colleges) offering high-end courses for graduates. So far, 1,774 candidates trained, and 1,581 placed with an 89% placement record.

### • Skill Hubs

- 192 Skill Hubs across 175 Assembly Constituencies offering training catering to the local industrial demand. So far, 19,768 candidates trained and 6,455 placed.

### • Skill Spokes

- Training centers operated by industries within their premises offering customized training leading to captive placements. So far, 16,517 candidates have been trained, and 15,684 placed with 95% placements.

### • Skill International

- Offer training using the global market requirements in collaboration with GOI and international agencies. 78 nursing candidates are undergoing German Language training. 11 nurses received offers to work in Germany.

**Key Highlights:**

• Covering 98 job roles across 20 sectors

• Industry Partner for each institute for placement support

• Creating in-house training capacities (infrastructure & human resources)

• Convergence with stakeholder departments

• Wide coverage of beneficiaries from school dropouts SLLC graduates & postgraduates

• Collaborations with GOI and international agencies for Overseas Placements

## D. Academic Initiatives - Raising Skill Standards of Future Workforce at Institution Level

• CM Skill Excellence Centres in 100 Engg. Colleges

• Employability Skill Centres in 498 Degree Colleges

**Key Highlights:**

• Blended mode training - Online & Offline

• Industry certification courses in emerging technologies

• Employability skills, sok skills, life skills, etc.

• Vast network of in-house coordinators and trainers for effective implementation

• Under academic programs, 10,56,831 students have been trained

• Collaborations with major industry partners :

- Dassault Systems, UiPath Academy, Samsung PRISM, Oracle Academy, C-DAC, Dune Microsoft-SAP Labs, AWS Academy, Wadhwani Foundation, etc

## E. Central Government Skill Development Initiatives

Implementing multiple flagship skill development schemes of GOI departments.

• CPradhan Mantri Kaushal Vikas Yojana (PMKVY)

• Electronics System Design and Manufacturing (ESDM)

• National Fisheries Development Board (NFDB)

• National Bank for Agriculture and Rural Development (NABARD)

• Skill Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP)

• Jal Jeevan Mission (JJM)

**Key Highlights:**

Total 63,156 candidates are trained under various Central Govt. Sponsored schemes.

## F. Skill Universe Application - One-Stop Solution for both Aspirants & Industries to find the Right Opportunites & Resources

A Unique, Robust, and State-of-the-art web portal with real-time analytics on skill training and employment opportunities.

**Highlights of Application :**

• Single Platform for all Skill Initiatives in the State

• Captures Ensure Student Life Cycle

• Facial Recognition Attendance

• Digital Certificates

• Convergence with Line Departments

• Industry and Aspirant mapping

• Industry Onboarding for Positioning Skill Requirements

• Continuous Placement Tracking

• Integration with GOI Portals (Skill India, Apprenticeship, etc)

• Asset management system

## G. Modernization of Vocational & Technical Institutions - A Flagship Initiative of GoAP

A mission to modernize the state government institutions (ITI, Polytechnic, Skill Colleges, NAC Centers) in collaboration with prominent industries.

**Objectives** :

• verhaul and modernize Govt. Institutions with the latest & high-end machinery

• Integrate industries into the skill and education ecosystem

• Introduction of new & emerging technology training

• Create competent skilled workforce

• Rebrand the Govt. institutions as industry cum training centers

• Inculcate the industry work culture of the candidates'

**Key Components:**

• Skill GAP Analysis & Course Recommendation

• Lab/Machinery/infrastructure/COE Establishment

• Knowledge partner/ Curriculum development

• Training of Trainers (ToTs)

• Training of Students

• Joint Certification/ Placement

**Progress:**

• Currently, 188 institutions are modernized with 203 industry Setups.

## H. SEEDAP - Transforming Rural Youth Through Skill Development and Employment

• Empower rural youth by offering employment-oriented skill training

• Implementing DDUGKY in AP, a flagship skill initiative of MoRD, GOI

• One of the top-performing states, in providing placement opportunities and achieving targets

• So far, trained 67,149 rural and placed 45,080

## I. National Academy of Construction (NAC) - Empowering Skills and Building Excellence

• EPioneer in Construction, Plumbing, Power sectors

• 31 NAC Centers with 171 master trainers and expert trainers

• Received "CIDC Partners in Progress Trophy 2023" from Construction Industry Development Council (CIDC)

• So far, trained 28,172 candidates and placed 4,795

• Tie-ups with Schneider Electric, Sany Bharath, JCB India, and Godrej and Boyce etc.

• Collaborations with Construction, Water Management & Plumbing, Power, Electronics SSCs.

# TRANSFORMATION IN SKILLS: THE GUJARAT STORY

## The Gujarat Skill Development Ecosystem

In the pursuit of fostering skill development and embracing the vision of Skill India under the leadership of the Honourable Prime Minister Shri. Narendra Modi, Gujarat stands as a sign of commitment to inclusive growth, employment opportunities, and sustainable livelihoods. In 2009, Gujarat took a pioneering stride with the launch of the "Kaushalya Vardhan Kendra (KVK)" program, marking a significant chapter in the state's dedication to skill enhancement. The cornerstone of this initiative was the establishment of skill centers at every block in the state, anchored by Industrial Training Institutes (ITIs). This visionary initiative reached its zenith with a network of over 500 centers, positively impacting the lives of over 19 lakh beneficiaries, predominantly rural women, over the past decade. Gujarat's endeavors are complemented by various ministries operating at the national level, reinforcing the state's commitment to skill enhancement. Flagship schemes like the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Jan Shikshan Sansthan (JSS) implemented by the Ministry of Skill Development and Entrepreneurship (MSDE), and Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDUGKY) implemented by the Ministry of Rural Development (MoRD) synergize with Gujarat's initiatives, collectively shaping a skilled India.

## Mukhyamantri Bhavishya Lakshi Kaushal Vikas Yojana (MBKVY) :

Given the growth trajectory and the changing nature of jobs, Gujarat has recognized the importance of New age skilling to equip its youth with necessary skills to thrive in the evolving job market. Gujarat introduced Mukhyamantri Bhavishyalakshi Kaushalya Vikas Yojana (MBKVY) in FY 2022-23 to create a skilled workforce with New Age Skills across various sectors. The program offers training in 92 new-age courses in key sectors like Healthcare, Automotive, Green jobs, IT-ITeS, Drones, Electronics & Hardware, Telecom, etc. as per the industry requirement. MBKVY utilizes existing infrastructure like ITIs, educational institutions, and industry centers, providing state-of-the-art facilities for practical training. So far, over 13,154 candidates have been trained under MBKVY.
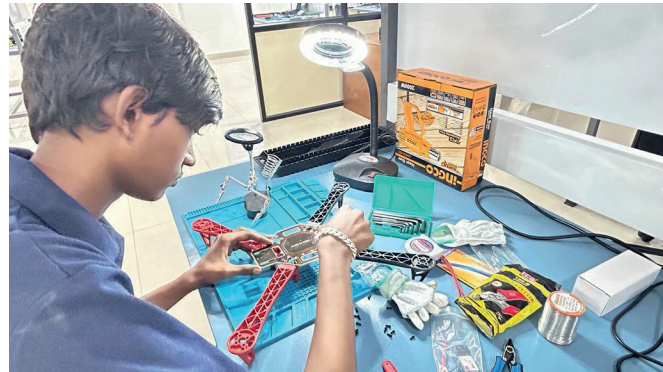


## Mukhyamantri Skill Development Initiative:

In a significant move towards unifying the skill efforts of the state, the Honourable Chief Minister of Gujarat Shri. Bhupendra Patel announced the "Mukhyamantri Skill Development Initiative" (MSDI) in FY 2022-23. Many state departments involved in skill development that were initially operating in silos are establishing coordination through MSDI. The primary objective is to optimize the state's skill infrastructure, ensuring it is effectively utilized to fulfill the ambitious goal of training over 5 lakh candidates every year. MSDI has enabled the state to offer a wide array of skill development schemes designed to cater to individuals across various levels of expertise, ranging from National Skills Qualification Framework (NSQF) level 1 to level 8. In FY 2022-23, the state has skilled 5,68,246 youth through its various departments.

## Kaushalya" the Skill University:

The state of Gujarat has ushered in a new era of education and employability through "Kaushalya"-The Skill University (KSU). Established via state legislation, KSU, under the visionary guidance of the Hon'ble Chief Minister, aims to redefine the educational landscape by integrating "Education with Employability" and ensuring "Skills to every Youth." KSU serves as a unique affiliating State University, acting as a bridge between skill development and higher education. KSU will be the

authority for awarding degrees and diplomas and overseeing crucial activities such as demand-driven quality skill training, curriculum development, research, faculty development, affiliation, and recognition. The University is offering a wide array of courses, exceeding 100 in number through its Six schools, School of Computing, School of Science, Manufacturing and Infrastructure, School of Services, School of Liberal Arts, School of Management & Finance, and School of Drones. The university has established Drone Mantra, a unique concept of drone manufacturing along with training. KSU has registered nearly 15,000 students, with more than 11,500 enrolled in various courses and 9,640 already certified. KSU has forged strong linkages and partnerships with Industries to ensure training programs align with the industry demands, leading to better job prospects and economic growth.



## Skilling at ITIs:

Gujarat has the advantage of having ITIs in every block. There are 558 ITIs in Gujarat (288 Government ITIs, 101 Grant In Aid & 169 Self-Financed ITIs) with the capacity to train 2,16,844 students. The state has 30 ITIs dedicated for Women and 19 ITIs dedicated for Persons with Disabilities. This extensive network of ITIs enables Gujarat to cater to the training needs of a substantial student population, with a collective capacity to accommodate more than 2 lakh students. The state has registered 1,36,370 trainees in ITIs filling 85% of seats which is the highest among all states. Vocational training is offered in 132 Engineering and non-engineering trades, comprising 79 trades in the NCVT pattern and 53 trades in the GCVT pattern. The state has also laid greater emphasis on the Public-Private Partnership (PPP) model, resulting in the establishment of 171 functional ITIs. Through this collaborative approach, industries actively engage in the operation of ITIs while providing support for infrastructure development.

ITIs have commenced convocation ceremonies to enhance the aspirational level of vocational education in the state. Notably, the state board has made special arrangements for ITI students to take English examinations, enabling them to obtain a class 12th equivalence. As a result, a total of 47,485 candidates have registered for equivalence in the state.



## Mukhyamantri Apprenticeship Yojana:

Mukhyamantri Apprenticeship Yojana is a program for industrial units to meet the demands of their skilled craftsmen and to train the youth of the state in an industrial environment. Gujarat ranks number 1 in the country with a registration of over 32 thousand establishments on the apprentice portal. The scheme provides financial incentives to industry to bear the cost of over and above the benefits of National Apprenticeship Promotion Scheme (NAPS) and National Apprenticeship Training Scheme (NATS) of Government of India. In FY 2022-23, the state has engaged staggering 1,21,710 apprentices.

## Mega ITI's :

To provide advanced training in emerging technologies, 41 Nodal ITIs are being developed in the state as Mega ITIs. These Mega ITIs will feature 6-8 sectoral Centers of Excellence, providing training in emerging technologies and advanced skills. They will offer demand-based and innovative courses to address Industry 4.0 disruptions. They will provide advanced training opportunities for ITI graduates and higher education students in relevant sectors. The Mega ITIs will also facilitate faculty development through Training of Trainers (ToT) programs for other ITIs. The development will occur in phases, with the first Mega ITIs to be established in ITIs Kubernagar, Rajkot, Tarsali, Surat, and Dahod. Eventually, at least one Mega ITI will be established in each district. Industries will be encouraged to collaborate as operating partners and develop Centers of Excellence (CoE) within the Mega ITIs. So far, companies like Nokia, Pidilite Industries Limited, Siemens, L&T, C4i4 are onboard for the development of CoEs.



## Gujarat Apex Training Institutes (GATI) :

The state is establishing 4 Centers of Excellence (CoEs) and 8 Institutes of Training of Trainers (iToTs) under project Gujarat Apex Training Institutes (GATI) offering progressive technology training courses to create a pool of skilled, experienced, and well-trained trainers in the state of Gujarat. These Institutes are being developed as per the international benchmark, systems, and technical expertise. Under GATI, market driven long and short-term courses in the field of modern technology would be developed. It will also focus on training teachers from vocational institutes, enabling

them to enhance their skills and knowledge for greater outreach and impact.Recently, 16 Supervisor Instructors attended a one-week training in Germany under GATI project.



## Mini ITIs :

The state is establishing Mini ITIs in collaboration with industries within GIDC estates to offer purposeful training and boost local employment opportunities for the youth of the state. The primary objective of Mini ITIs is to provide industry-relevant training to the youth in trades that align with local industries within each GIDC. The youth residing in the catchment area of a specific GIDC will be enrolled in the Mini ITIs, where they will receive training from industry experts based on the industry-relevant curriculum. To encourage industry collaboration, the state government will motivate industries to participate in establishing Mini ITIs. The government will assist by facilitating the allocation of land within the GIDC estates and supporting the construction of the necessary buildings. Industries will play a crucial role by providing modern machinery, tools, and equipment to ensure that the youth gain hands-on experience and develop adaptability skills. This collaboration between the Mini ITIs and industries will help bridge the gap between training and employment, making the youth more employable in the local industry sectors.

## Project Sankalp :

The mission has introduced an innovative Project Sankalp "In the industry, For the industry, By the industry" program in the state of Gujarat. The program aims to create a mutually beneficial ecosystem by encouraging industry associations and industries to partner

with GSDM to implement demand-based skill development programs in both the manufacturing and service sectors. The innovative industry-centric program envisages creating employment opportunities for the youth of the state by enabling demand-driven quality skilling. Industries can provide training in the Job roles aligned to the National Skills Qualifications Framework (NSQF) and GCVT and Company Specific Job roles. It provides financial benefits to the organisations by offsetting costs towards recruitment, training and stipend. The industry gets reimbursement of the training cost, and the assessment cost is also borne by GSDM. Besides, Industry Partners may also avail of benefits under National Apprenticeship Promotion Scheme (NAPS) and Mukhyamantri Apprenticeship Yojana . Under Project Sankalp, the state has trained around 3,100 candidates to date.

## SAKSHAM" KVK 2.0 :

The state of Gujarat became a pioneer in the skill development ecosystem, when it launched its flagship "Kaushalya Vardhan Kendra (KVK)" program in 2009, taking skill development programs to the doorstep of rural beneficiaries with a special focus on women. The scheme has been revamped and introduced as "Saksham"- KVK 2.0 and is aimed to provide access to skill development programs to a wide range of beneficiaries. The unique feature of the program is that Short-term Training is being offered in NSQF level 1, 2, and 3 courses. Besides, there is a provision for training under special projects that will cater to special beneficiary groups such as Women, People with Disabilities (PwD), Transgender Community, Senior Citizens, & Persons recovered from Mental illness. The the state has trained around 2,100 candidates under Saksham till date.

# TRANSFORMATION IN SKILLS: THE KERALA STORY

## ASAP Kerala Contribution to Upskilling and Reskilling in the State

Additional Skill Acquisition Programme (ASAP) Kerala is a PSU under the Higher Education Department, Government of Kerala, that focuses on skilling college-going students and the general community to enhance their employability through industry-relevant training programs. Courses are offered in various sectors like Banking and Finance, Power, IT and ITeS, Healthcare, Electronics, Media, English and Foreign Languages, and Art. The courses are selected with the help of Business Advisory Councils headed by Industry and regular conduct of Industry Round Tables. The courses are provided in offline, online, and blended formats in partnership with industries and competent training partners. On-the-job training or internship is an integral part of the ASAP courses. Upon completion of the courses, interested students are provided with placement opportunities.

More than 2.5 lakh persons, mainly from higher secondary schools, have been skilled and trained by ASAP in the last 10 years.

ASAP Kerala's major initiatives are briefly described below.

### 1. CIndustry-relevant skill training :
ASAP Kerala offers industry-relevant skill courses in partnership with industry and leading academic institutions like IIT Palakkad

### 2. Soft skill training :
such as creative thinking, problem-solving ability, communication skills, and organization skills, to improve employability and as part of life skills in schools and colleges.

### 3. Community-oriented skilling :

**A. Community Skill Parks (CSP)**

ASAP Kerala has set up 16 Community Skill Parks across the state. These are 25,000 -30,000 sq ft spaces with state-of-the-art infrastructure to offer a diverse range of specialized skill training programs. These programs are offered in collaboration with leading industry players with hands-on training aligned to industry demands. Community Skill Parks has partnered with leading industries to provide 64 courses in areas such as Petrochemical, Airport Operations, Banking & Finance, ITeS, Power, Manufacturing, Automotive, Animation, AR/VR, Ayurveda.

**B. Centres of Excellence (CoE)** have been established in the Community Skill Parks as follows :-

• AR/VR CoE at the CSPs at Kalamassery, Kunnamkulam, Kazhakootam and Pampady

• Electric Vehicle CoE at CSP Kunnamthanam, Thavanur

• Drone Technology Center at CSP Kasaragod

• Akzo Nobel Paint Academy at CSP Thavanur

The CoEs support ASAP Kerala in curating new courses and training programs on par with the NSQF framework.

**C. Customized Skill Training** ASAP Kerala conducts skill training for various Government agencies and departments such as the Department of Local Self-Government, Women and Child Development, Fisheries, Industries, etc.. ASAP Kerala has also set up a new skilling model, in association with the Kasaragod District Panchayat, under the 'Dharppanam' training program which has trained 250 women candidates in the district who had taken a career break, to learn English, computer skills, and a trade to help them take a degree course and earn while doing their graduation.

**D. Recognition of Prior Learning (RPL)** ASAP Kerala has curated a 1-year Diploma in Ayurveda Therapy course in collaboration with Kottakkal Arya Vaidya Sala. In addition, a 3-month RPL has been conducted for 511 therapists working at the various branches of the Kottakkal Arya Vaidya Sala.

### 4. Community Colleges
Community Colleges provide affordable skill training to the local community in a multiple entry and exit mode.. Five AICTE-approved D.Voc programs are currently conducted in Government Polytechnic colleges in Attingal, Trivandrum; Nattakom, Kottayam; and Shoranur, Palakkad. ASAP Kerala has mapped the students to the industry where on-the-job training is

provided every alternate semester. The first batch of students has also been provided with financial assistance through CSR funds of the Federal Bank.

## 5. Upskilling and Reskilling Programmes for Employees

**A. Engineers and technicians of** The Kerala Minerals and Metals Limited **(KMML) were the first to be reskilled in power system protection and relays.**

Designed to reskill working professionals, the program was curated for mid-level professionals of the Electrical Divisions of KMML in 'Modern Trends in Power System Protection and Relays', in collaboration with the Public Sector Restructuring and Internal Audit Board.

**B. Capacity Building Program for Enhanced Business Management for Employees of Kerala State Industries Development Corporation**

The sessions were structured to offer practical solutions through a series of interactive activities, promoting experiential learning to tackle operational hurdles effectively.

**C. Employee Upskilling Inauguration Conducted by Information Mission Kerala**

This program was specifically tailored to enhance interested employees' skills as full-stack Java Developers.

## 6. Placement and Internship

ASAP Kerala offers placement opportunities for all its students who are interested in taking up jobs immediately after the training. Last year, 2000+ candidates were placed with leading industries across the state. Concerning internships, ASAP Kerala is the agency administering the State Internship Portal and has been deploying interns under various government departments, particularly under LSGIs.

A unique model of placement that has found success is the hire-and-train model. The initiative aims to skill final and pre-final year students under the demands of the industry recruiting them. The aim is to carve a deployable workforce by the time they graduate to reduce the wastage of the productive labor force. ASAP Kerala successfully placed 104 out of 150 interested candidates in various MNCs who enrolled in ASAP Kerala's Enrolled Agent course.

ASAP Kerala also conducts placement drives named "ASPIRE". 2 such drives were held in 2023, one at ASAP

Community Skill Park Kazhakkoottam, Thiruvananthapuram, and the second, at Christ College, Irinjalakkuda, Thrissur. The placement drives were designed to cater to a diverse range of aspiring candidates, including final-year students of B.Tech/M.Tech, B.Com/M.Com, MCA, BBA/MBA, and B.Sc./M.Sc., as well as graduates seeking a new career direction. Around 600 candidates have attended each time out of which more than 20% have been selected.

## 7. Curriculum Development & NSQF alignment

ASAP Kerala is the only agency in the State that has obtained the dual recognition of NCVET as an Assessing agency and Awarding body. ASAP Kerala has initiated the development of a customized assessment platform. ASAP Kerala's Skill certificates are generated through the Information Management System, and the same is published through Digilocker, which is accessible to students through a one-time signup process.

The organization has also developed courses as per the norms and standards prescribed by the National Council for Vocational Education and Training (NCVET) and has aligned them nationally with the National Skills Qualification Framework (NSQF).

## 8. Accreditation Agency

ASAP Kerala is acting as a nodal agency in the state for affiliating/ accrediting various skilling agencies operating in the state. Several skill courses, those aligned with NSQF and others, are offered by agencies in government and non-government sectors across the state. To ensure the quality of skill training and impartial assessment, these agencies are required to affiliate/ accredit with ASAP Kerala and ensure that their courses are assessed and certified by ASAP Kerala.

## 9. Aptitude Assessment test (K-SAT)

Students choose their careers. The assessment test called K-SAT, is being delivered to 50,000 students in 8th standard and 10th standard students under SSA.

## Achievements and Recognitions

### 1. 'Best Practice in Skilling'

In 2017, ASAP was recognized nationally by Niti Aayog as a 'Best Practice in Skill Development', in tune with the action statement as outlined in sub-section 4 of United Nations Sustainable Development Goal No. 4 -

"By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs, and entrepreneurship".

## 2. ADB Award for 'Best Project for Effective GAP Implementation'

The Asian Development Bank (ADB) recognized ASAP Kerala as the 'Best Project in India that effectively implemented the Gender Action Plan (GAP) among ADB projects' in July 2020. ADB considered ASAP Kerala for the coveted award from among the 85 ongoing projects in India.

## 3. CII-Wheebox India Skills Report 2022

The role of ASAP in facilitating Kerala's ranking No. 3 in the country in 'Youth Employability', and featuring in the list of Top 5 states for 'Female Employable Resources' was duly recognized in the 9th edition of the CII-Wheebox India Skills Report 2022. Kerala also ranked fourth in the list of destinations for 'Recruiters looking for talent' and among the Top 5 places for 'Students actively seeking internships'. In the list of states with the highest employable talent across India, Kerala is among the top three states.

## 4. ASAP Kerala was felicitated by FICCI Kerala for 'Best Practices of Skilling and Employability'

The Kerala State Council of FICCI recognized ASAP Kerala for 'Best Practices of Skilling and Employability' at its maiden 'Made in Kerala' Awards 2022 for its contribution to the state in the skilling ecosystem and enhancing the employability of Kerala's youth.

## 5. Dual recognition for ASAP Kerala

ASAP Kerala has become the first agency in Kerala to be accorded dual recognition — Awarding Body and Assessment Agency — by the National Council for Vocational Education and Training (NCVET)

## 6. ASAP Kerala was onboarded by NSDC as a Skill India International Network Centre in June 2023.

This will help facilitate overseas workforce demand through sourcing, counseling, training, assessment, certification, recruitment, and immigration.

# THE ROLE OF AI IN RESHAPING THE WORK

As we navigate the 21st century, the impact of AI on India's workforce is nothing short of revolutionary. It's a story of transition, adaptation, and boundless potential. In the pages that follow, we will explore the statistics that illuminate this change, share inspiring examples of how the job market is evolving, and shed light on the ingenious skilling initiatives that are propelling India to the next level.

Entering 2024, the use of artificial intelligence (AI) emerges as a vibrant thread, intricately woven into the very fabric of our society, automating tasks previously entitled to humans and eliminating drudgery in the modern workplace. Nowhere is this transformation more profound and promising than in India, a land renowned for its vast talent and dynamic job market.

In this journey, the future is not a distant mirage but a canvas waiting to be painted with innovation, creativity, and the indomitable spirit of the Indian workforce. Let's dive into the realm of possibility and celebrate the transformative force of AI on India's job market, and how the world's largest youth population can strive to unlock new possibilities hand in hand with the accelerated AI revolution

## Identifying Jobs and Roles in AI Across Industries

Artificial intelligence (AI) has rapidly emerged as a transformative force, reshaping traditional job roles and processes across diverse industries and ushering in the age of synchronized human-machine collaboration quicker than ever today. This report underscores the imperative for business leaders, academia, and policymakers to comprehend the far-reaching influence of AI on employment dynamics. While AI is set to create new employment opportunities, it simultaneously prompts significant job displacement. Workers aspiring for success in this evolving landscape must adapt and equip themselves with the requisite skills demanded in the age of AI. According to a 2023 report

by the World Economic Forum, AI could create 97 million new jobs by 2025, while displacing 85 million jobs. This means that AI is likely to have a net positive impact on employment, but it will also lead to significant job displacement through the emergence of new job roles and the rising adoption of in-demand skills for the future.

While some job roles may undergo transformation or displacement, the future holds promise with innovative employment opportunities that align with technological advancements and the evolving demands of each industry. It is a pivotal time for workers to adapt and acquire the necessary skills to thrive in this dynamic environment. The following are some of the jobs and roles that are already being impacted by the use of AI across major industries:

## 1. Manufacturing: AI Automation

The manufacturing landscape is undergoing a profound transformation, and at its heart is the incredible force of artificial intelligence (AI). As outlined in the 2023 report by Simplilearn, India's manufacturing sector is embracing AI to analyze sensor data, predict breakdowns, and avert accidents. It's a revolution that promises to elevate AI-powered automation in manufacturing from a $1.1 billion industry in 2020 to a staggering $16.7 billion by 2026 in India, marking a remarkable compound annual growth rate (CAGR) of 57 percent. The manufacturing sector in India plays a substantial role in the nation's economic landscape, contributing to 17% of India's GDP in the year 2023. This industry is marked by notable achievements in international trade, with manufacturing exports hitting an all-time high of US$ 447.46 billion during FY23. This signifies a remarkable 6.03% growth compared to the previous fiscal year (FY22), which had recorded exports of US$ 422 billion.

## Manufacturing Export Growth

| 2022 | 2023 | Growth Rate |
|------|------|-------------|
| USD 433 Billion | USD 447.46 Billion | 6.03% |

India's manufacturing sector is on a path of transformation, fueled by growing opportunities for investment and trade. The gap between demand and supply is driving the need for expanded manufacturing capacities. This industry has long been recognized as one of the fastest-growing segments of the economy,

contributing to 16-17% of India's GDP even before the pandemic.

An observable shift toward more automated and process-driven manufacturing processes is underway in India. This evolution has amplified the demand for high-end equipment and machinery, reflecting the sector's commitment to technological advancement. Challenges abound in the Indian manufacturing landscape, encompassing a price-conscious market, underdeveloped infrastructure, and supply chains, and a tendency toward labor-intensive processes due to the accessibility of low-cost labor. Balancing the cost-effectiveness of production methods with investments in technology is an ongoing endeavor for manufacturers. The Indian government holds ambitious objectives for the manufacturing sector, striving to elevate its contribution to GDP significantly. The goal is to achieve an unprecedented 25% share of GDP by 2025, surpassing the current standing of below 16%. This strategic effort coincides with a global shift where manufacturing giant China is transitioning toward consumption-led growth.

To address the evolving landscape of manufacturing, the industry is adapting to new technologies and practices. Precision farming, involving the use of sensors, data analytics, and artificial intelligence to optimize production, is gaining prominence. Additionally, the adoption of biosecurity measures is enhancing disease prevention, and securing the integrity of the manufacturing processes. In summary, India's manufacturing sector is a powerhouse within the national economy, fostering remarkable growth in international trade and striving for greater economic significance. The industry's drive to embrace innovation and meet evolving challenges reflects its commitment to ongoing improvement and growth, with technology and best practices driving progress in this dynamic landscape.

AI's presence in manufacturing isn't just a statistic; it's a catalyst for change. This paradigm shift is poised to create new vistas of opportunity in India, particularly in engineering, software development, and data analysis as well as other strategic business-centric roles in product marketing and innovation. Automation, driven by AI, is the driving force behind this transformation, reshaping the very foundations of how products are crafted. Quality control, once reliant on human diligence, now stands enhanced and consistent, delivering products of unparalleled quality that resonate with ever-evolving consumer preferences.

But this transformation is not without its challenges. Labor-intensive roles in manufacturing are facing the prospect of displacement as machines take on challenging tasks. However, this isn't a story of job loss; it's a narrative of job creation and innovation. The horizon reveals a host of new roles, beckoning engineers, software developers, and data analysts into the fold.

These roles aren't mere adaptations; they're the architects of a future where quality reigns supreme, cost-efficiency is the norm, and competitive pricing is the industry's lifeblood, ensuring that the manufacturing industry remains innovative and dynamic to adapt to imminent changes.

## 2. Customer Service: AI-powered Chatbots

The pulsating core of many businesses, customer service, is currently in the throes of an AI-driven revolution, spearheaded by chatbots. According to a report by RedSeer Consulting in 2023, the Indian chatbot market is poised for remarkable growth, with a projected CAGR of 31% from 2021 to 2026. These AI-powered chatbots are swiftly becoming the linchpin of the customer service industry in India, aimed at elevating customer satisfaction and slashing response times. This transformation isn't just about evolution; it's an engine for job creation, giving rise to new roles in engineering, software development, data analytics, and quality control.

**DATA POINTS**
**(ADOPTION RATE VS IMPACT OF AI IN CUSTOMER SERVICE)**

**ADOPTION RATE OF AI IN CUSTOMER SERVICE ROLES ACROSS INDUSTRIES**

300% growth in AI adoption for customer service in India since 2019. (Source: Nasscom, 2023)

15% of customer service interactions are already powered by AI in India. (Source: Capgemini, 2023)

Projected: 50% of customer service interactions handled by AI by 2025. (Source: Deloitte, 2023)

**IMPACT OF AI ADOPTION IN CUSTOMER SERVICE**

1.2 million new AI-related jobs created in customer service by 2025. (Source: World Economic Forum, 2023)

70% of customer service jobs will evolve due to AI, requiring new skillsets. (Source: McKinsey Global Institute, 2023)

Focus shifting from repetitive tasks to soft skills like empathy and critical thinking. (Source: NASSCOM, 2023)

**ROLE OF PERSONALIZED AI ASSISTANTS IN CUSTOMER SERVICE**

80% of Indian consumers prefer personalized customer service experiences. (Source: PWC,

AI-powered chatbots handle 70% of basic customer inquiries in India. (Source: Accenture, 2023)

Virtual assistants are improving customer satisfaction by 25% in Indian service centers. (Source: Forrester, 2023)
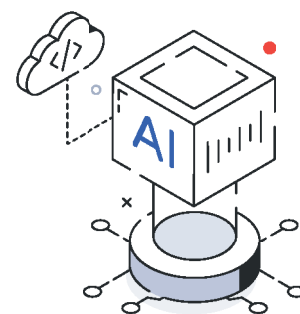
The advantages they bring are as clear as day. Round-the-clock availability ensures that customer support is at your service any time, day or night, and the rapid response times translate into a happier, more satisfied clientele. However, this transformation, like all innovations, isn't devoid of its challenges. As chatbots take on a more substantial share of customer inquiries, there's the inevitable prospect of some roles for customer service representatives facing displacement.

Yet, the future isn't one shrouded in gloom; it's a tapestry of promise and possibility. In the times to come, the customer service landscape will bear the hallmark of 24/7 availability, elevated customer satisfaction, and speedy responses, all seamlessly aligned with the ever-advancing frontiers of technological prowess.

## 3. Agri and Allied (Poultry): Ushering Sustainable Practices

In the agricultural sector, particularly in poultry farming, AI stands as a pivotal force, orchestrating an orchestra of efficiency and cost-cutting measures. AI-powered sensors have taken center stage in India's poultry industry, rewriting the rules of efficiency and cost reduction. These sensors, like skilled diagnosticians, monitor the health and behavior of chickens with a once unfathomable precision. This newfound capability empowers farmers to identify potential health issues at a pace previously unattainable and take swift corrective action. This remarkable stride in the poultry industry has the potential to rewrite its future, but it's not without its challenges. The shift towards AI-driven poultry

## Human and AI-Based Customer Service

| HUMAN SKILLS | | AI SKILLS | |
|---|---|---|---|
| **OVERLAP** | **DIVERGENCE** | **OVERLAP** | **DIVERGENCE** |
| **Communication:** Strong written and verbal communication skills for clear and empathetic interactions. | **Creativity:** Devising innovative solutions and personalized experiences beyond pre-programmed responses. | **Data analysis:** Processing and interpreting customer data to personalize interactions and predict needs. | **Machine learning:** Adapting and improving based on user interactions and data patterns. |
| **Problem-solving:** Ability to analyze customer issues, identify root causes, and present solutions. | **Intuitive understanding:** Grasping unspoken cues and building rapport through subtle interactions. | **Language processing:** Understanding and responding to natural language queries and instructions. | **24/7 availability:** Providing consistent support around the clock, regardless of holidays or time zones. |
| **Critical thinking:** Evaluating information, making sound judgments, and adapting to unexpected situations. | **Ethical decision-making:** Applying ethical principles to customer situations and navigating complex scenarios. | **Repetitive task automation:** Efficiently handling routine inquiries and tasks to free up human resources. | **Scalability:** Handling high volumes of customer requests efficiently and without human limitations. |
| **Emotional intelligence:** Recognizing and responding to customer emotions with empathy and understanding. | **Long-term relationship building:** Fostering trust and loyalty with customers over time. | **Multitasking:** Managing multiple customer interactions simultaneously while maintaining accuracy and efficiency. | **Integration with technology:** Seamlessly interacting with other systems and tools to provide a holistic customer experience. |

OVERLAP AND DIVERGENCE BETWEEN SKILLS NEEDED FOR HUMAN AND AI-POWERED CUSTOMER SERVICES

The future is etched with opportunities in engineering, software development, and data analysis, where the maintenance and enhancement of chatbots lay the foundation for a more vibrant and efficient customer service landscape.

management may indeed usher in some level of job displacement among manual laborers. Yet, the future isn't barren; it's a realm teeming with potential where emerging roles in the development and maintenance of cutting-edge AI systems paint a promising horizon, where agriculture and technology seamlessly intertwine.

As of 2023, a report by the National Bank for Agriculture and Rural Development (NABARD) casts a luminous projection for the poultry industry in India. With a forecasted CAGR of 12.6% from 2021 to 2026, it's poised for substantial growth and transformation. The Indian poultry industry, ranked as the fourth-largest

globally, boasts impressive production figures, with a total of 100 billion eggs and 4.2 million metric tons of poultry meat in the year 2021 has grown exponentially since.

This industry serves as a significant contributor to employment, offering livelihoods to both direct and indirect workers, with over 5 million people finding employment within its vast ecosystem. As the Indian poultry sector evolves, it's poised to create fresh employment prospects, particularly in fields like animal nutrition and metabolism, veterinary science, and animal welfare.

However, this industry is not without its challenges, particularly concerning the control of foodborne and zoonotic pathogens. Tackling these pathogens stands as a major concern for the Indian poultry industry. Furthermore, public health hazards emerge from the consumption of food containing high antibiotic residues, signifying a critical issue that needs careful management.



## FROM FARM TO FORECAST: HOW AI IS CHANGING THE WAY WE GROW FOOD IN INDIA

### DATA POINTS (IMPACT)

$17 billion potential economic impact of AI in Indian agriculture by 2025. (Source: CII, 2023)

15% increase in crop yields projected through AI-powered optimization. (Source: FICCI, 2023)

50% reduction in water and fertilizer usage achievable with AI-driven precision agriculture. (Source: ICAR, 2023)
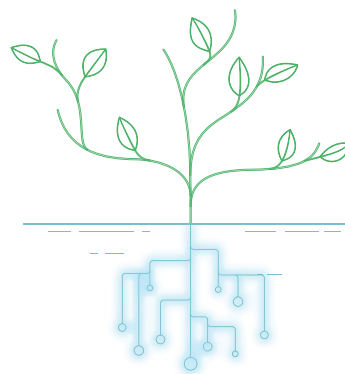
### IMPACT vs INNOVATION

AI-powered weather forecasting reduces crop losses by 20%. (Source: IBM, 2023)

Disease detection algorithms save farmers millions by identifying problems early. (Source: Microsoft Research, 2023)

Robotic automation is taking over labor-intensive tasks like weeding and harvesting. (Source: Mahindra & Mahindra, 2023)

To adapt to changing times, the Indian poultry industry is anticipated to transition towards sustainable agriculture practices. Challenges such as limited water resources and climatic shifts are expected to impact poultry production costs, necessitating strategic planning to align with per capita consumption trends. The adoption of cutting-edge technologies is evident in the sector's transformation, with precision farming practices being embraced. These involve the application of sensors, data analytics, and artificial intelligence to optimize poultry production.

In the pursuit of health and safety, the Indian poultry industry is also implementing biosecurity measures to safeguard against the introduction and spread of disease-causing organisms within poultry flocks. This dual commitment to technological advancement and health measures reflects the industry's dedication to providing quality poultry products to the Indian market while ensuring long-term sustainability.

In this tale of transformation, the poultry industry's future is not only about economic growth but about pioneering a new era of sustainable and technologically advanced agriculture. The poultry sector is hatching a plethora of diverse roles to oversee various aspects of this industry. Poultry farm managers, poultry nutritionists, poultry veterinarians, and poultry breeders are at the forefront of ensuring healthy and thriving flocks. Meanwhile, poultry processing plant managers, poultry sales and marketing managers, and poultry feed mill managers ensure that poultry products make their way to consumers efficiently. Poultry hatchery managers and poultry equipment sales and service managers work tirelessly behind the scenes to ensure a seamless poultry production cycle.

## 4. Retail: A Consumer-centric Marketplace

The retail industry has undergone a remarkable transformation through the infusion of AI, aimed at elevating customer experiences and optimizing operations. AI-driven chatbots have emerged as the frontline support for customer inquiries, liberating human workers to delve into more intricate tasks. While this transition might reshape traditional roles within retail, it simultaneously opens the gateway to a fresh wave of employment prospects in AI system development and maintenance.

As per a visionary 2023 report by RedSeer Consulting, the Indian e-commerce market is projected to soar

with a CAGR of 27% between 2021 and 2026. India's retail industry has been on an impressive growth trajectory, reflecting the nation's economic dynamism and shifting consumer preferences. With factors such as increasing disposable income, urbanization, and the burgeoning e-commerce sector, the Indian retail market has witnessed remarkable expansion. Projections indicate that by 2026, the Indian retail market is set to reach a staggering $1.75 trillion, driven by a compelling compound annual growth rate (CAGR) of 9.7% from 2021 to 2026. The e-commerce segment is no less remarkable, with expectations of a 27% CAGR within the same period, reaching an impressive $200 billion by 2026. Notably, the Indian retail industry plays a pivotal role in employment, second only to agriculture. Over 46 million people in India find employment within this vibrant sector, and it is anticipated that the industry will create an additional 25 million jobs by 2025. The retail landscape is not just expanding but evolving. There's a significant shift towards organized retail, with a projected CAGR of 20% from 2021 to 2026, and an increasing focus on omnichannel retail. Retailers are harnessing the power of both online and offline channels to reach customers effectively. Additionally, sustainability is gaining prominence in the Indian retail industry, with retailers adopting eco-friendly practices to reduce their environmental impact. These compelling statistics underscore the remarkable success of India's retail industry leading up to 2024, reflecting its vitality and adaptability in the face of evolving consumer trends and market dynamics.

# FROM CASHIERS TO CHATBOTS: HOW AI IS SHAPING THE FUTURE OF INDIAN RETAIL

## CX Transformation and Business Benefits

AI-powered chatbots handle 70% of customer service inquiries in online and offline stores. (Source: Capgemini, 2023)

Dynamic pricing algorithms optimize pricing strategies based on real-time demand and customer data. (Source: Accenture, 2023)

Smart inventory management systems predict demand and prevent stockouts, reducing waste and improving customer satisfaction. (Source: IBM, 2023)

Virtual try-on experiences using AR/VR technology enhance customer engagement and satisfaction. (Source: Deloitte, 2023)

Omnichannel integration powered by AI creates seamless shopping experiences across online and offline channels. (Source: NASSCOM, 2023)
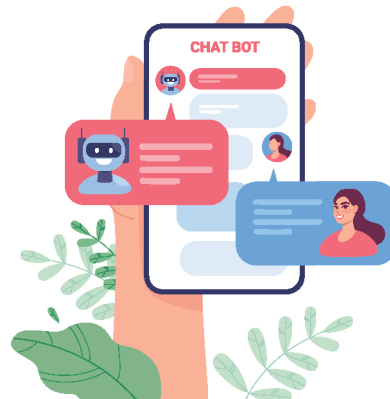
## DATA POINTS (BUSINESS BOON)

25% increase in retail efficiency and productivity with AI implementation. (Source: FICCI, 2023)

$10 billion potential cost savings for Indian retailers through AI by 2025. (Source: McKinsey Global Institute, 2023)

40% of Indian consumers prefer personalized shopping experiences powered by AI. (Source: PwC, 2023)

AI-powered recommendation engines increase conversion rates by 30%. (Source: Microsoft Research, 2023)

AI's imprint on the retail canvas in India is vivid, painting a picture of elevated customer experiences and streamlined operations. This journey is not without its challenges, as it may lead to job displacement for some traditional roles. However, the horizon gleams with promise, offering an array of opportunities in the development and upkeep of AI systems.

In the ever-dynamic world of retail, a symphony of emerging roles harmonizes with the changing landscape. E-commerce managers steer the ship of online stores, while digital marketing managers and social media managers mastermind brand prominence in the digital realm. Customer experience managers take up the role of virtuoso conductors, ensuring that shoppers embark on a seamless journey, while data analysts decode the intricate rhythms of consumer preferences. Logistics managers and supply chain managers choreograph the intricate ballet of bringing products from the shelf to the doorstep.

The retail industry isn't just evolving; it's composing a new tune where AI and human expertise dance in harmony, delivering a crescendo of enriched experiences for consumers.

# 5. Healthcare: Transforming the Lives of People

The healthcare sector, amidst rapid digital transformation, is giving birth to roles that beautifully bridge the realms of technology and patient care. AI, the technological powerhouse, is now at the heart of healthcare, poised to elevate patient outcomes and enhance cost-efficiency. AI-powered diagnostic tools have emerged as lifesavers, facilitating the early identification of health concerns and ushering in a new era of more effective treatments.

As outlined in a visionary 2023 report by the Indian Brand Equity Foundation (IBEF), the healthcare industry

The healthcare sector's growth is vividly illustrated by the expanding cohort of allopathic doctors, as the number of registered practitioners surged to 1.3 million in November 2021, up from 0.83 million in 2010. This surge in medical professionals aligns with the sector's robust trajectory and is continuing well into the year 2022-2023 where the medical profession is at the top of the mind for the increasing number of youth venturing into this field. Furthermore, India's healthcare market is set for substantial expansion, with projections anticipating it to reach US$367 billion by 2023 and a staggering US$638 billion by 2025. This surge is emblematic of the sector's status as one of the fastest-growing segments, buoyed by a conducive policy environment aimed at establishing the country as a global healthcare hub.

## FROM CHATBOTS TO ROBO-SURGEONS, TRANSFORMING HEALTHCARE DELIVERY

**DATA POINTS (LIFE-SAVING AI)**

15% reduction in healthcare costs achievable with AI by 2025. (Source: FICCI, 2023)

AI-powered diagnostics detect diseases 20% faster, improving early intervention rates. (Source: AIIMS, 2023)

Telemedicine powered by AI expands access to healthcare in rural areas. (Source: NITI Aayog, 2023)
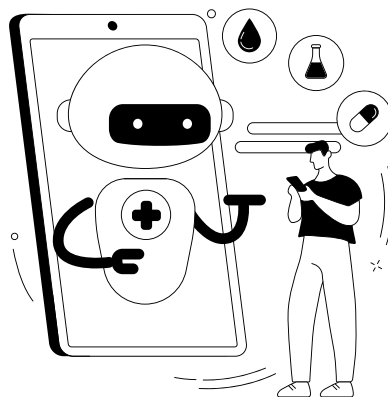
**Life-Saving AI vs Medical Assistance AI**

AI-powered chatbots handle initial consultations and triage patients efficiently. (Source: Microsoft Healthcare, 2023)

Machine learning algorithms analyze medical scans and diagnose diseases with high accuracy. (Source: Infosys, 2023)

Robotic surgery powered by AI assists surgeons with greater precision and minimally invasive procedures. (Source: Apollo Hospitals, 2023)

in India is poised to grow with an impressive CAGR of 22% between 2021 and 2026. This growth demands a workforce adept in the emerging technologies that are set to reshape patient care and healthcare operations. India's commitment to healthcare is evident in its evolving expenditure, which witnessed a notable increase. In FY23, the public expenditure on healthcare surged to 2.1% of GDP, compared to the 1.6% reported in

FY21, as per the Economic Survey 2022-23. This financial reinforcement is further underscored by the Indian government's allocation of Rs. 89,155 crore (US$ 10.76 billion) to the Ministry of Health and Family Welfare (MoHFW) in the Union Budget 2023-24. With augmented financial backing, the Indian healthcare landscape is undergoing a significant transformation.

The healthcare system, however, grapples with significant challenges, primarily a growing burden of non-communicable diseases. This shift necessitates a transformation in the healthcare landscape, which is unfolding through initiatives like Ayushman Bharat, encompassing the National Health Protection Scheme (Pradhan Mantri Jan Arogya Yojana) and the Health and Wellness Centers. An essential facet of this evolving system is the prominent role of technology. Telehealth is becoming increasingly significant, with a remarkable 556% increase in telehealth visits between March 11 and April 22, 2020, primarily spurred by the COVID-19 pandemic. This success has however resulted in the growing focus on emerging technologies for healthcare and the widespread acceptance to adopting new and refined means of healthcare. This trend underscores the integration of digital technology to

enhance healthcare outcomes, marking a pivotal shift in the Indian healthcare landscape.

India's healthcare sector is on a path of considerable transformation, characterized by increased financial allocations, a burgeoning cohort of healthcare professionals, and a robust market projection. These developments align with the evolving landscape of healthcare technology, amplifying the prospects for healthcare professionals and innovators in India's dynamic healthcare ecosystem. In the future, healthcare will be synonymous with early diagnosis, cost reduction, and uncompromised quality care. This bright horizon unveils a multitude of employment opportunities focused on AI system maintenance and development. Medical data analysts and health informatics specialists occupy the cutting edge of healthcare data, extracting invaluable insights. Telemedicine technicians and medical transcriptionists make remote patient care seamless, while medical coders and medical billing specialists ensure that the financial gears of healthcare run smoothly. Health information managers and health IT project managers architect the digital evolution of healthcare.

The field of healthcare is not merely evolving; it's orchestrating a symphony where the integration of AI and human expertise harmonize to create a healthcare landscape that's not only accessible but profoundly efficient.

# 6. Information Technology (IT): India's Technological Odyssey

The IT industry in India, as illuminated by a prescient 2023 report from the National Association of Software and Services Companies (NASSCOM), is on an upward trajectory, poised to grow with a commendable CAGR of 7.7% between 2021 and 2026. In this digital renaissance, AI takes center stage, catalyzing improved efficiency and cost reduction. AI's magic is witnessed in the automation of routine tasks, setting human workers free to focus on the intricacies of the rapidly evolving digital landscape and the demands of its users.

This shift, while potentially restructuring traditional IT roles, ushers in a new era with a proliferation of roles dedicated to the adoption, development, and maintenance of AI systems. The Indian IT landscape is a living,

breathing organism, with its talent magnetically attracting foreign investments and opportunities for innovation. Emerging roles in AI-driven innovation are steering India toward a future empowered by AI, ensuring that its implications are not only sustainable but also ethically guided for the benefit of technology users.

Within this dynamic transformation, artificial intelligence (AI) researchers and machine learning engineers dive into the boundless realms of AI and cognitive systems. Data scientists become modern-day alchemists, transmuting data into actionable insights for businesses to make informed decisions on time. Cloud architects are the master builders of a robust infrastructure designed to withstand the demands of a rapidly modernizing world and help scale the digital India that's growing with each passing day. Cybersecurity analysts stand as vigilant guardians of digital fortresses, while full-stack developers bridge the front and back ends of digital experiences, ensuring technology is both accessible and secure for users.

DevOps engineers bring the symphony of software development to its zenith, orchestrating efficiency in every note. Blockchain developers explore the uncharted waters of decentralized ledgers, revealing a future where the very nature of commerce aligns with the consumption patterns of tech-savvy users. UX designers emerge as the artists of user-friendly interfaces, crafting digital spaces where this technology effortlessly blends into our lives. In this ever-evolving IT landscape, India is poised to chart a steady course toward a future powered by AI, where technology is a force for good and innovation reigns supreme.

# 7. Logistics & Transportation: Navigating the Future with Machines

In today's ever-evolving world, the realm of transportation is on the cusp of a profound transformation. Self-driving cars and trucks, once relegated to the realm of science fiction, are now poised to take the wheel. This isn't a vision of some distant future; it's a reality unfolding before our eyes. The advantages of this paradigm shift are undeniable – a significant boost in safety, with the potential to drastically reduce accidents and elevate road safety to new heights. Furthermore, it offers the gift of enhanced efficiency, where autonomous vehicles become virtuoso route optimizers, resulting in reduced fuel consumption and remarkably lowered transportation costs. Furthermore,

the advent of electric vehicles has spawned a new revolution in the heart of India's consumers, with more manufacturers entering the market with affordable models that lead up to the EV culture that is revered in the heart of urban and rural India alike.

In parallel, the logistics industry is harnessing the power of AI to elevate operational efficiency and pare down costs. AI-driven predictive analytics stand as sentinels, vigilantly optimizing supply chains, thereby curbing waste and fine-tuning delivery schedules. While this digital transformation may displace some manual labor roles, it simultaneously births opportunities in the sphere of AI system development and maintenance. According to a 2023 report by the Federation of Indian Chambers of Commerce and Industry (FICCI), the logistics industry in India is primed to soar with a commendable CAGR of 10.5% between 2021 and 2026. Logistics and supply chain management are in the midst of a technological revolution, a transformation that promises to catapult India into a future brimming with innovation.

As this shift unfolds, it will undoubtedly lead to job displacement for certain roles. However, it concurrently carves out fresh avenues of employment in the dynamic and evolving field of logistics and transportation management. Supply chain analysts and logistics analysts are at the forefront, adeptly optimizing the flow of goods. Warehouse managers, transportation managers, and freight forwarders stand as custodians of the efficient movement of products, ensuring that the gears of commerce continue to turn seamlessly. Customs brokers, the international trade navigators, play a pivotal role in facilitating global transactions, while procurement managers guarantee a steady influx of supplies. Inventory managers and operations managers are the unsung heroes, working tirelessly to ensure that every cog in the wheel functions harmoniously. The growth of AI and automation in this industry will undoubtedly pave the way for exciting job opportunities in engineering, software development, and data analysis. Thus, it ensures a thriving job market in the field of self-driving vehicle development and maintenance, marking the onset of a transformative era in transportation. Are optimized routes and autonomous cars the answer to the problem of traffic in India? Or does sustainable infrastructural development and access to these cutting-edge resources for a majority of India's citizens play the role of digital acceleration in the future?

## 8. Hospitality: Elevating Guest Experiences through AI

The realm of hospitality, where each guest's experience is of paramount importance, is undergoing a profound transformation, underpinned by the remarkable capabilities of artificial intelligence. AI-driven chatbots now stand as digital concierges, efficiently addressing customer inquiries, thus freeing the human staff to direct their attention toward the intricate and personalized aspects of guest satisfaction. This transition, although affecting traditional roles within the hospitality sector, is not a tale of job displacement but a narrative of evolution, with new opportunities emerging in the realm of AI system development and maintenance.

In this vibrant industry, a plethora of roles is dedicated to ensuring that every guest enjoys an exceptional and memorable experience. Revenue managers are the maestros of pricing and occupancy, adeptly optimizing to strike the perfect balance. Guest experience managers craft every visit into a treasured memory, ensuring that guest satisfaction knows no bounds. Digital marketing managers and social media managers are the architects of a compelling digital presence, amplifying the allure of hospitality brands. Event managers play the role of orchestrators, crafting unforgettable gatherings and experiences. Food and beverage managers curate culinary delights that tantalize the taste buds, creating moments that linger in memory. Meanwhile, the hotel operations managers are the unsung heroes, ensuring that every facet of the establishment runs seamlessly, like a well-choreographed symphony.

According to a 2023 report by the Indian Brand Equity Foundation (IBEF), the hospitality industry in India is poised for remarkable growth, with a projected CAGR of 16% between 2021 and 2026. This growth isn't a solitary event but a part of a more extensive narrative of transformation, where technology harmoniously blends with the art of hospitality. AI and automation are the catalysts, breathing life into new and exciting roles in the industry, ensuring that guest experiences are not just memorable but transcendent.

AI's reach in hospitality doesn't end with chatbots; it extends to personalized guest recommendations, energy management for sustainable operations, and even predictive maintenance to preemptively address maintenance issues, all orchestrated to make each guest's stay a remarkable and unforgettable experience.

## 9. Banking, Finance, and Insurance (BFSI): Revolutionizing Access to the Economy

The integration of artificial intelligence is reshaping the landscape of Banking, Financial Services, and Insurance (BFSI), focusing on enhancing efficiency and driving cost reduction. The introduction of AI-powered fraud detection tools has revolutionized how banks proactively identify and combat potential fraudulent activities, thereby minimizing losses. This shift not only influences the traditional BFSI roles but also opens new horizons in AI system development and maintenance.

As per a 2023 report by the Indian Brand Equity Foundation (IBEF), the BFSI industry in India is on a path of substantial growth, projecting a CAGR of 8.1% from 2021 to 2026. This growth isn't just a statistic but a testament to a vibrant ecosystem where technology, data, and risk management converge to unlock remarkable possibilities. The total addressable market for the Indian fintech industry is projected to reach a staggering $1.3 trillion by 2025, with assets under management poised to attain $1 trillion and revenue projections reaching $200 billion by 2030. Furthermore, the payments landscape in India is hurtling toward a monumental achievement, with an anticipated $100 trillion in transaction volume and $50 billion in revenue by 2030, underscoring the transformative role of fintech in reshaping the financial arena.

The cross-border payments sector in India presents a colossal opportunity for domestic fintech players, with a projected revenue potential of $65 billion by 2030. India is making its presence felt on the global fintech stage, securing an impressive 14% of the total global fintech funding and ranking second in terms of deal volume. The years 2021 and 2022 witnessed remarkable milestones, with over $19 billion of fintech funding and the emergence of 18 fintech unicorns, a testament to the sector's rapid evolution. Indian fintechs have played a pivotal role, contributing to an enterprise value of approximately $100 billion, compared to the broader financial services industry's overall enterprise value of $1.4 trillion in 2021.

The introduction of the Unified Payments Interface (UPI) in India has been a game-changer for the fintech industry. UPI transactions have experienced an exponential surge, skyrocketing from 0.1 billion in December 2016 to an astounding 3.5 billion in August 2022. This underscores the transformative impact of UPI in promoting digital transactions and financial inclusion.

The increased adoption of UPI has led to the creation of new job roles in engineering, software development, and data analysis, further fueling the growth of the fintech sector. The Indian fintech landscape is not only reshaping the financial industry but is also poised to play a pivotal role in advancing financial inclusion and driving digital adoption, ultimately leading to substantial social impact in the future.

In the world of finance, insurance, and banking, emerging roles are at the forefront, focusing on data and risk. Data analysts serve as architects of insights, delving into extensive datasets to extract valuable information. Risk analysts stand as guardians, tirelessly working to mitigate potential financial hazards. Investment bankers, the modern navigators of complex financial markets, guide clients through the ever-changing economic landscape. Financial analysts decode economic trends and offer strategic financial advice. Wealth managers provide clients with guidance and strategies for financial success. Insurance underwriters assess risks, establish underwriting terms, and calculate premium rates. Actuaries delve into statistical probabilities, a critical asset in the insurance and pensions sectors. Compliance officers ensure regulatory adherence, guaranteeing that operations stay within legal boundaries. Credit analysts evaluate the creditworthiness of individuals and businesses, facilitating sound lending decisions.

Yet, the transformation we witness today is only the beginning of a sweeping revolution. While traditional roles, such as those in fraud detection and risk assessment, may undergo reconfiguration, this isn't a tale of decline; it's a journey of transformation. The future holds the promise of agile finance, where swift fraud detection, precise risk assessment, and informed financial planning are the standard. This dynamic shift is accompanied by the emergence of new roles, ensuring that the benefits of this AI-powered trend are maximized by a highly strategic workforce, making BFSI a thriving hub of innovation and excellence.

## 10. Media and Entertainment: Serving Happiness to Billions

The media and entertainment industry in India is harnessing the power of AI to elevate customer engagement and enhance cost-effectiveness. AI-driven recommendation engines are playing a pivotal role in personalizing content for consumers, leading to increased audience engagement. While this technological shift may bring about changes in certain job roles

within the industry, it simultaneously opens up new opportunities in the field of AI system development and maintenance.

As per a 2023 report from the Indian Brand Equity Foundation (IBEF), India's media and entertainment sector is poised for impressive growth, with a projected Compound Annual Growth Rate (CAGR) of 13.5% from 2021 to 2026. This substantial expansion is driven by a confluence of factors, including the evolving preferences of consumers, the broadening accessibility to the Internet, and the advent of cutting-edge technologies.

In 2022, the Indian media and entertainment sector reached record-high revenues, with virtually every segment experiencing robust growth, spanning both traditional and emerging media channels. The advertising industry in India, for instance, witnessed a remarkable 19% growth, crossing the INR 1 trillion mark in 2022. Simultaneously, subscription-based services expanded by 13%. Notably, the Indian television industry is expected to remain the largest segment, projecting a CAGR of 7%, which is set to propel its valuation to INR 847 billion (equivalent to US$ 12.01 billion) by the end of 2023.

The digital landscape, particularly in the realm of mobile gaming, is a beacon of tremendous potential, with the Indian mobile gaming market poised to achieve a value of $7 billion by 2025. The domains of music, radio, and podcasts have witnessed remarkable growth, reaching revenues of $1.1 billion in 2022, with projections indicating further growth to $1.5 billion by 2027. The Indian digital media segment, representing the second-largest sub-segment in media and entertainment, expanded at an impressive rate of 30% in 2022, ultimately reaching $6.9 billion.

Additionally, the online gaming market in India recorded a remarkable 34% growth in 2022, culminating in a valuation of $1.6 billion by the beginning of 2023, and is expected to continue its upward trajectory to reach $2.8 billion by 2025. The realm of internet advertising in India stands out as one of the fastest-growing globally, demonstrating a remarkable 35.3% growth rate.

The burgeoning popularity of over-the-top (OTT) platforms is reshaping the landscape, with this sector expected to exhibit a compelling CAGR of 28.6% from 2021 to 2026, reaching a substantial valuation of $14.3 billion by 2026. Similarly, the animation and VFX industry are poised for substantial growth, with a projected CAGR of 18.5% from 2021 to 2026, ultimately reaching a valuation of $2.9 billion in 2026. The Indian government

has further bolstered the industry's potential by increasing the Foreign Direct Investment (FDI) limit from 74% to 100% in the media and entertainment sector and through initiatives aimed at establishing a National Centre of Excellence for AVGC (animation, visual effects, gaming, and comics).

In summary, the media and entertainment industry in India is undergoing a dynamic evolution, driven by the changing preferences of consumers, increased access to the internet, and the integration of cutting-edge technologies. This sector is not only set to create numerous job opportunities, particularly in fields like animation, VFX, and gaming but also presents an exciting landscape for IT professionals as it embraces transformative technologies such as OTT and digital platforms. Social media managers and digital marketing managers play a pivotal role in shaping online presence, while content creators and video editors craft compelling narratives. Sound engineers ensure top-notch audio quality, and graphic designers along with animators create visually stunning content. Web developers, in turn, bring digital experiences to life, and UX designers prioritize user-friendly design, enhancing the overall user experience.

## Understanding the AI Revolution in Determining the Future of Work in India

In the vibrant landscape of India's employment ecosystem, the emergence of Artificial Intelligence (AI) stands as a formidable force, unveiling a captivating narrative of both innovative vistas and the profound transformation of established roles. As we delve into the enigmatic world of AI's influence, it's crucial to recognize the imperative importance of comprehending its impact on the future of work. This section unravels key statistics that underscore the sweeping changes in how traditional roles are being reshaped, offering a glimpse into the evolving landscape of the Indian workforce preparing for the widespread adoption of AI. Let's take a look at some predictions that highlight the emergence of an AI-powered future in India.

## AI's Impact on India's Workforce: A Transformative Journey

India's forward-looking approach to AI adoption is striking. It is expected to be among the top five nations globally in terms of AI implementation. With an estimated 45% of Indian companies planning to embrace

AI by 2023, the nation is positioned at the forefront of AI integration.

The Indian government, recognizing the transformative potential of AI, has launched the National AI Strategy, charting a visionary path to establish a $1 trillion AI industry in India by 2035. This strategic move underscores the government's commitment to fostering AI growth and development on a colossal scale. The AI industry in India is on an upward trajectory, marked by exponential growth. Predictions indicate that the AI services market in India alone will witness a remarkable Compound Annual Growth Rate (CAGR) of 33.1% from 2021 to 2026, culminating in a substantial market size of USD 12.16 billion by 2026. This surge reflects the increasing demand for AI-driven solutions across sectors. The influence of AI on employment is a nuanced story. By 2020, the Indian AI industry had already been expected to create 2.3 million jobs while simultaneously eliminating 1.8 million jobs, resulting in a net increase of 500,000 jobs leading up to 2023. This transformation illustrates the changing nature of work, with AI augmenting certain roles while automating others as witnessed in the succeeding years, where more job roles are continuously being created and newer implications of AI make way to workplaces across the world.

## What Indian Industrialists Say About the Impact of AI?

• Stability AI CEO Emad Mostaque said that most of India's coders will lose their jobs as the effects of AI mean that it is now possible for software to be developed with far fewer people. "I think that it affects different types of jobs in different ways," Mostaque said on a call with analysts at the Swiss investment bank last week. In India, Mostaque said, "Outsourced coders up to level three programmers will be gone in the next year or two, whereas in France, you'll never fire a developer."

• V Kamakoti, head of India's AI task force and faculty at IIT- Madras, said, "Wherever there is a decision-making process, AI certainly has a role to play, and help in making better decisions. If a proper decision is made, life quality will improve, and that will help to address the socio-economic challenges. So in the Indian context, AI is a problem solver than a wealth generator."

• Ratan Tata, Chairman Emeritus of Tata Sons, said, "AI is going to be the next big thing. It is going to be the next industrial revolution. It is going to be the next internet. It is going to change the way we live, work, and relate to one another."

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• Mukesh Ambani, Chairman of Reliance Industries, said, "AI is going to be the defining technology of our times. It is going to be the driver of new waves of productivity growth, and it will help India leapfrog to the forefront of the global economy."

• Nandan Nilekani, co-founder of Infosys and former Chairman of the Unique Identification Authority of India, said, "AI is going to be a game-changer for India. It has the potential to transform every aspect of our lives, from healthcare to education to agriculture."

## Why is AI the Focus of Industrialists Today?

The ripple effect of AI extends across diverse sectors. The Indian manufacturing industry is poised to gain significantly from AI adoption, with an anticipated financial benefit of $500 billion, already by 2023. Meanwhile, the healthcare industry stands as one of the largest beneficiaries, with estimated savings of $6 billion as early as 2021, a trend that shows no sign of slowing owing to the accelerated adoption and innovation in AI for healthcare. The banking and financial services industry is also embracing AI, with expected savings of $7.5 billion by the end of 2023, and the retail sector anticipates savings of $3.6 billion by the same year. Furthermore, the IT industry is set to witness substantial benefits, with projected savings of $1.5 billion by 2023, underscoring AI's relevance across the spectrum of India's economy. All the resources saved can be directed to strategic efforts in expanding innovation across industries, reducing costs, and positioning products and services for increased accessibility and utility to consumers across the nation. AI also transforms complex work performed only by humans, into automated and efficient workflows, empowering increased collaboration, and strategic thinking, and saving tonnes of time, energy, and resources in the process.

The Indian government's commitment to AI is evident through substantial investments. The Department of Science and Technology has allocated INR 1,000 crore ($150 million) for AI research in 2023, reinforcing India's dedication to AI advancement. As this transformative wave surges forward, education and training take center stage. The launch of the National Programme on Artificial Intelligence in Education reflects the
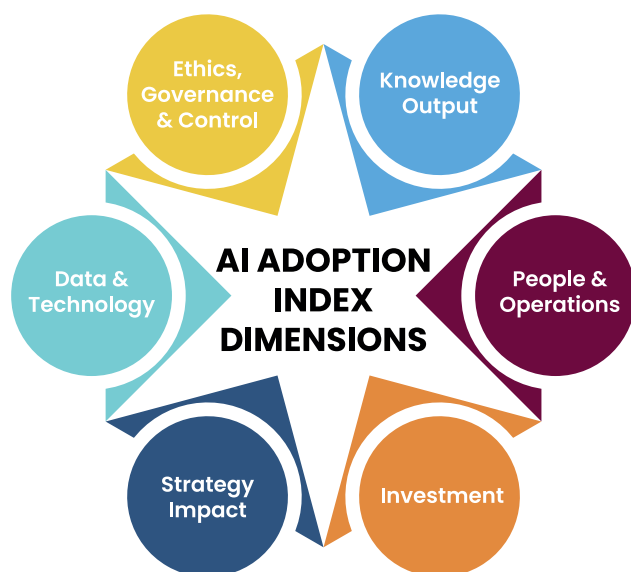
government's resolve to empower the workforce, ensuring it is aptly prepared for the AI-driven future. This journey of transformation finds its most profound expression in the realm of employment, with the AI industry poised to open new horizons by making jobs of the future more accessible to India's vast youth. Fields such as data analysis, programming, and AI research and development are set to offer boundless opportunities for skilled IT professionals. Yet, the ascent of AI is not without its complex challenges. The potential for job displacement is a looming reality, emphasizing the critical need for robust training and education to adapt to this rapidly evolving employment landscape. In this dynamic landscape of India's employment sector, AI is not just a theoretical construct but an actionable strategy, that if harnessed for the collective good could bring prosperity to people from all walks of life, in all corners of the nation.

## A Catalyst for Economic Growth

Statistics reveals that a substantial 57% of Indian executives are proactively steering their organizations towards an advanced AI adoption, further accelerating the demand for highly skilled professionals across industries. This keen interest from the corporate leadership underscores the tangible potential AI holds to shape the future of work and industry. AI's success story within Indian businesses isn't just a matter of corporate interest; it's intertwined with the nation's economic growth. Successful AI integration within Indian enterprises could consistently contribute an impressive ~1.4 percentage points to the real GDP growth. This isn't just about adopting technology; it's about fueling economic growth and fostering a sustainable future for the country. As AI cements its role in the future of work, it necessitates a transformative approach to skills development and creating awareness about the possibilities for innovation with AI. To harness the full potential of AI, the top 500 Indian companies alone will require a staggering 1 million hours of training. This education spans a spectrum of skills, including upskilling mid and senior-level management on the business aspects of AI, digital transformation, and Agile ways of working. These crucial hours invested in upskilling are a testament to the strategic commitment required to embrace AI effectively and have emerged as the central focus of various government-led and private partnerships aimed at skilling the youth for the future of work. The AI industry's transformative potential is mirrored in the surging demand for advanced practitioners of Artificial Intelligence and Machine Learning (AIML). To optimize the benefits that AI promises, the

top 500 Indian companies are projected to need between 25,000 to 30,000 advanced AIML practitioners. This signifies the profound impact AI has on job requirements, necessitating specialized skills for a workforce that is aligned with the evolving landscape of the future of work.

While AI's potential is boundless, it also presents substantial challenges. These challenges underscore the importance of maintaining an equilibrium between the opportunities and the responsibilities AI carries. The need for adequate training and education is paramount to ensure that the workforce remains adaptable in the face of the ever-changing job market. This serves as a reminder to businesses and policymakers to exercise restraint, ensuring that AI is employed ethically and responsibly as it shapes the future of work. As the realms of business and technology converge to redefine the future of employment, employability, and efficiency in Indian industry, the findings in this year's report underscore the pivotal role that AI plays in our lives today. The commitment of Indian executives, the economic benefits AI brings, the educational investments required, and the demand for skilled practitioners are all part of this narrative, as we prepare for a future powered by Artificial Intelligence. It is a path that demands thoughtful navigation, wherein people, businesses, and policymakers embrace AI's transformative potential with ethical responsibility, paving the way for a dynamic, AI-empowered future where both continuity and creativity flourish.



AI ADOPTION INDEX DIMENSIONS: Ethics, Governance & Control; Knowledge Output; People & Operations; Investment; Strategy Impact; Data & Technology

# THE ROLE OF AI IN RESHAPING THE SKILLS

The integration of Artificial Intelligence (AI) emerges as a transformative force, not only shaping industry landscapes but also unlocking unprecedented opportunities for skilling and employment. The Indian government's forward-thinking initiatives, including the Skill India campaign, the vision to establish AI centers of excellence, and the commitment to upskill 625,000 IT professionals through the Digital India campaign, underscore a strategic move towards leveraging AI for national progress.

The promising synergy of market potential, robust government support, a skilled workforce, and sector-specific opportunities positions India at the forefront of global AI leadership. In this section of the India Skills Report (ISR), we delve into the future of skilling in India, propelled by the exponential growth of AI. As we explore the transformative potential of AI, our focus extends beyond urban centers, embracing rural development through strategic skilling initiatives. The data presented here unveils the immense promise AI holds, projecting the addition of 4.6 million full-time jobs to India's economy over the next five years. This section is not just a glimpse into the future; it's a reflection of India's need to equip its workforce with the skills necessary to harness the potential of AI, ensuring inclusive growth and positioning the nation as a global leader in this transformative technology.

## Navigating the Technology Demand: Skills Shaping the Future

As we venture further into the technological landscape that defines the future of work, the demand for specific tech skills becomes increasingly pronounced. Quess Corp's insightful report sheds light on the core competencies steering 78% of hiring demands across industries in India, with development roles taking center stage. Intriguing revelation surfaces – full stack skills exhibit a consistent upward trend, particularly resonating within the consulting, automotive, banking, and telecom sectors.

Today, the IT job market in India is abuzz with opportunities, with roles like data scientists, DevOps engineers, cloud architects, big data engineers, full stack developers, IoT solutions architects, blockchain developers, and artificial intelligence (AI) engineers taking the lead. The landscape of tech skills evolves rapidly, and looking ahead to 2024, mastering data science, cloud computing, AI, DevOps, blockchain, robotic process automation (RPA), augmented reality (AR), virtual reality (VR), and cybersecurity emerges as crucial.

Despite the surge in demand for AI skills globally, India has witnessed a decline of over 60% in AI job openings in the past year, with approximately 1,100 positions available. The silver lining, however, lies in the nation's commitment to upskilling initiatives, aiming to elevate the existing professional talent to meet the evolving demands of AI. While North America and Europe may currently lead in AI skills concentration, India's relentless efforts to equip its youth and professionals with AI expertise spark optimism. With an expected boom in the Indian AI industry, projected to reach USD 28.8 billion by 2025, there's a pivotal shift towards nurturing engineering and manufacturing talent for the industry's future demands.



## Identifying Key Skills for the AI Era

Due to the rapid advancement of AI, there is an increasing demand for professionals with the skills to develop, implement, and manage AI solutions. A multifaceted approach combining theoretical learning, practical application, and community engagement is pivotal. Continuous learning through online courses, hands-on projects, and active participation in AI communities ensures candidates are well-prepared for the dynamic landscape of AI and its evolving skill requirements.Here are some of the most in-demand skills in India for the AI era:

## Foundational Skills

As we venture further into the technological landscape that defines the future of work, the demand for specific tech skills becomes increasingly pronounced. Quess Corp's insightful report sheds light on the core competencies steering 78% of hiring demands across industries in India, with development roles taking center stage. Intriguing revelation surfaces – full stack skills exhibit a consistent upward trend, particularly resonating within the consulting, automotive, banking, and telecom sectors.

**1. Programming :** Strong programming skills in Python, R, and Java are essential for developing AI algorithms and applications. According to a report by Teamlease, there were 45,000 job openings in India last month for artificial intelligence (AI) roles, with data scientists and machine learning (ML) engineers being the top careers. Individuals aspiring to excel in AI can engage in online coding platforms, participate in open-source projects, and enroll in coding boot camps. Collaborating on GitHub, solving real-world problems, and contributing to AI communities are effective ways to enhance programming expertise.

**2. Data Analysis :** Expertise in data analysis tools and techniques, such as SQL, Hadoop, and Spark, is crucial for handling and extracting insights from large datasets. The top 5 skills needed to excel in the area of Data Science and Artificial Intelligence are Python or R programming language, SQL, Hadoop, and Spark. To hone data analysis skills, candidates can leverage online courses on platforms like Coursera and edX. Participating in Kaggle competitions, working on personal data projects, and seeking internships that involve data analysis provide practical experience and contribute to skill development.

**3. Machine Learning :** Familiarity with machine learning concepts and algorithms, such as supervised learning, unsupervised learning, and reinforcement learning, is necessary for building AI models.Machine learning engineering is one of the top AI careers in India, and the demand for AI professionals proficient in scripting languages is rising. Enrolling in specialized machine learning courses, such as those offered by Stanford University on platforms like Coursera, and exploring resources like TensorFlow and PyTorch documentation enhance machine learning skills. Applying machine learning to real-world projects helps reinforce theoretical knowledge.

**4. Mathematics and Statistics :** A strong foundation in mathematics and statistics is essential for understanding the theoretical underpinnings of AI and machine learning.Linear algebra and statistics are among the top skills required to make a career in AI. Online platforms like Khan Academy and MIT OpenCourseWare offer comprehensive courses in these subjects. Additionally, candidates can practice mathematical problem-solving on platforms like Project Euler and leverage statistics tools in data projects.

**5. Problem-solving and Critical Thinking :** The ability to analyze complex problems, identify patterns, and develop creative solutions is crucial for success in the AI field. Critical thinking and problem-solving are among the most in-demand skills for AI in 2024. Engaging in AI hackathons, participating in coding challenges on platforms like LeetCode, and collaborating on AI research projects foster problem-solving abilities. Regularly tackling algorithmic problems and discussing solutions with peers in AI communities contribute to honing critical thinking skills.

## Specialized Skills

As AI continues to evolve, the demand for these skills will only grow. Individuals who possess these skills will be well-positioned for success in the AI era and can contribute significantly to the development and application of AI solutions that benefit society. Some specialized skills that will contribute to the development of AI and shape the dynamics of emerging career roles are:

**1. Natural Language Processing (NLP) :** Expertise in NLP techniques is essential for developing AI applications that can understand, process, and generate human language. According to industry survey findings highlighting the growth of AI skills by Simplilearn, NLP is one of the top skills required for a career in AI, with a 2022 growth rate of 25%. Enroll in online courses, attend workshops, and engage in hands-on projects to build practical NLP skills. Leveraging open-source NLP libraries and contributing to relevant communities can enhance proficiency.

**2. Computer Vision :** Skills in computer vision are required for developing AI applications that can analyze and interpret visual data, such as images and videos. Computer vision is one of the top skills required for a career in AI, with a 2022 growth rate of 23%. Participate in computer vision courses, utilize platforms like TensorFlow and OpenCV, and engage in real-world

projects. Stay updated on the latest advancements in image recognition, object detection, and video analysis.

**3. AI Ethics and Bias :** Understanding the ethical implications of AI and developing strategies to mitigate bias is crucial for responsible AI development and deployment. AI ethics and bias mitigation are critical skills for AI professionals, with a 2022 growth rate of 20%. Take courses in AI ethics, participate in discussions on bias mitigation, and stay informed about ethical guidelines. Actively engage with case studies and collaborate with professionals in the field to deepen understanding.

**4. AI Project Management :** The ability to manage complex AI projects, including requirements gathering, team coordination, and risk assessment, is essential for successful AI implementation. AI project management is a key skill for AI professionals, with a 2022 growth rate of 18%. Pursue project management certifications, gain hands-on experience through internships, and develop proficiency in AI project management tools. Foster strong communication and coordination skills to navigate multifaceted AI initiatives.

**5. Domain Expertise :** In addition to technical skills, having expertise in a specific domain, such as healthcare, finance, or manufacturing, can provide a significant advantage in the AI field. Domain expertise is a valuable skill for AI professionals, with a 2022 growth rate of 15%.Immerse yourself in your chosen domain by attending industry conferences, networking with professionals, and staying abreast of sector-specific trends. Collaborate on AI projects within the chosen domain to apply theoretical knowledge.

## Strategies for Skilling in an AI-Driven World: Nurturing Continuous Learning and Professional Growth

When it comes to preparing for the impacts of AI, individuals, whether new entrants or seasoned professionals are tasked with navigating a future shaped by continuous innovation. Employing strategic methodologies is paramount for honing skills and fostering a mindset of perpetual learning. The following approaches are instrumental in preparing for the transformative impact of AI on the professional landscape:

**1. Continuous Learning :** Embracing continuous learning is not merely a choice but a necessity to remain relevant in the swiftly evolving field of AI. It signifies an acknowledgment of the perpetual nature of knowledge in this dynamic domain. Stay abreast of the latest advancements through regular engagement with AI-centric publications, attend webinars, and conferences, and seize opportunities for ongoing education to keep pace with the dynamic AI landscape.

**2. Hands-on Practice :** Theoretical knowledge alone is insufficient; the application of concepts through hands-on projects is essential for developing practical skills. It underscores the significance of translating acquired knowledge into real-world solutions. Undertake projects challenge your understanding of AI concepts, utilizing platforms like Kaggle for hands-on experience. Building a robust portfolio not only showcases skills but also demonstrates a commitment to practical proficiency.

**3. Networking :** Networking is not just about connections; it is a strategic investment in gaining insights, mentorship, and exposure to diverse perspectives. It underscores the collaborative nature of progress in AI. Actively participate in online forums, engage in social media discussions, and attend both local and virtual meetups. Networking fosters an ecosystem where shared knowledge propels the collective growth of AI enthusiasts and professionals.

**4. Online Courses and Certifications :** Enrolling in online courses and earning certifications is a structured approach to skill acquisition. It signals a commitment to formal education and validates expertise in specific AI domains. Platforms like GreatLearning, Coursera, Simplilearn, and edX offer specialized courses tailored to various AI skills. Certifications serve as tangible proof of competence, enhancing credibility in a competitive job market.

**5. Collaboration :** Collaboration is more than a buzzword; it is a cornerstone of success in AI. Contributing to open-source projects and participating in hackathons exemplify the synergy arising from shared knowledge and joint problem-solving. Actively contribute to GitHub projects, collaborate on coding challenges, and engage in hackathons. Collaborative endeavors cultivate a rich learning environment where diverse skill sets converge for innovative solutions.

In adopting these methodologies, individuals not only equip themselves with the technical skills demanded by the AI industry but also embrace a proactive approach to continuous learning. The implications go beyond individual career growth and contribute to the

collective advancement of AI knowledge and application. By navigating the AI-driven future with these strategies, professionals can fortify their positions as integral contributors to the ongoing evolution of AI technologies and their widespread impact.

## Demand-Supply Gap: Skills in High Demand Vs. Skills in Short Supply

As AI continues to redefine professional landscapes, individuals and industries are called upon to actively embrace this evolution. The fusion of technical acumen with adaptable, human-centric skills is key to navigating the intricacies of an AI-powered future. Emphasizing not only the significance of staying updated with technical skills but also the importance of fostering a mindset that welcomes change and continual learning. As the AI journey unfolds, professionals are urged not merely to adapt but to thrive in an era where the future of work, skilling, and mobility are intricately intertwined with the transformative force of artificial intelligence.

## Navigating the AI-Powered Future: A Paradigm Shift in Professional Skills

Continual learning, often referred to as lifelong learning, takes center stage in the evolution of AI, as highlighted in a report by Nature. In the realm of AI, where neural networks play a pivotal role, continual learning becomes crucial. Much AI relies on neural networks, which take data and pass them through a series of computational units, known as artificial neurons, which perform small mathematical functions on the data. Eventually, the network develops a statistical model of the data that it can then match to new inputs. Lifelong learning is necessary not only for self-driving cars but for any intelligent system that has to deal with surprises, such as chatbots, which are expected to answer questions about a product or service. These findings underscore the urgency for individuals to cultivate a diverse skill set that extends beyond technical expertise. Technology companies are championing skill development initiatives to empower professionals with the capabilities necessary to navigate and thrive in an AI-powered future. Adaptability and a balance of technical and soft skills are pivotal for success in a rapidly evolving professional landscape driven by artificial intelligence.

In navigating the ever-evolving landscape of artificial intelligence (AI), professionals are presented not only with technical challenges but a transformative shift in skill demands. Microsoft underscores a significant shift by identifying core competencies essential for all professionals, transcending traditional technical roles. The new imperative includes analytical judgment, flexibility, emotional intelligence, intellectual curiosity, bias detection, and handling, along with AI delegation. This holistic approach reflects the need for a workforce not only adept in technical prowess but also characterized by adaptability and emotional acumen. Professionals are not only encouraged to acquire technical skills relevant to emerging job roles but also urged to cultivate critical thinking, adaptability, and digital literacy – foundational elements shaping the AI-driven future of work. Quixy's report echoes this sentiment, emphasizing the essential mix of technical skills such as coding, data tricks, machine smarts, and neural networks, coupled with crucial soft skills like critical thinking and adaptability, as vital for thriving in an AI-driven environment.

LinkedIn's foresight into transformative career paths reinforces the idea that the future of work in the AI era is not characterized by job scarcity but rather by a reshaping of roles. Emerging positions like AI developers, ethicists, data scientists, and collaboration specialists signal a paradigm shift in the professional landscape. Adaptability, digital literacy, and critical thinking emerge as crucial skills for professionals navigating this AI-driven future. LinkedIn's insights into the rapid growth of AI-related skills affirm the escalating significance of AI skills in the professional landscape. Terms like question answering, classification, recommender systems, computer vision, and natural language processing represent not just technical jargon but the forefront of the AI revolution. The demand for AI talent in the Asia-Pacific region has outpaced overall hiring, underlining the transition of AI skills from being an asset to a necessity. The identification of key AI career choices, such as machine learning engineer, robotic scientist, data scientist, and researcher, further solidifies the diverse opportunities unfolding in the AI era. Mastery of data analysis, research methods, and programming languages like Python or R is highlighted as crucial for professionals venturing into AI-centric roles. As professionals immerse themselves in this era of AI, technology companies, governments, academia, and key industries are all pivotal in fostering skill development initiatives. These initiatives should aim not only to equip individuals with the technical skills demanded by AI but also to cultivate the soft skills imperative for success in a technology-driven world.

# A) Skills in High Demand

Major programming languages, data science and analytics, machine learning, natural language processing, and computer vision are some of the most in-demand skills related to AI adoption across various industries in India. These skills are essential for adapting, surviving, and thriving in an AI-driven era, and they are crucial for success in the AI field. Here's why!

**1. Python's Dominance in AI Development :** In the dynamic realm of artificial intelligence (AI), Python has indisputably claimed its position as the premier programming language, as highlighted by a comprehensive 2023 survey conducted by LinkedIn. This accolade is attributed to Python's trifecta of strengths: user-friendly syntax, unparalleled versatility, and a robust ecosystem, making it the preferred choice for developers navigating the complexities of AI.

At the heart of Python's ascendancy lies its user-friendly and readable syntax. This intrinsic feature simplifies the coding process, rendering it accessible to developers of varying skill levels. In the collaborative and fast-paced environment of AI, where agility and quick learning are paramount, Python's simplicity becomes a distinct advantage. Versatility stands as a cornerstone of Python's popularity. The language seamlessly caters to a spectrum of applications, spanning web development, data analysis, and machine learning. In the multifaceted landscape of AI, characterized by diverse functionalities, Python's adaptability emerges as a decisive factor.

Beyond its inherent traits, Python's extensive ecosystem of libraries and frameworks further amplifies its appeal. Powerhouses like TensorFlow, PyTorch, and sci-kit-learn provide pre-built tools, empowering data scientists and machine learning engineers to streamline the development of sophisticated AI solutions efficiently. Acknowledging the pivotal role of programming languages in the digital age, the World Economic Forum, in its 2022 report, underlines the imperative for professionals to master these languages. With an anticipated 50% of the workforce requiring reskilling or upskilling by 2025, mastering languages like Python becomes a critical aspect of navigating the evolving job landscape.

Python's significance transcends its status as a preferred language; it serves as a linchpin in crafting innovative AI solutions. The language's intuitive syntax accelerates development, reducing the learning curve for AI professionals and aligning with the broader objective of fostering AI proficiency across the workforce. The dominance of Python in AI is not merely a result of its technical capabilities but also its role in empowering a diverse range of professionals entering the AI domain. Python's impact extends beyond coding; it spearheads the creation of efficient and scalable AI solutions, positioning itself at the forefront of the ongoing AI revolution. This, in turn, contributes to the transformative journey of industries and shapes the contours of the future of work.

**2. Data Science and Analytics in a Data-driven World :** In a world inundated with data, the role of data scientists is soaring to unprecedented heights, with a projected growth of 33% from 2020 to 2030, surpassing the average for all occupations. McKinsey Global Institute's incisive 2022 study takes this revelation a step further, anticipating that data science is poised to birth a staggering 2.3 million new jobs in the United States alone by 2025.

Closer to home, in India, the appetite for data analysts and business analysts is palpable across diverse sectors. This surge in demand underscores the pivotal role data science plays in the landscape of artificial intelligence (AI), acting as the keystone that transforms raw data into actionable insights. The growing prominence of data scientists is a testament to their indispensable role in unraveling the latent potential of AI across various industries in India. As businesses increasingly recognize the power of harnessing data for strategic decision-making, the demand for skilled data scientists becomes not just a trend but a fundamental force shaping the future of work in the AI-driven era. The surge in demand for data science professionals signifies not merely a career choice but a response to the evolving needs of industries eager to leverage the transformative capabilities of AI.

**3. Rise of Machine Learning Engineers :** Machine learning stands as a transformative force, automating tasks from customer service to fraud detection. This surge is propelling an escalating demand for machine learning engineers, with the Brookings Institution forecasting an astonishing 70% growth in demand for these professionals by 2026.

Machine learning engineers are not merely responders to this demand; they are architects of innovation and efficiency in the realm of artificial intelligence (AI). Their expertise is instrumental in crafting and deploying AI applications, laying the foundation for intelligent systems that define the ongoing AI revolution in India. As industries increasingly recognize the potential of AI

to revolutionize processes, machine learning engineers become the linchpin in translating this potential into reality. Their role is not confined to meeting the current demand but extends to steering the trajectory of AI-driven advancements. The surge in demand for machine learning engineers is not just a testament to a career trend; it is a response to the imperative need for skilled professionals capable of steering the course of AI innovation in India.

## 4. Revolutionizing Interactions: Demand for NLP

**Engineers :** Natural Language Processing (NLP), the driving force behind innovations like chatbots and virtual assistants, is experiencing an unprecedented demand for NLP engineers. The University of Oxford's estimation that the NLP market will reach a staggering $43 billion by 2025 underscores the pivotal role these professionals play in the AI landscape.

NLP engineers are not just contributors to this demand surge; they are pioneers at the forefront of enhancing human-computer interactions, a foundational element of AI progression. Their work is the driving force behind the expansion of AI applications, promising transformative impacts on industries and daily life in India. The emergence of high-performance NLP engines like ChatGPT, Perplexity, and Bard further amplifies the urgency to innovate in this domain. NLP engineers are tasked with leveraging such advancements to position technology that can significantly improve the quality of life everywhere. As industries and individuals increasingly integrate AI-driven language processing into their operations, NLP engineers emerge as architects of a future where technology seamlessly understands and responds to human language, reshaping the way we interact with the digital world.

## 5. Visualizing the Future: Demand for

**Computer Vision Engineers :** Computer vision, the driving force behind advancements in self-driving cars and facial recognition systems, is charting a course toward heightened demand for computer vision engineers. Statista's projection of the global computer vision market reaching $12.4 billion by 2027 underscores the pivotal role these engineers play in shaping the future of AI.

Computer vision engineers are not merely witnesses to this surge; they are the architects steering the course of AI evolution by enabling machines to interpret and understand the visual world. Their contributions extend beyond technological advancements, fostering growth and innovation across various sectors in India.

From simplifying documentation management to detecting anomalies in medical imaging, computer vision engineers are unlocking the potential to reinvent various industries and enhance the efficacy of existing practices. Their expertise is pivotal in unleashing the transformative power of AI, offering solutions that redefine how we perceive, interpret, and interact with the visual data that surrounds us. As industries increasingly integrate computer vision into their operations, these engineers stand as catalysts for a future where AI not only understands but visually interprets the world, ushering in a new era of innovation and efficiency.

# B) Skills in Short Supply

The demand for artificial intelligence (AI) has surged, reshaping industries and transforming the way we interact with the digital realm. As AI solutions become integral to diverse sectors and demographics, a consequential challenge has emerged – a shortage of skilled professionals capable of navigating this accelerated development.

The multifaceted applications of AI, from data science and machine learning to natural language processing and computer vision, have sparked an unprecedented demand for adept individuals who can harness the power of intelligent systems. The pace of innovation and the quest for cutting-edge AI solutions have outpaced the rate at which skilled workers can be cultivated. Consequently, industries find themselves in a dynamic landscape where the scarcity of AI skills becomes a bottleneck in the journey towards unleashing the full potential of artificial intelligence. The findings in this section highlight key areas where the shortage in skills can be combated for industry, academia, and governments to take advantage of the AI wave.

## Bridging the Talent Gap in Programming Languages

The 2023 LinkedIn Skills Report highlights a substantial shortage of skilled workers in specific programming languages, creating a demand-supply gap that organizations are keen to address. The top 5 programming languages in short supply, according to the report, are Go, Dart, Rust, Kotlin, and TypeScript. The shortage of skilled workers in these programming languages underscores the urgency for individuals to upskill in these areas especially since the impacts of AI are widespread, calling for more innovation at the ground level across sectors and demographics.

### 1. Go - Empowering Cloud Computing and More

Go, a general-purpose programming language developed by Google, is prized for its simplicity, outstanding performance, and robust concurrency features. Its high demand is attributed to its prevalent use in cutting-edge fields like cloud computing, microservices architecture, and containerization. As businesses increasingly adopt these technologies, the need for skilled Go developers continues to rise.

### 2. Dart - Fueling Cross-Platform Innovation

Dart, another creation from Google, is tailored for cross-platform application development. Known for its user-friendly nature, exceptional performance, and robust object-oriented capabilities, Dart is widely used in mobile app development, web development, and game development. As the demand for versatile cross-platform solutions grows, so does the need for Dart-savvy professionals.

### 3. Rust - Revolutionizing Systems Programming

Mozilla's Rust has gained acclaim for its emphasis on memory safety, high performance, and efficient concurrency features. Its demand stems from its applications in systems programming, embedded systems, and web development. As industries seek safer and more efficient programming practices, Rust's role becomes increasingly critical while the availability of talent is not matching the industry demands, resulting in a shortage of skilled Rust developers.

### 4. Kotlin - Powering Android and Beyond

JetBrains' Kotlin has carved a niche for itself with its concise syntax, seamless interoperability with Java, and robust functional programming capabilities. Widely used in Android app development, backend development, and server-side applications, Kotlin's demand is on the rise. The shortage of Kotlin experts reflects the growing reliance on this language for building innovative and efficient software solutions.

### 5. TypeScript - Enhancing Web Development

TypeScript, a superset of JavaScript, offers developers improved code maintainability and type safety. Its demand is propelled by its extensive use in web development, front-end development, and cloud development. As organizations prioritize robust and secure web applications, TypeScript skills are increasingly sought after, resulting in a talent deficit due to the lack of skilled talent available that's proficient in this technology.

## Addressing the Talent Shortage in Data Science and Analytics

The 2023 Burning Glass report highlights a pressing challenge in the field of data science and analytics: a shortage of skilled professionals. The top 5 skills in short supply include Data Scientist, Machine Learning Engineer, Data Analyst, Business Intelligence Analyst, and Data Architect. As the demand for these skills intensifies, the supply of qualified workers is struggling to keep pace.

### 1. Data Scientist - Unraveling Insights from Data

Data scientists play a pivotal role in the data-driven era, tasked with collecting, cleaning, analyzing, and interpreting data to extract valuable insights. The surge in demand for data scientists is propelled by the exponential growth in data generation across industries. As businesses strive to derive meaningful conclusions from vast datasets, the shortage of skilled data scientists becomes a critical challenge.

### 2. Machine Learning Engineer - Navigating the Machine Learning Wave

Machine learning engineers are at the forefront of the technological wave, responsible for developing and deploying machine learning models. The escalating demand for machine learning in diverse industries amplifies the need for skilled engineers who can navigate the complexities of machine learning. The shortage in this skill set reflects the rapid integration of machine learning into various facets of modern businesses.

### 3. Data Analyst - Deciphering Trends and Patterns

Data analysts play a crucial role in deciphering trends, patterns, and anomalies within datasets, enabling businesses to make informed decisions. The high demand for data analysts arises from the imperative for businesses to embrace data-driven decision-making. The shortage of skilled data analysts poses a challenge as organizations seek professionals adept at transforming raw data into actionable insights.

### 4. Business Intelligence Analyst - Illuminating Performance Metrics

Business intelligence analysts contribute to organizational success by creating and maintaining business intelligence dashboards and reports. In an era where performance metrics are paramount, the demand for skilled business intelligence analysts is on the rise. The shortage in this skill set signifies the growing reliance on data visualization and analytics for strategic decision-making.

### 5. Data Architect - Designing Robust Data Architectures

Data architects are tasked with designing and implementing robust data architectures to handle the increasing complexity of data systems. As businesses grapple with diverse and intricate data structures, the demand for skilled data architects surges. The shortage in this skill set emphasizes the critical need for professionals who can architect data systems capable of meeting evolving industry demands.

The shortage of skills in data science and analytics poses a significant challenge for industries striving to leverage the power of data. Individuals equipped with expertise in Data Science, Machine Learning, Data Analysis, Business Intelligence, and Data Architecture are not only in high demand but are essential drivers of innovation in an increasingly data-centric landscape. Bridging this talent gap is pivotal for organizations seeking to unlock the full potential of their data assets.

## Addressing the Surge in Demand for Machine Learning Skills

The 2023 Indeed Hiring Lab report sheds light on the shortage of key machine learning skills, underlining the industry's swift transition towards machine learning adoption. The top 5 skills in short supply are Machine Learning Engineer, Natural Language Processing (NLP) Engineer, Computer Vision Engineer, Recommendation Systems Engineer, and Reinforcement Learning Engineer. The escalating demand for these skills is propelled by the widespread integration of machine learning across diverse industries.

### 1. Machine Learning Engineer - Pioneers of Model Development

Machine learning engineers spearhead the development and deployment of machine learning models. The heightened demand for machine learning engineers is a direct result of the increased utilization of machine learning across various industries. As organizations recognize the transformative potential of machine learning, the shortage of skilled engineers becomes a critical bottleneck.

### 2. NLP Engineer - Crafting Intelligent Language Solutions

NLP engineers play a pivotal role in crafting intelligent language solutions, deployed in applications such as chatbots, virtual assistants, and machine translation. The surge in demand for NLP engineers is rooted in the expanding applications of natural language processing. The shortage of skilled NLP engineers reflects the dynamic landscape of language-centric technologies.

### 3. Computer Vision Engineer - Shaping the Visual Frontier Architectures

Computer vision engineers are instrumental in developing and deploying computer vision models, shaping the visual frontier of technology. The increasing use of computer vision in applications like self-driving cars, facial recognition systems, and medical image analysis propels the demand for skilled engineers. The shortage in this skill set highlights the integral role of computer vision in modern technological advancements.

### 4. Recommendation Systems Engineer - Personalizing User Experiences

Recommendation systems engineers are tasked with developing and deploying algorithms that personalize user experiences. The growing reliance on recommendation systems in e-commerce platforms, streaming services, and social media platforms drives the demand for skilled engineers. The shortage of recommendation systems engineers underscores the pivotal role of personalized content delivery in today's digital landscape.

### 5. Reinforcement Learning Engineer - Architects of Intelligent Systems

Reinforcement learning engineers are architects of intelligent systems, developing and deploying models in robotics, game development, and autonomous systems. The increasing use of reinforcement learning across diverse applications fuels the demand for skilled engineers. The shortage in this skill set highlights the critical need for professionals versed in developing intelligent, adaptive systems.

The shortage of machine learning skills reflects the rapid evolution of industries towards intelligent, data-driven solutions. Individuals proficient in Machine Learning, NLP, Computer Vision, Recommendation Systems, and Reinforcement Learning are not only in high demand but are pivotal for driving innovation in an era defined by intelligent technologies. Closing this skills gap is essential for industries seeking to harness the full potential of machine learning across diverse applications.

## NLP Skills: Meeting the Demand for Intelligent Language Solutions

The 2023 TalentNeuron report pinpoints a shortage in key Natural Language Processing (NLP) skills, reflecting the soaring demand for NLP-powered applications like chatbots, virtual assistants, and machine translation. The top 5 skills in short supply are NLP Engineer, Conversational AI Specialist, NLP Research Scientist, NLP Data Scientist, and NLP Product Manager. This scarcity underscores the pivotal role of NLP in shaping modern technological landscapes.

### 1. NLP Engineer - Crafting Intelligent Language Models

NLP engineers are at the forefront of developing and deploying NLP models, driving the adoption of intelligent language solutions. The increasing utilization of NLP in applications like chatbots, virtual assistants, and machine translation amplifies the demand for skilled NLP engineers. The shortage of NLP engineers emphasizes the critical need for professionals adept at crafting advanced language processing systems.

### 2. Conversational AI Specialist - Designing Dynamic Interactions

Conversational AI specialists play a crucial role in designing and developing conversational AI systems, influencing applications such as customer service chatbots, virtual assistants, and personal assistants. The high demand for conversational AI specialists is a direct consequence of the growing reliance on dynamic, interactive systems. The shortage in this skill set highlights the industry's need for specialists who can innovate in conversational AI.

### 3. NLP Research Scientist - Advancing the Frontiers of Language Technology

NLP research scientists conduct pivotal research in the field, contributing to the rapid advancement of NLP technology. The surge in demand for NLP research scientists reflects the dynamic nature of language technology and the constant need for innovation. The shortage underscores the industry's quest for individuals capable of advancing the frontiers of language processing.

### 4. NLP Data Scientist - Managing the Influx of Language Data

NLP data scientists are responsible for collecting, cleaning, and preparing NLP data, crucial in the face of the increasing amount of NLP data being generated. The demand for NLP data scientists is propelled by the

data-intensive nature of language processing applications. The shortage emphasizes the industry's need for skilled data scientists specialized in handling NLP datasets.

### 5. NLP Product Manager - Steering NLP Product Development

NLP product managers take charge of developing and managing NLP products, responding to the escalating demand for NLP-powered applications. The shortage of NLP product managers highlights the need for professionals who can effectively navigate the development and deployment of NLP products, aligning with market demands.

The shortage of NLP skills signifies the transformative impact of language technology across various sectors. Professionals skilled in NLP engineering, conversational AI, research, data science, and product management are not only in high demand but are essential for driving innovation in an era defined by intelligent language solutions. Closing this skills gap is imperative for industries seeking to harness the full potential of NLP across diverse applications and capitalize on the communication revolution.

## Addressing the Skill Gap in Computer Vision Development

As industries increasingly embrace these applications, there is a growing need to bridge the skills gap to harness the full potential of computer vision technologies. Addressing this shortage not only meets industry demands but also drives innovation, ushering in transformative advancements in the realm of AI-driven computer vision.

**1. Computer vision engineers** are responsible for developing and deploying computer vision models. The demand for computer vision engineers is high due to the increasing use of computer vision in various applications, such as self-driving cars, facial recognition systems, and medical image analysis.

**2. Image processing engineers** are responsible for developing and applying image processing techniques to enhance and analyze visual information. The demand for image processing engineers is being propelled by the need to refine and interpret visual data, especially in critical applications like medical imaging and computer vision.

**3. Augmented Reality (AR) developers** specialize in creating applications that overlay digital information

onto the real world. The rising demand for AR developers is fueled by the growing interest in AR applications across diverse sectors, from gaming and retail to education and healthcare.

**4. Virtual Reality (VR) developers** focus on crafting immersive digital environments. The surge in demand for VR developers is attributed to the exploration of VR applications in various fields, including training simulations, entertainment, and industrial design.

**5. Computer Graphics Specialists** bring together artistic and technical skills to create visually captivating digital content. The demand for these specialists is rising, primarily driven by the need for advanced graphics in gaming, entertainment, and virtual experiences.

From the groundbreaking developments in self-driving cars, where computer vision enables vehicles to perceive and navigate their surroundings autonomously, to the widespread adoption of facial recognition systems, enhancing security and user authentication, the applications are diverse and impactful. Moreover, in the realm of healthcare, computer vision plays a pivotal role in medical image analysis. This encompasses a range of applications, from diagnostic assistance through the interpretation of medical images like X-rays and MRIs to the automation of certain medical procedures. The versatility and transformative potential of computer vision extend beyond these examples, encompassing fields like agriculture, retail, and manufacturing. As industries recognize the efficiency, accuracy, and innovation that computer vision brings, the demand for professionals equipped with these skills surges. Therefore, addressing the shortage of computer vision specialists becomes paramount to meeting the evolving needs of a technology-driven society and unleashing the full potential of AI applications.

## Bridging the Skill Gap through Collaborative Innovation

Characterized by innovation as the driving force, collaborative efforts have emerged as the cornerstone for addressing the critical shortage of skilled professionals in India. This concerted endeavor involves a tripartite alliance between governments, academia, and industry players, reflecting a shared commitment to shaping the future of AI. Industry-led initiatives, strategically positioned at the forefront, not only entice professionals to master essential languages but also acknowledge their indispensable role in sculpting the AI development landscape.

The era of data-driven decision-making accentuates the importance of addressing the scarcity of skills in data science and analytics, prompting collaborative recalibration of curricula by academic institutions and industries. This dynamic collaboration aims to produce graduates equipped with the analytical prowess demanded by the digital age. Governments actively drive skilling initiatives, offering incentives for companies to invest in employee training, thereby nurturing a workforce capable of unlocking the transformative potential of AI. This collective effort not only addresses the immediate talent deficit but also solidifies India's standing as a global hub for AI talent.

Machine learning, as the driving force behind AI's evolution, beckons collaborative research initiatives between academia and industry, with a focus on applied research that tackles real-world challenges. The impetus provided by government grants and subsidies acts as a catalyst, propelling companies to invest in research and development, shaping a future where machine learning is synonymous with global innovation. Government-sponsored forums facilitate knowledge exchange between academia and industry, propelling language technology to unprecedented heights. Mentorship programs and internships, spearheaded by industry visionaries, inspire the next generation of natural language processing (NLP) experts, ensuring the seamless integration of AI-powered language solutions into daily life.

In the domain of computer vision, collaboration takes center stage, fostering a convergence of talents from diverse backgrounds. Government-sponsored hackathons and innovation challenges serve as catalysts for creativity, propelling computer vision into applications that redefine India's interaction with the visual world. An exemplary illustration of this collaborative innovation is the synergy between T-HUB and T-Works in the state of Telangana.

As skilling initiatives assume a central role, programming languages carve a path toward practical applications in cloud computing and microservices. Simultaneously, data science academies and mentorship programs emerge as incubators for analytical minds, preparing professionals for the dynamic challenges of interpreting vast datasets. This holistic approach not only addresses the immediate talent gap but also lays the groundwork for a future where collaborative innovation thrives, propelling India into a global leadership role in AI.

## Empowering India's Global Leadership in AI

In the current landscape, reskilling programs in machine learning are not just about theoretical knowledge; they are dynamic initiatives emphasizing experiential learning. These programs are designed to bridge the gap between theoretical understanding and real-world applications, providing professionals with hands-on experiences that are invaluable in the rapidly evolving field of AI. What propels this transformative journey even further are the strategic incentives provided by the government. These incentives serve as crucial catalysts, reshaping the AI landscape in India.

The government's support takes various forms, from tax breaks for companies investing in training programs to substantial funding for research in data science. Notably, the introduction of R&D tax credits for machine learning initiatives marks a paradigm shift in the way AI is approached and innovated in India. These measures collectively redefine the landscape of AI, opening doors to new possibilities for innovation at scale and velocity.

Moreover, the government's commitment extends to specific domains within AI, such as natural language processing (NLP) and computer vision. Subsidies for NLP research projects and financial support for start-ups in computer vision signify a focused effort to stimulate collaboration and innovation in these critical areas. This concerted approach solidifies India's status as a global leader in AI, where collaboration and innovation intertwine seamlessly.

This strategic initiative aligns with the current imperative of addressing the skill gap deficit observed across industries. India is taking substantial steps in fostering an era of AI-led growth, recognizing the transformative potential of artificial intelligence and positioning itself as a hub for innovation and expertise. In navigating this landscape, India emerges not only as a participant but as a trailblazer, actively shaping the future of AI on the global stage.

## India's AI Leadership in Numbers

In recent years, India has emerged as a formidable global leader in artificial intelligence (AI), showcasing remarkable progress across various fronts. The statistics for 2023 underscore India's pivotal role in shaping the AI landscape:

- **Market Dynamics :** India stands as the world's second-largest AI market, following the United States, with projections indicating a surge from $4.4 billion in 2021 to a staggering $18.9 billion by 2025.

- **Startup Ecosystem :** The country boasts the third-largest number of AI startups globally, with over 1,000 such ventures and a trajectory marked by rapid growth as we enter 2024.

- **Academic Excellence :** Distinguished AI research institutions, including the Indian Institute of Science, the Indian Institute of Technology, and the National Institute of Technology, underscore India's commitment to advancing the frontiers of AI3.

- **Research Contribution :** India emerges as the second-largest contributor of AI research papers globally, with over 10,000 papers published by Indian researchers in 2024.

- **Talent Pool :** A burgeoning pool of AI talent characterizes India, with over 2 million professionals contributing to the field, and projections foresee this number reaching 5 million by 2025.

## India's AI Impact: Shaping Sectors and Society

India has rapidly emerged as a global frontrunner in the field of artificial intelligence (AI), a journey defined by a synergy of key factors that illuminate the nation's steadfast dedication to technological progress. The landscape is further enriched by the catalyzing role of startups, propelling India's corporate entities onto the international stage. Here, IPOs from these innovative ventures stand toe-to-toe with Silicon Valley giants, showcasing the efficiency and resourcefulness embedded in India's AI solution development.

Central to this remarkable ascent is the unwavering commitment of the Indian government, exemplified by groundbreaking initiatives such as the National AI Strategy and the National AI Mission. These initiatives, serving as the bedrock of India's prowess in AI, reflect a visionary approach that positions the nation to wield substantial influence in the ever-evolving landscape of artificial intelligence. As India continues to chart its course at the forefront of global AI leadership, it does so with a commitment to harnessing the transformative power of technology for the benefit of society and the advancement of innovation.

## 1. Governmental Commitment: The Catalyst for Change

India's formidable stride in AI is underpinned by a government that recognizes the transformative power of technology. The National AI Strategy and the National AI Mission stand as a testament to the nation's dedication to fostering innovation and steering the course of AI development. With a clear roadmap and strategic initiatives, the government has laid the foundation for a thriving AI ecosystem, positioning India as a global hub for cutting-edge technological advancements.

## 2. IT Industry: Powerhouse of Innovation

India's flourishing Information Technology (IT) industry plays a pivotal role in propelling the country's AI leadership. Positioned as a powerhouse of innovation, the IT sector provides the ideal breeding ground for the development and adoption of AI technologies. This synergy between IT prowess and AI ingenuity forms the backbone of India's technological prowess, setting the stage for groundbreaking developments that transcend geographical boundaries.

## 3. Economic and Societal Impact: Redefining Realities

The profound impact of India's AI leadership resonates across both its economy and society, ushering in transformative changes that touch every facet of life. In key sectors, AI applications are not just making incremental improvements but catalyzing revolutionary shifts :

• **Healthcare Revolution :** AI innovations are spearheading a healthcare revolution, driving the development of new drugs, facilitating accurate disease diagnosis, and tailoring personalized treatment plans. This convergence of technology and healthcare is not merely improving patient outcomes but redefining the entire medical landscape.

• **Educational Transformation :** The integration of AI is ushering in an educational transformation, where learning experiences are personalized, adaptive learning solutions are offered, and administrative tasks are streamlined. The traditional education paradigm is evolving to cater to individual needs, marking a significant leap forward in the way knowledge is imparted and acquired.

• **Agriculture Optimization :** In agriculture, AI applications are optimizing crop yields, predicting weather patterns, and managing pests and diseases. This optimization not only ensures sustainable agriculture

practices but also addresses the pressing need to feed a growing global population.

**Financial Landscape Transformed :** The financial landscape is undergoing a transformative shift, thanks to AI. The technology is adept at detecting fraud, enhancing risk assessment, and delivering automated financial advice. This not only safeguards financial institutions but also empowers individuals with more secure and efficient financial services.

**Retail Revolution:** AI is revolutionizing the retail sector with personalized recommendations, optimized pricing strategies, and improved customer service. This not only enhances the customer experience but also boosts the efficiency and profitability of retail operations.

## India's Leap into the Future by Nurturing AI Talent

India's prowess in AI is not to be a fleeting achievement but a testament to the nation's growing availability of talent, ample resources, and sustained government support. With a talent pool exceeding 2 million AI professionals, and projections foreseeing this number reaching 5 million by 2025, India is poised to play an even more significant role in shaping the future of AI on the global stage. As the AI journey continues, India stands tall, leveraging its technological prowess and unwavering commitment to solving real-world problems. The nation's quantum leap in AI is not just a stride forward; it's a defining chapter in the ongoing narrative of technological evolution. As India continues to innovate and lead, it is set to leave an indelible mark on the future of this transformative technology.

India's commitment to cultivating a robust talent pool in artificial intelligence (AI) is evident through a myriad of government, industry, and academic initiatives. At the forefront of governmental efforts is the National Skill Development Mission (NSDM), a flagship program designed to propel skill development in the country. Within the NSDM, the FutureSkills Prime program is a beacon, offering free online AI training courses that have reached millions of Indians, fostering a nationwide culture of AI expertise.

The Ministry of Electronics and Information Technology (MeitY) contributes significantly to AI skilling through initiatives such as the AI for India program. This program extends AI training to a diverse audience, encompassing students, professionals, and startups. Simultaneously, the Ministry of Human Resource

Development (MHRD) focuses on higher education with initiatives like the National Initiative for Developing Human Capital in Core Areas (NIDHI-CORE). NIDHI-CORE plays a pivotal role in providing support for AI research and teaching within Indian universities, thereby fortifying the foundations of AI education.

NASSCOM FutureSkills program. This industry-aligned initiative provides tailored AI training to IT professionals, aligning skill development with the evolving needs of the sector. Major IT players like Infosys contribute to AI skilling through programs such as the Infosys Foundation Skills for the Digital Age, focusing on imparting essential IT skills to underprivileged youth. TCS, another IT giant, furthers AI skills through the TCS goIT program, aiming to equip young professionals with AI expertise.

Academic institutions are pivotal in shaping the future of AI talent in India. Premier engineering institutions like IITs and NITs offer an expanding array of AI courses and programs, ensuring that students receive cutting-edge education in this rapidly evolving field. India's leading business schools, the Indian Institutes of Management (IIMs), are also active participants in the AI education landscape, offering specialized courses and programs. Beyond these, numerous private universities across India contribute to the proliferation of AI knowledge, ensuring that AI education is accessible across diverse educational institutions.

Together, these initiatives form a comprehensive ecosystem that nurtures AI talent from grassroots to advanced research, ensuring that India continues to thrive as a global leader in AI innovation.
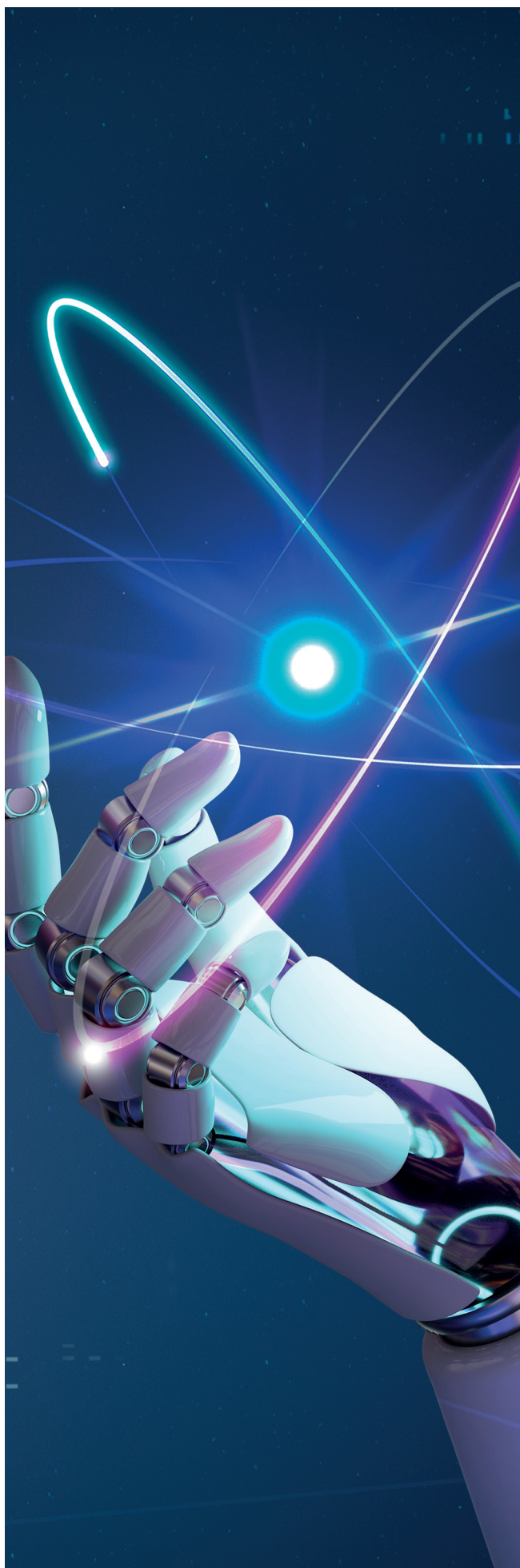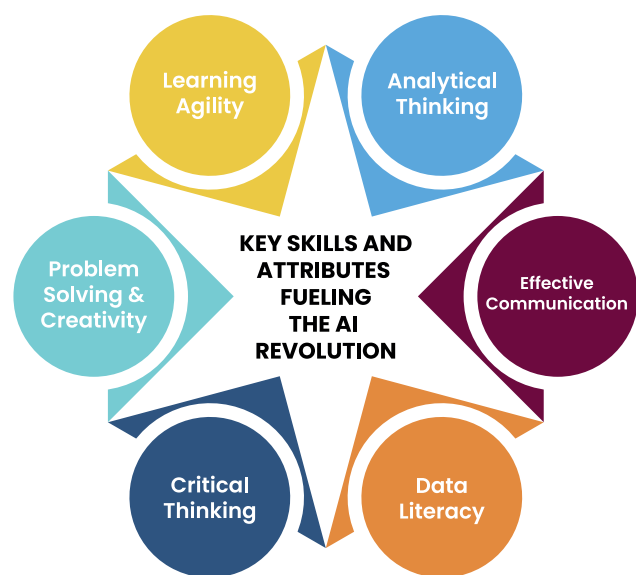
# THE ROLE OF AI IN RESHAPING MOBILITY

## Understanding the AI Revolution in Determining the Future of Mobility

In the relentless march of progress, the transformative power of Artificial Intelligence (AI) is leaving an indelible mark on all facets of our lives. Nowhere is this impact more profound than in the realm of mobility, where AI is not merely a technological advancement but a catalyst reshaping the way we move, connect, and navigate our surroundings. AI plays a pivotal role in molding the future of industrial operations, workforce dynamics, and the very fabric of how we conduct business.

At the forefront of modern industry and public infrastructure is AI's role in shaping the future of transportation, logistics, global supply networks and workforce dynamics. AI-powered solutions are bringing about a paradigm shift, fostering smarter and safer infrastructures. One of the most talked about aspects lies in the continued development of autonomous vehicles and cloud based data aggregation platforms. As AI algorithms become increasingly sophisticated, the prospect of self-driving cars and fully governed data networks promises not only safer roads but also a revolution in efficiency and accessibility. In the Indian context, this could mean a transformative shift in urban transportation and industrial operations, from addressing congestion in urban areas, to streamlining global supply operations and reinventing workforce interactions, AI is already opening up new possibilities for a diverse and growing population. AI is not only revolutionizing not only the physical act of movement but also the intricacies of how workforces operate in the 21st century.

In this section, we will explore the far-reaching implications of AI in mobility, with a keen focus on its impact on industrial operations, workforce mobility, and the evolving skill landscape. From the development of autonomous vehicles to cloud-based technologies and borderless communications, AI is not merelyt how goods and people move but is also redefining the

dynamics of work in an era marked by agility, adaptability, and seamless connectivity. With 58% of Indian jobs projected to be susceptible to automation by 2030, according to the World Economic Forum, the axe of automation hovers particularly over manufacturing and service sectors, casting shadows on industries like IT and banking. Low-skilled workers face a higher risk, potentially leading to a widening skill gap that demands urgent attention. So how does the modern workforce stay agile, mobile and adaptable to the shift in technological and infrastructural demands of the 21st century?



KEY SKILLS AND ATTRIBUTES FUELING THE AI REVOLUTION
- Learning Agility
- Analytical Thinking
- Effective Communication
- Data Literacy
- Critical Thinking
- Problem Solving & Creativity

## The Impact of AI on the Workforce and Mobility

With the inclusion of cutting-edge productivity tools, cloud platforms and data-driven business operations, it is evident that AI is not just a technological evolution; it's a force driving job displacement, upskilling imperatives, and fostering a dynamic and mobile workforce.

As AI technology continues to evolve, the mobility solutions for industrial transformation in India stands on the precipice of transformative change. These advancements hold the key to a future where efficiency, safety, and accessibility converge to redefine industries. The AI wave in India's workforce is not just about automation; it's about redefining the way we work. It is about navigating the nuanced interplay of job displacement and creation, challenges and opportunities. As we stand at the cusp of this transformation, the trajectory of AI's inclusion in workplaces beckons us to rethink, reskill, and reimagine the future of work. In doing so, we pave the way for improved working conditions, enhanced productivity, and a workforce that is not just adaptive but thriving in the era of AI.

## The Disruption Landscape: Navigating the Impact of AI on Workforce Dynamics and Industrial Mobility

In the unfolding narrative of technological progress, the canvas of change is marked by stark statistics, illuminating the profound impact of Artificial Intelligence (AI) on the workforce and the mobility of industrial operations. A staggering revelation from the World Economic Forum paints a picture of significant transformation — 58% of Indian jobs are susceptible to automation by 2030. Former stalwarts of employment, the manufacturing, and service sectors, now grapple with the specter of job displacement as AI infiltrates every facet of their operations. The pulse of change reverberates through the workforce, with 14% of Indian workers already experiencing job displacement due to automation or AI, according to Socius. The vulnerability extends to low-skilled and repetitive tasks, impacting sectors like data entry, manual labor, and assembly lines. Regional nuances emerge, with urban areas facing higher automation rates compared to their rural counterparts.However, in this disruption lies not a harbinger of doom, but a catalyst for evolution.

## The Age of Upskilling and Reskilling Efforts

The response to displacement unfolds in the form of a race to upskill and reskill. A quarter of Indian companies find themselves grappling with the challenge of sourcing skilled talent for AI-related jobs, where sixty percent of Indian employers are investing in AI training programs, recognizing the imperative to upskill and reskill their workforce, according to PwC. Initiatives such as Skill India and Digital India, spearheaded by the government, aim to promote digital literacy and upskilling programs. Meanwhile, private online learning platforms and bootcamps contribute to the ecosystem by offering AI-specific courses and certifications. The disruptive wave of AI is sector-agnostic but leaves distinctive imprints. In manufacturing, the World Bank estimates that 800,000 jobs could be lost to automation by 2030. Healthcare, while seeing automation of administrative tasks, underscores the irreplaceable role of human doctors in patient care. Education witnesses the integration of AI tools for personalized learning but remains anchored in the indispensability of the human element.

The trajectory of change extends into the long-term, with the World Bank further estimating that 54% of Indian jobs could be automated by 2060. The workforce grapples with a sense of uncertainty, as over 74% fear losing their jobs to AI, necessitating clear communication and robust training programs. On a positive note, 60% of Indian employees anticipate that AI will significantly boost their productivity, revealing optimistic attitudes toward AI integration in workplaces. As we navigate this disruption, fostering collaboration becomes paramount. The synergy between government, industry, and educational institutions is crucial for effective upskilling programs. Soft skills such as critical thinking, problem-solving, and communication emerge as bedrocks of success in the AI era. Furthermore, investing in lifelong learning and adaptability becomes key for individuals seeking to navigate the evolving landscape of the job market. In this era of transformative change, adaptation becomes not just a strategy but a survival imperative.

## The Impact of AI on India's Dynamic and Mobile Workforces

The transformative impact of AI is palpable across various dimensions, shaping not only how work is conducted but also redefining the very nature of workplace structures. The paradigm shift towards hybrid and remote work models is underscored by compelling statistics. A notable 42% of Indian employees express a preference for a hybrid work model, allocating 2-3 days per week in the office, according to PwC. Remote work adoption, especially prominent in IT, finance, and professional services, has seen a significant uptick, reflecting changing preferences and the adaptability of certain sectors. Post-pandemic, companies are planning a substantial increase in remote work, with McKinsey reporting a shift from 22% pre-pandemic to a planned 2+ days of remote work per week. The response to job displacement comes in the form of a proactive shift in mindset. In this climate, workers themselves are optimistic, with 51% expecting AI to significantly boost their productivity – a figure higher than the global average.

Maintaining company culture and fostering collaboration in virtual settings pose significant challenges, as highlighted by a Microsoft Teams survey. Cybersecurity and data privacy become paramount considerations with the increased remote access to company systems. Addressing employee well-being and preventing burnout necessitate innovative approaches in hybrid and remote work environments. The technology

sector, exemplified by IT, leads the charge in remote work adoption, with 67% of IT employees working remotely at least half the time, according to Statista. Industries like manufacturing and retail, while exploring hybrid models due to job nature, find remote options viable for administrative and support roles. Additionally, the gig economy and freelance work are experiencing a surge in popularity, offering individuals the flexibility and mobility they seek. Enterprising solutions emerge through AI talent acquisition platforms, seamlessly connecting companies with skilled remote workers from diverse locations, thereby expanding access to a global talent pool.

## Steps to Introduce AI-Powered Skills Gap Analysis



Predictive analytics, another facet of AI, plays a pivotal role in optimizing talent allocation. By matching skills, location preferences, and team needs, companies can strategically deploy their workforce for maximum efficiency. Hybrid work models, beyond merely adapting to the new normal, have the potential to enhance work-life balance and employee satisfaction, ultimately leading to increased productivity. The AI wave extends to Human Resources (HR), with a staggering 70% of Indian companies planning to increase their use of AI in HR over the next few years, as reported by NASSCOM. AI-powered chatbots and virtual assistants are revolutionizing routine HR tasks, allowing human HR professionals to focus on strategic initiatives that elevate employee experiences.

Remote work is not just a trend; it is a substantial contributor to the economy. McKinsey projects that remote work will add $700 billion to the Indian economy by 2025, underscoring the economic significance of this transformative shift. As organizations navigate this transformative era, investing in robust communication and collaboration tools becomes a cornerstone for the success of hybrid and remote work models. Prioritizing employee well-being through dedicated programs

and mental health initiatives is essential to support the evolving needs of remote workers. Additionally, governmental policies and regulations must adapt to address the challenges and opportunities presented by a mobile workforce, ensuring a harmonious integration of AI-driven changes into the fabric of the Indian workplace.

## Efficiency, Safety, and Accessibility: Transforming India through AI

From factory floors to remote villages, AI is redefining how we operate, ensuring efficiency gains, enhancing safety measures, and fostering accessibility for all. The infusion of AI-powered technologies is a game-changer for operational efficiency. McKinsey reports that predictive maintenance in factories can prevent equipment failures, reducing downtime and boosting operational efficiency by 20-30%. In logistics and supply chain management, AI optimization yields tangible results, reducing costs by 15-20% (Accenture). The power of data-driven marketing and sales, enhancing customer experiences, is exemplified by a potential improvement in conversion rates by up to 30% (Marketo).

Safety is paramount, and AI is at the forefront of preventative measures. AI-powered safety monitoring systems in high-risk sectors like construction and mining detect hazards, averting accidents and reducing injury rates by 25% (IBM). Predictive analytics in healthcare not only identifies patients at risk of complications but enables early intervention, improving patient outcomes and reducing costs. In transportation, AI-powered traffic management systems optimize flow, reduce congestion, and contribute to safer roads with reduced emissions. AI is also breaking barriers and enhancing accessibility on multiple fronts. AI-powered chatbots and virtual assistants offer 24/7 customer support in multiple languages, significantly improving accessibility for rural and underserved communities. Language barriers are dismantled by AI-powered translation tools, enhancing access to education, healthcare, and other services. AI-powered assistive technologies empower individuals with disabilities, increasing independence and facilitating active participation in society.

The journey with AI is far from over; it holds immense potential for the future. India, with its diverse challenges and opportunities, showcases the concrete impact of AI in various domains.

- AI's role in crop disease detection aids farmers,

improving yields and reducing pesticide use, thus enhancing food security for rural communities.

• Administrative tasks in government and public services can be automated, promising improved efficiency and accessibility for citizens.

• AI-powered environmental monitoring emerges as a crucial player in addressing climate change challenges and promoting sustainable development.

• Continued research and development in ethical and responsible AI are paramount to ensure equitable access and mitigate potential risks.

• Financial inclusion platforms powered by AI are providing access to unbanked populations, contributing to economic development.

• AI-driven education platforms tailor learning experiences, catering to diverse styles and backgrounds, thereby improving educational accessibility.

The statistics gathered by leading industries and research partners underline the widespread acceptance and anticipation of AI's transformative potential. A substantial 85% of Indian businesses believe AI will improve their efficiency and productivity (NASSCOM). Furthermore, 70% of Indian consumers express openness to using AI-powered services in critical domains like healthcare, finance, and education (Deloitte). The Indian government, recognizing AI's pivotal role, has launched initiatives such as the National AI Strategy and the Digital India program, signaling a commitment to accelerating AI adoption and addressing accessibility challenges.

# Rethinking and Reimagining Work: Trends & Insights

Shifting work preferences, a surge in flexibility, and the rise of alternative work models paint a canvas of change where adaptability and continuous learning become the keystones of success. Listed below are key trends redefining the way people work, collaborate and innovate in the growing professional landscape of India.

## 1. Shifting Work Preferences and Flexibility

Contrary to assumptions, 44% of Indian employees report increased productivity while working remotely (Statista), challenging the notion of decreased efficiency in remote work scenarios. A resounding 70% of Indian employers plan to introduce flexible work arrangements in the next year (NASSCOM), reflecting a growing acknowledgment of the evolving preferences of the workforce. The demand for co-working spaces and shared environments is on the rise, signaling a desire for community and collaboration alongside the need for flexibility in work structures.

## 2. AI-powered Upskilling and Reskilling

AI emerges not only as a disruptor but as a facilitator of growth. Sixty-five percent of Indian companies believe AI will create new job opportunities alongside displacement, necessitating robust upskilling programs (PwC). Micro-learning platforms and bite-sized learning modules tailored to specific skill gaps are gaining popularity, offering efficient and accessible avenues for upskilling. AI-powered career guidance tools, analyzing individual skills and market trends, play a pivotal role in recommending relevant upskilling pathways for future-proof careers.

## 3. Alternative Work Models and the Gig Economy

The allure of the gig economy continues to grow, with 55% of Indian freelancers reporting higher income and job satisfaction compared to traditional employment (Freelancer.com). Platforms connecting companies with freelance talent are burgeoning, catering to diverse needs and skill sets. Government initiatives like Startup India and Digital Skilling Mission further foster the gig economy, supporting independent workers in their pursuit of flexible and fulfilling career paths.

## 4. Hiring Focus Beyond Job Titles

A seismic shift is observed in the focus of employers, moving from job titles to skills and adaptability. Lifelong learning and continuous upskilling become essential for individuals to navigate the changing job landscape in an AI-driven world. Work-life balance and employee well-being take center stage as companies recognize the importance of a holistic approach to work, emphasizing the need for a symbiotic relationship between professional and personal growth.

## 5. Blending Traditional and Contemporary Work Cultures

The crystal ball reveals intriguing glimpses of the future. Hybrid work models, blending the traditional and the contemporary, are poised to become the new normal. AI-powered training and development will play a crucial role in bridging skill gaps, ensuring that the

workforce is equipped for the jobs of the future. The gig economy and freelance work, far from being fleeting trends, are expected to continue growing, offering alternative career paths and flexibility d freelance work, far from being fleeting trends, are expected to continue growing, offering alternative career paths and flexibility to workers seeking a dynamic and autonomous professional journey. In the reimagined work landscape, AI is a guiding force, steering India towards a future where flexibility, upskilling, and alternative work models are not just embraced but celebrated. By fostering a culture of continuous learning, India is poised to equip its workforce for the exciting possibilities that lie ahead in the ever-evolving world of work.

## Key Skills Influencing AI's Role in Reshaping Workforces

As AI revolutionizes workforce mobility, the professional landscape undergoes a substantial shift, with new opportunities emerging and existing roles evolving, where more people from various parts of the nation gain access to opportunities that match their profile. Skill Sets and aspects of continuous innovaiton crucial in this evolving landscape include:

### 1. Data Analysis and Interpretation :

Skilled individuals in data analysis enable organizations to make informed decisions based on the insights extracted from vast datasets. This aids in strategizing and optimizing performance across various business functions. Data-driven decision-making enhances operational efficiency, allowing businesses to identify patterns, trends, and areas of improvement. This, in turn, contributes to increased productivity and streamlined workflows.

Employees specializing in data analysis develop expertise in handling complex datasets and utilizing analytical tools. This skillset is transferable across industries, providing a foundation for a versatile and resilient career. Being at the forefront of data-driven decision-making positions employees as valuable assets. Their contributions to strategic planning and optimization contribute significantly to professional growth and recognition.

### 2. Software Development and Engineering:

Skilled software developers and engineers drive the continuous innovation and evolution of AI-powered mobility systems. This ensures that organizations stay at the forefront of technological advancements and market competition. The ability to develop, maintain,

and evolve AI systems reflects an organization's adaptability to changing technological landscapes. Employers benefit from having systems that can be updated to meet evolving business needs.Software developers and engineers working on AI-powered systems gain cutting-edge technical skills. This not only keeps them professionally relevant but also positions them as leaders in the rapidly evolving field of AI. Contributing to the development of innovative technologies often brings a sense of accomplishment and job satisfaction. Employees find fulfillment in knowing that their work directly impacts the organization's success and harnesses technological advancement for the benefit of society at large.

### 3. Human-Computer Interaction Design :

Skilled professionals in human-computer interaction design contribute to the creation of intuitive and user-friendly interfaces. This enhances the overall user experience, making AI-powered systems more accessible and appealing to end-users. Designs that consider human behavior and interaction patterns lead to increased user engagement. This, in turn, can positively impact metrics such as user retention and satisfaction. Professionals in human-computer interaction design have the opportunity for creative expression in their work. Crafting interfaces that resonate with users involves artistic and creative elements, providing a fulfilling aspect to their roles. The focus on understanding human behavior and designing interfaces accordingly instills a user-centric mindset. Employees in this role find satisfaction in creating solutions that directly cater to the needs and preferences of end-users.

These major skill sets, professional aptitudes and functions create a symbiotic relationship where employers benefit from expertise that drives organizational success, innovation, and adaptability. Simultaneously, employees experience personal and professional growth through skill development, job satisfaction, and the opportunity to contribute to cutting-edge advancements in the inclusion of AI, and enriching user experiences for a tech-enabled generation of today, and tomorrow.

## Fostering Fulfilling Career Growth

In harnessing the positive energy of AI, India stands at the forefront of a transformative era. Responsible AI implementation, coupled with robust upskilling programs and a human-centered approach, ensures that the workforce not only adapts but thrives in the promising landscape of the AI-powered future. As

perceptions shift and tangible benefits unfold, AI emerges as a catalyst for improved working conditions, enhanced productivity, and enriched professional lives. A substantial 80% of organizations report improved decision-making after implementing AI solutions (NASSCOM). The positive sentiment extends to workplace communication and collaboration, with 75% of employees believing that AI can enhance these aspects (PwC). The Indian government's Digital India program is a testament to the national commitment to leverage AI for improved public services and a more efficient and productive economy.

In the dynamic landscape of Indian workplaces, the advent of Artificial Intelligence (AI) marks a transformative inclusion of work-life balance, reshaping not only how work is done but also how professionals perceive their careers. A resounding 60% of Indian employees, as per NASSCOM, express a collective optimism about AI's transformative potential, viewing it not as a disruptor but as a catalyst for a more fulfilling work experience. The positive impact on productivity is substantiated by studies, such as those by Forrester, revealing a remarkable 15-20% increase due to AI-powered automation of repetitive tasks. This isn't merely about efficiency; it's a liberation of professionals from mundane activities, allowing them to redirect efforts toward higher-value, more engaging work. The result is not just increased job satisfaction but a strategic utilization of skills that contribute to individual growth.

Flexible work arrangements, facilitated by AI collaboration tools, play a pivotal role in reducing stress and enhancing work-life balance, as evidenced by studies from Stanford and Upwork. This paradigm shift goes beyond mere satisfaction; it becomes a retention strategy, as professionals find equilibrium in blending personal and professional responsibilities. Looking to the future, the potential of AI is even more profound. Predictive analytics can identify and address workplace safety hazards, creating safer environments and reducing accidents. Personalized learning and development platforms, infused with AI, enable continuous skill improvement, contributing to increased job satisfaction and fostering career progression.

AI's active contribution to positive work experiences spans across industries. In customer service, AI-driven chatbots streamline inquiries, allowing human representatives to tackle complex issues, enhancing both job satisfaction and skill utilization. The statistics reinforce these trends. NASSCOM reports that 80% of Indian organizations experience improved decision-making after implementing AI solutions. Telemedicine

initiatives, supported by AI, connect doctors and patients in remote areas, not only addressing healthcare challenges but also creating new opportunities for healthcare professionals. Additionally, the government's Digital India program further signifies a commitment to leveraging AI for more efficient public services and a productive economy.

Fostering fulfilling career growth in the era of AI goes beyond technology implementation; it's about creating an environment where professionals thrive. It involves recognizing AI as a collaborator, not a replacement, and embracing flexibility, well-being, and continuous learning as essential elements of a progressive workplace. As India navigates this paradigm shift, the focus on human-centric approaches ensures that AI becomes a tool for empowerment, propelling individuals toward more meaningful and fulfilling career trajectories.

## India's Strategic Advantages for AI for Dynamic, Mobile, and Future – Ready Workplace

India's potential for AI in shaping dynamic, mobile, and fulfilling work cultures is not simply a technological leap, but a transformative shift in the way we work, live, and collaborate. Leveraging its unique advantages in talent, infrastructure, and entrepreneurial spirit, India can position itself as a global leader in this evolving landscape. Here are some factors that influence the rethinking of workforces and workplaces of the future.

### 1. Talent Pool for Dynamic Innovation :

• **Large and Growing Workforce :** India boasts over 500 million young and tech-savvy workers, forming the world's largest talent pool. This demographic dividend presents an ideal canvas for implementing AI-powered solutions that empower and engage employees.

• **Embrace of Flexible Work :** A significant 72% of Indian employees prefer hybrid work models, highlighting a growing desire for dynamic work arrangements. AI-powered tools can facilitate seamless collaboration and productivity regardless of location, fostering a flexible and mobile work culture.

• **Upskilling and Reskilling :** India's focus on upskilling initiatives, like Skill India and Digital India, equips its workforce with the adaptability required in an AI-driven world. AI-powered learning platforms can personalize learning journeys and equip individuals with the skills needed for thriving in dynamic work environments.

## 2. Infrastructure for a Mobile Workplace:

• **Digital Connectivity :** With over 600 million active internet users, India possesses a robust digital infrastructure that supports remote work and collaboration. This connectivity empowers employees to work from anywhere, fostering a mobile and flexible work culture.

• **Evolving Workspace Ecosystems:** Growing investments in co-working spaces and shared work environments cater to the needs of mobile workforces. These dynamic workspaces facilitate collaboration, innovation, and community, even when physical location may vary.

• **Government Support :** Initiatives like Startup India and Digital Skilling Mission promote the development of new work models and support independent workers, fostering a dynamic and entrepreneurial work environment.

## 3. Entrepreneurial Spirit of Young India :

• **Thriving Startup Ecosystem :** India boasts over 2,000 startups actively developing AI solutions for work culture and talent management. This vibrant ecosystem fosters innovation and drives the development of dynamic and fulfilling work models.

• **Focus on Employee Well-being :** AI-powered tools can automate administrative tasks and streamline processes, freeing up human resources to focus on employee well-being initiatives. This focus on employee well-being creates a more fulfilling and sustainable work environment.

• **Personalized Work Experiences :** AI-powered platforms can personalize learning and development paths, career guidance, and even work assignments based on individual strengths and preferences. This personalization fosters a sense of fulfillment and purpose in employees' work.

## Charting the Path to a Fulfilling Future

In navigating the transformative landscape of Artificial Intelligence (AI) integration across Indian industry, workplaces, homes, and beyond, a vision emerges — a future defined by dynamism, mobility, and unparalleled fulfillment. This journey unfolds through strategic imperatives that not only harness the immense potential of AI but also prioritize ethical considerations, collaboration, and continuous learning.

• **Ethical AI Development :** At the heart of this journey lies the commitment to ethical AI development. By placing ethical considerations at the forefront of AI implementation, we lay the foundation for a trustworthy and inclusive work culture. This commitment ensures that the benefits of AI are not only realized but are accessible to all, fostering an environment where innovation aligns seamlessly with fairness and responsibility.

• **Collaboration and Partnerships :** The path to fulfillment is paved through collaboration — an open exchange of ideas and expertise between government, industry, academia, and workers. As these stakeholders join forces, a collective vision for responsible AI development takes shape. Through partnerships, we create an ecosystem that nurtures the responsible use of AI, fostering a culture where progress is shared, and the benefits are distributed equitably.

• **Continuous Learning and Adaptation :** The journey is dynamic, requiring a commitment to continuous learning and adaptation. Investing in research and development, upskilling programs, and ongoing innovation becomes the compass guiding us through the ever-evolving landscape of AI. This commitment ensures that our workforce stays at the forefront of AI advancements, propelling India into a leadership role in the global AI arena.

By capitalizing on its talent pool, digital infrastructure, and entrepreneurial spirit, and focusing on ethical development, India can unlock the transformative potential of AI for creating dynamic, mobile, and fulfilling work cultures. This shift will not only empower individuals and businesses but also shape a future of work that is more sustainable, inclusive, and ultimately, more fulfilling for all. The road ahead involves a commitment to responsible innovation and creative problem-solving. A focus on ethical AI is paramount, ensuring fairness, transparency, and accountability in the development and deployment of AI solutions. Collaboration between stakeholders — government, industry, academia, and civil society — is vital to ensuring inclusive and equitable access to an AI-powered future. Continuous investment in research and development, with ongoing funding and support for research institutions and startups, is essential to push the boundaries of AI in India. Addressing data privacy concerns through robust data governance frameworks becomes imperative to protect user privacy and ensure data security. By leveraging India's unique advantages and embracing responsible innovation, the future of AI holds immense promise.

## Uniting India's Talent and Accelerating Economic Development

In recent years, the integration of artificial intelligence (AI) into various sectors has ushered in a transformative era for rural and urban India. AI-powered platforms are playing a pivotal role in connecting rural talent with remote work opportunities, effectively breaking geographical barriers and providing flexible employment options. According to the National Association of Software and Service Companies (NASSCOM), predictive analytics tools are optimizing talent allocation based on skills and location, ensuring that rural individuals are considered for suitable jobs across the country. This not only broadens the employment landscape for rural communities but also contributes to overall economic growth. Furthermore, the advent of AI-driven financial inclusion platforms is making significant strides in addressing the needs of unbanked populations in rural areas. These platforms provide access to essential financial services such as microloans and insurance, fostering economic development and entrepreneurship. The impact is substantial, as previously marginalized individuals are empowered to participate more actively in economic activities, thereby contributing to the overall well-being of rural communities, and the growth of India.

In the realm of e-commerce, AI-powered platforms are facilitating direct connections between rural artisans and producers with consumers. This innovative approach bypasses traditional middlemen, allowing rural craftsmen to reach a broader market and significantly increasing their income potential. Microsoft has been at the forefront of these initiatives, demonstrating the power of AI in reshaping the economic landscape for rural entrepreneurs. AI is proving to be a valuable ally for rural and urban communities by refactoring supply chain disruption and ensuring that trade opportunities are capitalized. Advanced weather forecasting and early warning systems, developed by institutions such as the Indian Institute of Tropical Meteorology, are helping rural areas prepare for natural disasters. This not only reduces risks but also safeguards lives and livelihoods, showcasing the humanitarian impact of AI in vulnerable regions, while safeguarding the wealth of this nation - Agricultural yield.

The agricultural sector, a cornerstone of life in rural and urban India, is also benefiting from AI innovations. Smart irrigation systems, driven by AI algorithms, optimize water usage and resource management, pro

moting sustainable farming practices. The work led by the Indian Institute of Technology Bombay (IIT-Bombay) in this regard is contributing to increased efficiency and environmental sustainability in rural agriculture. Rural infrastructure development is another critical aspect where AI is making substantial contributions. Initiatives endorsed by the National Institution for Transforming India (NITI Aayog) leverage AI to improve connectivity, access to clean water, sanitation, and overall quality of life in rural communities. These developments align with broader governmental efforts, such as the Digital India program, which aims to bridge the digital divide and ensure equitable access to AI benefits for rural populations.

While the impact of AI in rural India is promising, challenges persist. Digital literacy gaps must be addressed to ensure that the benefits of AI are accessible to all. Culturally relevant AI solutions are crucial to address the specific needs of diverse rural communities. Moreover, responsible AI development is paramount to prevent bias and discrimination, and collaboration between government, private sectors, and NGOs is essential to ensure inclusive adoption and maximize the positive impact of AI across India's rich and diverse landscape. As AI research and development initiatives focused on rural applications continue to gain momentum, the future holds the promise of a more inclusive and empowered rural and urban India - connecting India's vast and diverse talent ecosystem to opportunities that will shape the future of commerce, trade and social development.

This journey with AI shapes a future of work that transcends conventional boundaries — one that is sustainable, inclusive, and ultimately, fulfilling for all. It beckons us to envision a landscape where AI augments our capabilities, enhances our experiences, and propels us towards a future where work is not just a means to an end but a source of enduring satisfaction and achievement. In the inclusive integration of AI, India finds not just technological progress but the promise of a future that is both transformative and deeply fulfilling.

# THE ROAD AHEAD: PREPARING FOR 2030 – NCVET

## National Council of Vocational Education and Training (NCVET): The Impact of AI on the Future of Work, Skilling & Mobility

### 1. Introduction :

Artificial Intelligence (AI) has emerged as a transformative force, restructuring the landscape of industries and redefining the nature of work. As we progress into the digital age, the integration of AI technologies into various facets of business and daily life is inevitable, with profound implications for the future workforce and the skills required to thrive in this evolving environment.

AI technologies, ranging from machine learning and natural language processing to robotics and automation, have the potential to streamline processes, boost efficiency, and drive innovation. However, this technological revolution also poses challenges, particularly in terms of job displacement, evolving skill requirements, and the need for continuous upskilling.

The nature of work is undergoing a paradigm shift, with routine and repetitive tasks increasingly being automated. While this automation can enhance productivity, it necessitates a shift in the skill sets demanded by the job market. There is a growing demand for individuals who not only possess technical proficiency in AI-related domains but also exhibit qualities such as adaptability, critical thinking, and creativity.

The Fourth Industrial Revolution, characterized by the integration of AI, demands a workforce that is not only adept in utilizing AI tools but also capable of collaborating with AI systems. This shift places a premium on digital literacy, cognitive flexibility and a deep understanding of ethical considerations in AI.

**Dr. Nirmaljeet Singh Kalsi**
IAS (Retd.) (Chairperson, NCVET)

### 2. Introduction to the National Programme on AI Skilling Framework :

Artificial Intelligence (AI) has emerged as a transformative Against this backdrop of the evolving nature of work, The National Programme on AI (NPAI) Skilling Framework, led by NCVET, Ministry of Skill Development & Entrepreneurship (MSDE), stands as a visionary initiative poised to equip India with essential skills in Artificial Intelligence (AI), including emerging technologies like Generative AI. The framework's key facets underscore the paramount importance of skill development in navigating the evolving landscape of AI.

**A Three-tier Skilling Approach**

The NPAI Framework intelligently categorizes AI skilling into three tiers -"For All" focusing on basic digital literacy; "For Many" catering to AI-empowered individuals seeking digital fluency; and "For Few" targeting AI-skilled professionals with digital mastery. This approach ensures a nuanced response to diverse skilling needs, acknowledging the varied roles within the AI ecosystem.

In the context of the impact on the future workforce and skilling, this stratified approach holds significant implications.

**A. Inclusivity and Accessibility :** The tiered approach ensures inclusivity by addressing the basic digital literacy needs of the general population **("For All").** This foundational layer aims to equip individuals with the skills necessary to navigate AI interfaces responsibly. This inclusivity, starting from the grassroots level, lays the groundwork for a workforce that is more attuned to the digital era.

**B. Empowering an AI-Fluent Workforce :** The tier focused on **"For Many"** recognizes the importance of digital fluency for individuals empowered by AI. As AI becomes integrated into various fields, fostering digital fluency is crucial for enhancing productivity and understanding the practical applications of AI tools. This tier anticipates a future workforce that not only utilizes AI but also leverages it to augment their professional capabilities.

**C. Nurturing AI Mastery for Specialized Roles :**

The highest tier, **"For Few,"** acknowledges the critical role of AI-skilled professionals with digital mastery. These individuals possess advanced technical expertise in areas like coding, data analytics, and machine learning. As AI becomes more integral to industries, this tier ensures the presence of highly skilled professionals capable of developing sophisticated AI products and solutions across diverse domains.

**D. Addressing Diverse Roles within the AI Ecosystem:**

The stratified approach recognizes the diverse roles emerging within the AI ecosystem. From end-users with basic literacy to specialized professionals driving innovation, each tier plays a vital role in the broader AI landscape. This forward-thinking approach ensures that the workforce is equipped with the right skills at the right levels to meet the demands of an AI-centric future.

**E. Future-Proofing the Workforce:**

By acknowledging the varied roles and skill requirements, the stratified skilling approach contributes to future-proofing the workforce. As AI continues to evolve, this approach allows for adaptability and ensures that individuals at different stages of their careers can continually upskill/ reskill to remain relevant in the ever-changing job market.

**In essence, the National Programme on AI Skilling Framework** serves as a visionary response to the challenges and opportunities presented by AI in the workforce, as presented below :



**Fig:** A three-tier workforce model impact: meeting the demands of the emerging businesses due to Gen AI adoption

It goes beyond traditional skilling programs, addressing the nuances of AI literacy, digital fluency and mastery. As we delve into the transformative impact of this framework on the future of work and skilling, it is essential to recognize its context within the broader narrative of AI's influence on the workforce and the imperative need for strategic skilling initiatives.

## 3. Ethical Considerations in AI Training

Ethical considerations in AI are imperative to ensure fairness, transparency, and privacy, addressing biases and preventing discrimination. This commitment safeguards against security threats, promotes human oversight in decision-making, and fosters public trust, contributing to the responsible and positive impact of AI on society. Emphasizing ethics in AI training underscores dedication to long-term societal well-being and the ethical deployment of advanced technologies.
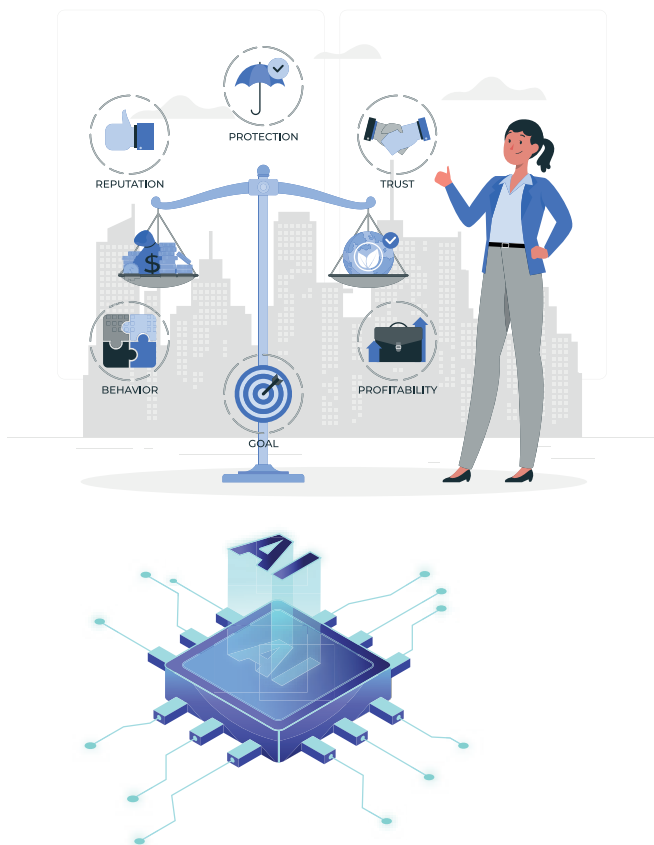


**Fig:** Ethical AI Consideration

A laudable emphasis on ethics permeates the framework, with a mandated 10% module dedicated to Ethical AI in every course. This inclusion underscores the commitment to responsible AI development, transparency, fairness, and privacy—a crucial aspect in ensuring the ethical deployment of AI systems.

## A. Positive Impact :

**1. Responsible AI Development:**
Emphasis on ethical AI development can lead to the creation of fair and accountable systems.

**2. Inclusive Design:** Ensuring inclusivity in AI development helps mitigate biases and ensures that AI benefits a diverse range of users.

## B. Concerns/Challenges :

**1. Bias and Fairness :** Unintended biases in AI algorithms can perpetuate existing societal inequalities, requiring continuous scrutiny and adjustment.

**2. Transparency Challenges :** Achieving transparency in AI decision-making processes remains a challenge, raising concerns about accountability and trust.

The future of work in the age of AI is a dynamic landscape that necessitates careful navigation. Addressing the challenges and maximizing the positive impacts requires collaborative efforts from government, industries and educational institutions to ensure a balanced and inclusive future for the workforce.

## 4. Holistic approach in education and industry alignment

**1. AI in Early Education :** Unintended biases in AI Recognizing the imperative to start early, the framework recommends the introduction of AI concepts in early school levels. This early exposure aims to cultivate a generation with innate familiarity and comfort in utilizing AI tools, paving the way for a workforce that seamlessly integrates AI into various domains.

**2. Flexibility and Agility in Course Creation :**

Acknowledging the rapid evolution of AI tools, the framework advocates for flexibility in course creation. The incorporation of smaller modules, such as Micro-credentials and National Occupational Standards (NOSs), provides learners with the agility to adapt to the swiftly changing AI landscape and choose modules aligned with their interests and needs.

**3. Industry Relevance and Best Practices :**

A noteworthy feature is the integration of industry use cases and best practices within the course content. This practical approach bridges the gap between theoretical knowledge and real-world applications, enriching learners with insights from industry experiences.

**4. Financial Considerations for Quality Skilling :**

The framework confronts the challenge of inadequate cost norms for AI skilling by proposing suitable cost standards. This financial foresight is pivotal for maintaining the quality of training, sustaining AI skilling programs, and meeting the escalating demand for proficient AI professionals in the workforce.

# 5. AI as a Service for the Future of Work

In this ever-evolving landscape of AI and skill development, the advent of Artificial Intelligence as a Service (AIaaS) is emerging as a disruptive force with the potential to revolutionize the skilling ecosystem. Its far-reaching impact is poised to democratize access to AI capabilities, ushering in innovative solutions and tools that not only enhance learning experiences but also streamline processes across diverse industries.
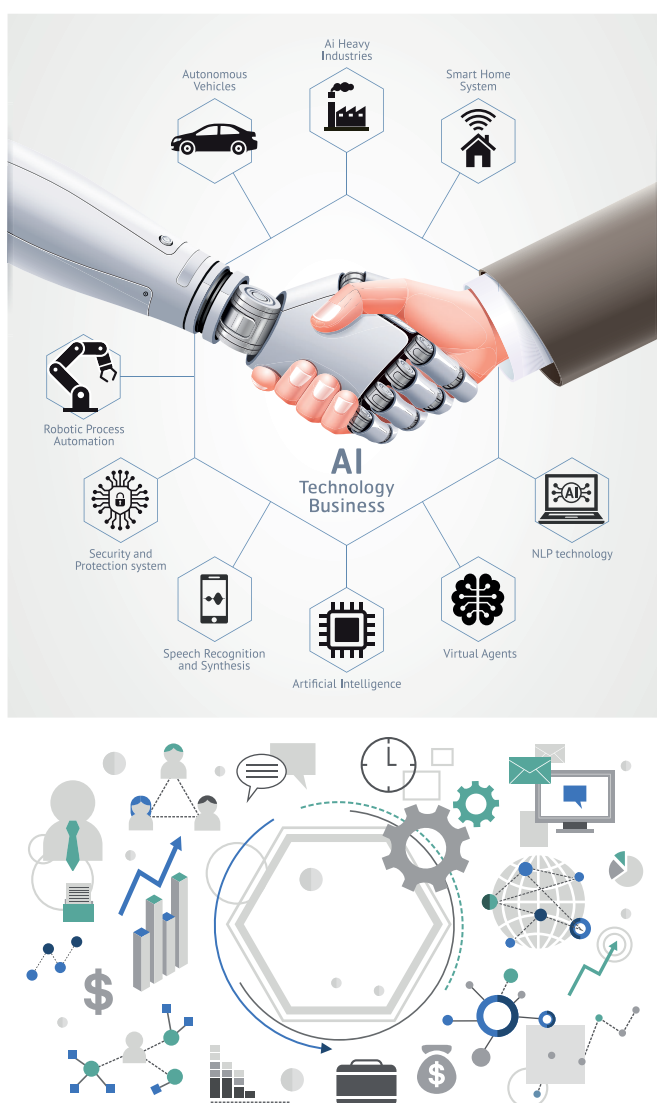


**Fig:** AI as a Service

The integration of AI as a Service is poised to have a profound impact on the future of work and skilling, ushering in transformative changes across various dimensions :

## A. Accessibility and Inclusivity :

**1. Impact :** AI as a Service democratizes access to AI capabilities, making advanced technologies available to a broader audience.

**2. Significance :** This fosters inclusivity by allowing individuals with diverse backgrounds and skill levels to engage with AI tools, thereby reducing traditional barriers to entry into the AI domain.

## B. Flexible Skill Acquisition :

**1. Impact :** AI as a Service provides a flexible learning environment where individuals can engage with AI tools and services in real-world applications.

**2. Significance :** This facilitates hands-on, experiential learning, enabling learners to adapt to the rapidly evolving AI landscape and acquire skills in a more dynamic and responsive manner.

## C. Practical Application of Skills :

**1. Impact :** Integrating AI as a Service into training programs enables the practical application of AI skills in real-world scenarios.

**2. Significance :** Learners gain valuable insights into deploying AI techniques, enhancing their ability to implement AI solutions across various domains, and bridging the gap between theoretical knowledge and practical proficiency.

## D. Transformation of Work Processes :

**1. Impact :** Organizations leveraging AI as a Service can seamlessly integrate AI capabilities into their operations.

**2. Significance :** This transformation of work processes enhances efficiency, drives innovation, and enables a collaborative environment where human workers and AI systems complement each other, reshaping the traditional dynamics of work.

## E. Scalability and Innovation :

**1. Impact :** AI as a Service offers scalable AI solutions, allowing organizations to experiment and innovate without significant upfront investments.

**1. Significance :** This promotes a culture of continuous innovation and experimentation, fostering the development of new solutions and applications in AI across diverse industries.

## F. Addressing Skill Gaps :

**1. Impact :** AI as a Service helps bridge skill gaps by providing on-demand access to AI capabilities.

**2. Significance :** Organizations can utilize these services to augment the skills of their workforce, ensuring a smoother transition to AI-driven processes and addressing the evolving skill requirements in the AI domain.

## 6. Impact of AI on the Future of Work in reference to Various Sectors

**The impact of Artificial Intelligence (AI) on various sectors** and the future of work and skilling is profound and multifaceted. Here's a brief overview of how AI is influencing different sectors :

### A. People with Disabilities (PwD) :

1. AI technologies have the potential to create more inclusive workplaces by providing tools and accommodations for individuals with disabilities.

2. Adaptive technologies, like speech recognition and natural language processing, can enhance accessibility and facilitate communication for PwD.

### B. Agriculture :

1. AI-powered drones and sensors can be used for precision agriculture, optimizing resource use, and improving crop yield.

2. Automated machinery and AI algorithms can assist in monitoring crop health, predicting diseases, and optimizing irrigation.

### C. Healthcare :

1. AI is transforming healthcare through predictive analytics, personalized medicine, and improved diagnostics.

2. AI applications include medical imaging analysis, drug discovery, virtual health assistants, and predictive modeling for disease outbreaks.

### D. Transportation and Supply Chain :

1. Autonomous vehicles and AI-driven logistics are reshaping transportation and supply chain management.

2. AI algorithms optimize route planning, reduce fuel consumption, and enhance overall efficiency in the movement of goods.

### E. Legal :

1. AI is used in legal research, contract analysis, and document review, streamlining legal processes.

2. Predictive analytics assist in assessing case outcomes and legal risk, making legal services more efficient.

### E. Automotive :

1. Self-driving cars are a prominent application of AI in the automotive sector, with AI algorithms enabling navigation, obstacle detection, and decision-making.

2. AI is also used in manufacturing processes to enhance production efficiency and quality control.

### E. Green Jobs :

1. AI contributes to the development of sustainable practices in various industries, promoting green jobs.

2. Energy optimization, environmental monitoring, and sustainable resource management are areas where AI can make a significant impact.

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1. AI contributes to the development of sustainable practices in various industries, promoting green jobs.

2. Energy optimization, environmental monitoring, and sustainable resource management are areas where AI can make a significant impact.

Overall, the impact of AI on the future of work is transformative, with opportunities for increased efficiency, innovation and job creation. Efforts towards inclusive education and training programs are crucial to ensure that the benefits of AI are accessible to a diverse and evolving workforce.

## 7. Focus on R&D and Future Job Roles

Acknowledging the importance of innovation, the framework encourages an intensified focus on Research and Development (R&D) in AI and related technologies for mobility. The inclusion of future job roles, especially those stemming from Generative AI, anticipates the evolving landscape and prepares individuals for emerging opportunities.

**Fig:** As AI adoption grows, it will demand significant computing and infrastructure resources for AI mobility

## 8. Cross-Sectoral Skilling Synergies

A notable feature of the framework is its emphasis on cross-sectoral skilling synergies. Recognizing that the impact of AI transcends industry boundaries, the framework suggests the creation of business vertical-specific cross-sectoral courses. This strategic approach ensures that AI skills are not segmented but are integrated seamlessly across various sectors, fostering a more versatile and adaptable workforce.

## 9. Emphasis on Employability Skills, Life Skills, and Soft Skills

Beyond technical competencies, the importance of employability skills, life skills, and soft skills are critical while developing and learning an AI skilling qualification/ course/ module

**A.Critical Thinking:** As routine tasks become automated in the wake of AI integration, there is a notable positive impact on critical thinking skills. The increasing automation of mundane tasks places a premium on cognitive and meta-cognitive abilities. The demand for individuals capable of analytical thinking, problem-solving, and effective decision-making rises significantly. In navigating the complexities of AI-driven systems, employees equipped with strong critical thinking skills become invaluable contributors to strategic decision-making processes.

**B. Creativity and Innovation:** AI serves as a powerful ally to human creativity, fostering a symbiotic relationship that leads to a positive impact on the workforce. Individuals with a pronounced capacity for creativity and innovation are poised to be in high demand. While AI takes care of repetitive and algorithmic tasks, human creativity is leveraged to ideate, conceptualize, and innovate. This synergy not only enhances productivity but also underscores the value of creative thinking in driving solutions and breakthroughs.

In the face of AI-driven transformations, a crucial concern arises regarding the adaptability of the workforce. Workers are required to navigate evolving technologies and dynamic work environments. This necessitates a robust set of employability skills, with adaptability and resilience taking center stage. Employees who can swiftly adapt to changing circumstances, learn new tools and methodologies, and embrace innovation that are better positioned to thrive in an environment where AI continually reshapes job roles and expectations.

NCVET strives to provide a broad-based and exhaustive pool of ES/LS/SS modules/sub-modules, which also include the 21st Century skills and address the sectoral and industry demand as well as general and vocational education ecosystem.

The NCVET aims to develop a flexible model of ES, which will encompass Soft Skills and Life Skills in a dynamic framework. This will also address the challenges faced in the implementation of the existing NOS. The focus is to provide solutions to the Skilling Ecosystem, which gives them flexibility to develop NOS by assembling the required modules/sub-modules as per the industry/ job role requirement.

**All three types of skills contribute to an individual's overall competence and success.**

**Essential for personal and professional growth.**

**Complement each other for fulfilling lives and career success.**

**SOFT SKILLS**
They are interpersonal and social abilities for both personal and professional contexts.

**LIFE SKILLS**
They are more general and relevant to various aspects of daily life.

**Employability Skills**
These skills are tailored to specific roles and tied to professional tasks.

**Fig:** Employability Skills/ Life Skills/ Soft



Communication Skills

Digital Fluency

English and Foreign Language Literacy

Interpersonal/ Social Skills

EMPLOYABILITY SKILLS

Workplace & Job Related Skills

Cognitive & Meta-Cognitive Skills

Foundational Skills

Citizenship & Constitutional Values

Self Employment & Entrepreneurship

**Fig:** As AI adoption grows, it will demand significant computing and infrastructure resources for AI mobility

| 9 MODULES | 47 SUB MODULES | Mandatory | BASIC | INTER-MEDIATE | ADVANCE | HIGH ORDER |
|---|---|---|---|---|---|---|
| **Cognitive & Meta-Cognitive Skills** | Analytical & Critical Thinking | ✕ | ✕ | ✕ | ✓ | ✓ |
| | Problem Solving & decision-making | ✕ | ✕ | ✕ | ✓ | ✓ |
| | Strategic Thinking and design Thinking | ✕ | ✕ | ✕ | ✓ | ✓ |
| | Information Collection, Analysis and Synthesis | ✕ | ✕ | ✕ | ✓ | ✓ |
| | Creativity and Innovation | ✕ | ✕ | ✓ | ✓ | ✓ |
| **Digital Fluency** | Information Technology | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Internet Navigation | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Adaptability & Learning Agility in new technologies | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Cybersecuity | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Ethical Use of Technology | ✓ | ✓ | ✓ | ✓ | ✓ |

**6 modules and 26 sub-modules** can be stacked up to develop a NOS of employability skill for **Forensic Analyst.**

**Communication Skills**
Listening skills, reading skills, written communication, non-verbal communication

**Interpersonal/ Social Skills**
Collaboration & Team work, behavioral skills, conflict resolution

**Workplace and Job related skills**
Safety & Health, Plan, Organize & coordinate, resource management, project management

**Citizenship & Constitutional Values**
Constitutional values, Cultural literacy, civic literacy

**Cognitive & Meta-Cognitive Skills**
Analytical & Critical Thinking, Problem solving & decision making, strategic thinkning, information collection, analysis & synthesis

**Digital Fluency**
I.T, Internet Navigation, Adaptability & Learning Agility, Cybersecurity, Ethical use of Technology
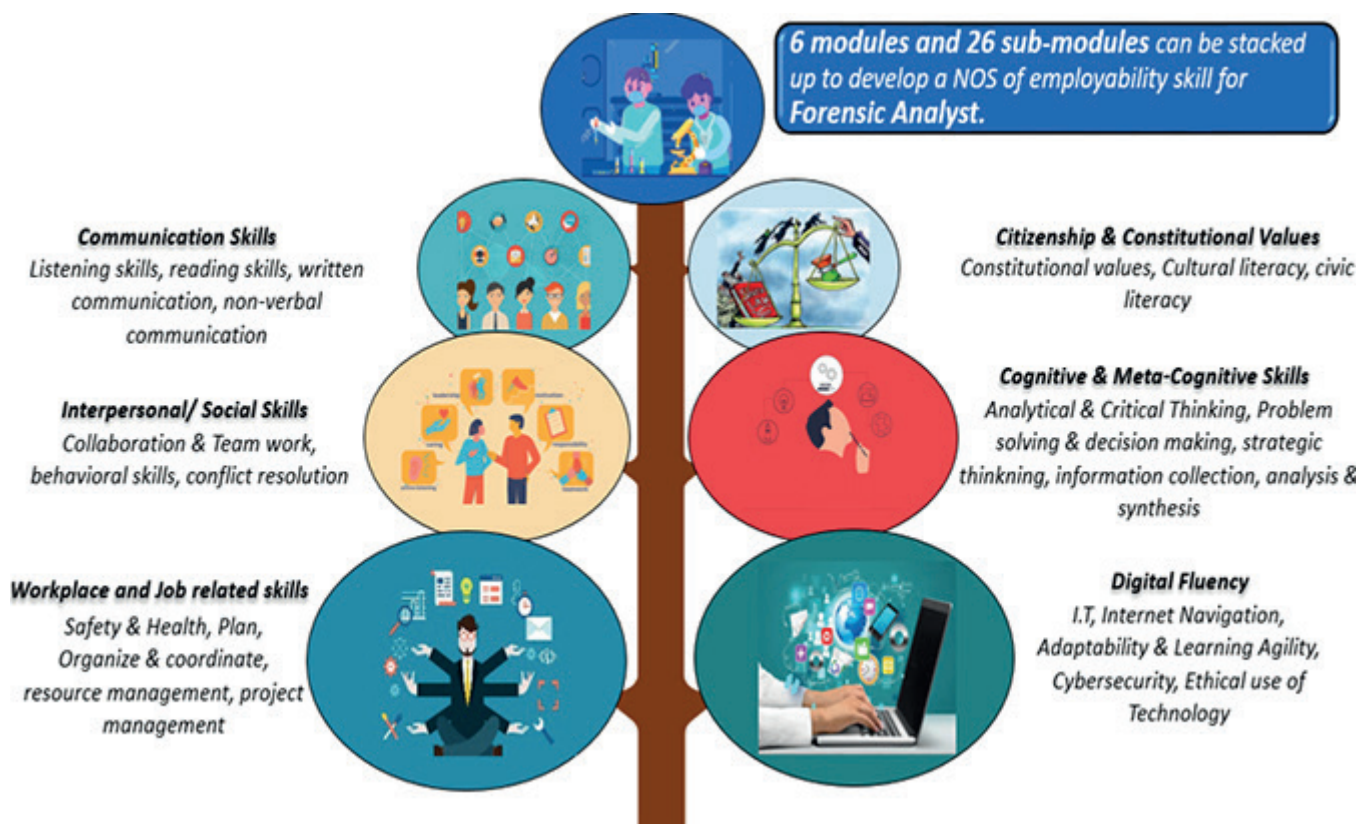
## 10. Lifelong Learning and Continuous Upskilling/Reskilling

A notable feature of the framework is its emphasis on cross-sectoral skilling synergies. Recognizing that the impact of AI transcends industry boundaries, the framework suggests the creation of business vertical-specific cross-sectoral courses. This strategic approach ensures that AI skills are not segmented but are integrated seamlessly across various sectors, fostering a more versatile and adaptable workforce.

## 11. Conclusion

In conclusion, the National Programme on AI Skilling Framework, emerges as a transformative roadmap for the dynamic integration of artificial intelligence into the fabric of India's workforce. With a nuanced stratification of skilling requirements, emphasis on early education, ethical considerations, and a focus on technical expertise, the framework not only addresses the immediate needs of AI proficiency but also lays the foundation for a workforce that is adaptable, innovative, and ethically responsible. Moreover, by acknowledging the importance of employability skills, cross-sectoral synergies, and a commitment to lifelong learning, the framework positions India to not merely keep pace with AI advancements but to lead in shaping the future of work. This comprehensive approach, encompassing both positive impacts and adaptive responses to challenges, ensures that the nation can fully harness the potential of AI, fostering economic growth, innovation, and a highly skilled workforce.

# SKILLING STRATEGIES FOR THE FUTURE



## FICSI - Food Industry & Capacity Skill Initiative

Food Industry & Capacity Skill Initiative (FICSI) is a not-for-profit organization playing a crucial role as the Sector Skill Council for Food Processing under the Skill India initiative. The reviewed year marked a significant return to post-pandemic normalcy, allowing the resumption of skilling activities. Several noteworthy milestones were achieved during this period.

FICSI attained recognition as an Awarding Body from the National Council for Vocational Education and Training (NCVET). This accreditation places FICSI's skilling programs, learning resources, training centers, and certifications within the official framework, serving as a testament to quality for stakeholders. Actively participating in various Central and State Government-sponsored skilling training schemes, including PMKVY, NULM, DDUGKY, Skill hubs, and Samagra Shiksha, FICSI demonstrated its commitment to supporting skill development initiatives.

Furthermore, FICSI played a vital role in upskilling the workforce in the food industry, offering tailored online and offline food safety and hygiene training programs. These programs, designed in accordance with industry standards and trends, equip learners with the necessary skills and knowledge to ensure the safe and hygienic production and storage of food. Introducing innovative learning methods, FICSI launched the Food Vaarta podcast channel. The episodes feature industry experts, providing listeners with insights into best practices in food processing.

As part of the Azadi ka Mahotsav initiative, FICSI organized a series of monthly knowledge-sharing webinars, offering students and practitioners an opportunity to

hear from industry leaders. FICSI also entered into two separate funding agreements with reputable social organizations to develop and conduct training and capacity-building programs in the areas of food fortification and millet processing. With the support of Industry CSR funds, FICSI initiated various projects aimed at recruiting, training, and deploying the workforce, empowering women, and building consumer awareness.

Actively aligning with the formal education sector, FICSI is introducing skill-based training programs under the Government's New Education Policy. Several leading universities and colleges have signed MoUs, and implementation is already underway. FICSI organized the annual National Food Processing Aptitude Test (NFPAT) for students in food technology and related subjects. This online assessment gauges candidates' readiness for placement, with high scorers receiving placement assistance



## Leather Sector Skill Council (LSSC)

**Greetings from the Leather Sector Skill Council!**

The Indian Leather, Leather Products, and Footwear Industry holds a prominent place in the Indian economy. This sector is known for its consistency in high export earnings and it is among the top ten foreign exchange earners for the Country.

The leather industry is an employment-intensive sector, providing jobs to about 4.42 million people, mostly from the weaker sections of the society. Women's employment is predominant in the leather products sector with about 40% share. The past year has been an eventful year for the Leather SSC. We trained 9657 youth, and assessed and certified 8045 youth under various government schemes.

We firmly believe that our country has the human resource potential to take it to a 5 Trillion USD economy by 2027 as envisaged by the Hon'ble Prime Minister. Skilling the youth, Upskilling, and Reskilling the existing workforce are three drivers that will help in achieving this milestone. A skilled workforce has to be

complemented by technology and automation to improve productivity and to track the increasing industry compliance to international environmental standards for a sustainable future.

We at Leather SSC firmly believe in Mahatma Gandhi's principle of Change "Be the change that you wish to see in the world."

The Leather Sector Skill Council, in addition to curriculum development, skill training, and assessments, has been a change catalyst for the industry, working on supporting the adoption of technology by the industry through its initiatives to introduce Industry 4.0 practices in the sector.

We have successfully implemented an IoT (Internet of Things) based production count tracking system as part of a larger production automation system.

We launched the SCALE Studio Android app for people desiring to learn DIY leather craft from the comfort of their homes catering to micro-entrepreneurial talent required for the growing bespoke D2C market.

In an endeavor to revolutionize the way the existing workforce can be skilled and to provide new aspirants with the opportunity to acquire skills through simulated and immersive learning technology, we launched Virtual Reality course modules for Computerized Stitching Machine and Tanning Drum operations.

We signed an MoU with the Australian Trade and Investment Commission (Austrade) - India to collaborate in TVET programs and introduce Australian training standards in the Indian leather sector.

We signed an MoU with the Advanced Manufacturing Technology Development Centre, IIT-Madras for developing Smart Manufacturing systems, 3D Printing, Dies, Moulds, and composite material as a part of introducing Industry 4.0 practices for the Footwear and Leather sector.

We facilitated the launch of the B.Voc Footwear Manufacturing program by the Anna University, Chennai to create a talent pool of graduates skilled in footwear manufacturing.

We were invited to the World Skills competition as observers and to participate in the Asia Skills General Assembly as a precursor to feature leather trades in the competition category of these international competitions dubbed as the 'Olympics' of Skills and provide Indian students a platform to showcase their talent in front of an international audience.

This skill report prepared by Wheebox provides insights into the skill gaps and measures taken by our sector skill council to introduce futuristic skills in the sector.



## Automotive Skills Development Council (ASDC)

As the CEO of the Automotive Skills Development Council (ASDC), I am pleased to acknowledge the rapid advancements in technology that are creating unprecedented opportunities. The Indian industry, contributing 7.1% to the GDP and comprising 49% of the manufacturing sector, stands as a pivotal force in employment generation.

For the industry to sustain and further accelerate its momentum, talent. and skills emerge as key success factors. The role of ASDC becomes crucial in uplifting the Indian automotive industry through impactful initiatives in skill development. Our efforts have resulted in providing dignified and stable employment opportunities to the youth of the country, aligning with the industry's progress.

ASDC has played a significant role in delivering training to the youth in the automotive sector. A joint initiative of the Government of India, SIAM, ACMA, and FADA, ASDC has been instrumental in upskilling the workforce in the automobile industry. In our dynamic business environment and ever-evolving technology landscape, we are committed to providing the youth with the right skills and opportunities.

At ASDC, we lead the necessary transformation in our systems and curriculum to keep pace with changing technology. We believe in fostering a collaborative learning environment to help individuals cope with the challenges faced in the automotive industry.

In collaboration with the Ministry of Heavy Industries, ASDC has proposed new qualifications under the Capital Goods Promotion Scheme 2, focusing on new technologies aligned with the Production Linked Incentive PLI Scheme. Our commitment to developing skilled

manpower is unwavering, ensuring that every individual, from experienced professionals to freshers, receives the necessary upgrades in their skills.

ASDC has been proactive in conducting various activities and events for the development of students from a young age. In today's competitive world, industry-specific skills are crucial, and ASDC is dedicated to spreading awareness about the importance of skills in one&#39;s career. We have launched the National Olympiad in collaboration with CBSE, the leading school board in the country.

Under the National Apprenticeship Promotion Scheme (NAPS), ASDC is providing on-the-job training to candidates, having successfully engaged over 1.5 lakh apprentices. Our outreach extends through job fairs across the country, covering regions like Delhi NCR, Jharkhand, Gujarat, and more.

ASDC collaborates with industry and academia to develop training programs and certification standards for new automotive technologies, including electric and hybrid vehicles. We emphasize on-the-job training, apprenticeships, and online learning resources to keep workers updated with the latest automotive trends. Our commitment to staying abreast of technological advancements is reflected in collaborations with International entities like GIZ GmbH and Research Triangle Institute (RTI), focusing on e-mobility training for service technicians.

The advanced automotive skill ecosystem in India is expected to create numerous emerging job roles and career avenues. The surge in electric vehicles will demand skilled technicians and engineers capable of managing EV design , manufacturing maintenance quality, and repair. ASDC is actively involved in upskilling and reskilling programs to prepare the workforce for these advanced roles. As we move towards a sustainable future, ASDC remains dedicated to shaping the skills of the workforce, ensuring they are well-prepared for the challenges and opportunities presented by the evolving automotive industry.

# INITIATIVES BY INDIAN SKILLING AND EDUCATION FRONTRUNNERS

## All India Council For Technical Education (AICTE)

Over the years, the All India Council for Technical Education (AICTE), has been at the forefront of imparting quality and technical education through various measures, schemes, and initiatives. It has been the endeavor of AICTE to make quality technical education inclusive and affordable to all. AICTE has taken several proactive measures for planned and qualitative growth of technical education and effectively implemented the same. AICTE has changed its role from the regulator to facilitator and has been ensuring that with changing times and discoveries/changes in technical education, the curriculum remains relevant and dynamic. Relevant changes have been incorporated in the Approval Process Handbook which is published annually. The focus has always been on the quality of education, simplicity of procedures, and transparency in implementation.

National Education Policy 2020 (NEP) aims to bridge the gap between current learning outcomes and what is required by undertaking major reforms that bring the highest quality, equity, and integrity into the system. National Education Policy(NEP) envisages multidisciplinary education so that boundaries are removed to promote the overall development of students in different disciplines. In this regard, in line with NEP, AICTE has taken multiple initiatives like imparting technical education in Indian languages, giving flexibility to students, multidisciplinarity, and focusing on innovation at large. In the last year, AICTE has undertaken prominent initiatives to expand the horizons of technical education. AICTE inked strategic MoUs with Industry giants like Adobe, Microsoft, CISCO, and Salesforce on digital learning, skill mapping and development of students, and capacity building of educators. The partnership signifies a significant step towards empowering students, educators, and institutions with cutting-edge technologies and resources.

To make India a Semiconductor valley, AICTE launched two new courses - a diploma in integrated circuit (IC) manufacturing and BTech or BE (electronics) in VLSI design and technology. AICTE introduced courses in semiconductors such as VLSI design, IC Integrated Chip Designing, Semiconductor Management, and Silicon Chemical Extraction among others to produce skilled professionals who can contribute to the manufacturing and designing of microchips. Because AICTE aims at making India self-reliant in creating microchips. In a significant move towards strengthening India's role in the upgradation of the semiconductor industry, AICTE, under the Ministry of Education's purview, embarked on a mission to enhance India's semiconductor capabilities. A high-level delegation of academic experts, led by AICTE Chairman Prof. T G Sitharam, visited Taiwan in September 2023 and engaged with various Taiwanese universities, paving the way for an array of Memorandums of Understanding (MoUs) between Indian and Taiwanese academic institutions. These MoUs encompass skill development, student exchange programs, and collaborative research and development efforts. Underpinning this initiative is the acknowledgment that semiconductors are integral to virtually every facet of the electronics industry and are poised to become a trillion-dollar industry by 2030. India aims to play a pivotal role in semiconductor manufacturing, necessitating the development of a skilled workforce.

In order to provide skilled education to working professionals, AICTE invited applications from approved institutes to run courses for working professionals from this academic session. The decision has been taken for the continuing education of working professionals, and to help students who cannot afford the fee for higher technical education but are looking for opportunities to earn a degree while working. AICTE is taking every possible measure to interlink industry and academia. Not just the students, but AICTE is keen on the development of faculties and keeping them updated with emerging technologies. Therefore in 2023 various steps have been taken for the development of faculties. AICTE partnered with the Jio Institute and launched a faculty development program focused on Artificial Intelligence (AI) and Data Science. Jio Institute, known for its strong AI and Data Science program, hosted the five-day residential program. The collaboration was inked to introduce a comprehensive faculty development program on AI and data science. The primary goal was to provide academic leaders and senior faculty members with an in-depth understanding of AI and Data Science concepts. One key focus of

the program was the ethical considerations related to the utilization of AI tools for immersive learning experiences.

As far as innovation is concerned, AICTE's Innovation Cell is committed to driving positive change and progress through cutting-edge ideas and creativity. The cell is completely dedicated to fostering innovation and entrepreneurship through its innovative initiatives in collaboration with different ministries and stakeholders. Hackathons like Smart India, KAVACH-Cyber Security, Singapore India, etc are being conducted by AICTE to identify innovative concepts and technology solutions for addressing challenges of different domains. The purpose of such hackathons is to stay at the forefront of innovation, exploring new frontiers of innovation, from AI and sustainability to cutting-edge solutions that will shape the Future.

AICTE has endeavored 1.0 to support the institutions to get autonomy, accreditation ranking, etc. through Margdarshan,1 Adjunct faculty, Unnat Bharat Abhiyan, Research Promotion Scheme. AICTE Doctoral Fellowship(ADF), Short Term Training program (STTP), National Initiative for Technical Teachers Training (NITTT), AICTE – IDEALAB, a MOOCs platform SWAYAM, Start-up Policy, etc. Model Curricula Teacher Training Programmes for both new Teachers and in-service Teachers through ATAL academies, Student Induction Programmes, Mandatory Internship for students, Recognition to the teachers, Examination Reforms, Support for Innovation and entrepreneurship, Industry Interaction Cell, National Perspective Plan are some of the innovative ideas implemented by AICTE. AICTE assures all the stakeholders that it will continue to be a facilitator taking care of the changing needs of all concerned and hopes that with the concerted effort of all concerned, the quality of technical education in India will reach a new pinnacle during the coming days.

# Association of Indian Universities (AIU)





**Dr. Pankaj Mittal**
Secretary General at Association of Indian Universities and Chief Commissioner Guides at Bharat Scouts & Guides

## Transformative Skilling Initiatives by AIU

The Association of Indian Universities (AIU) stands at the forefront of India's efforts to bridge the skill gap and empower its youth for the dynamic job market. Through a multi-faceted approach, AIU's initiatives encompass skill development programs, in-depth skill gap analysis, capacity building for educators, and strategic advocacy and networking. These endeavors collectively contribute to reshaping the nation's talent landscape and preparing the youth for the demands of the future workforce.

### 1. Skill Development Programs :

AIU's Skill Development Network (AISDN) acts as a collaborative platform, linking universities, colleges, and industry partners for targeted skill development programs. Engaging with the government's National Skill Development Mission (NSDM) and the flagship Skill India Mission, AIU designs and delivers courses aligned with industry needs. Specific instances of success include the AISDN collaborating with Tata Motors to train 5,000 youth in automotive skills, resulting in 80% of them securing employment within six months. Another partnership with IBM led to a skill development program in AI and machine learning, benefiting over 1,000 students across 20 universities.

### 2. Skill Gap Analysis and Research :

AIU conducts National Skill Gap Analysis Studies to identify current and future skill demands across industries. The organization delves into research on emerging technologies, such as AI and automation,

assessing their impact on the job market and requisite skills. Active participation in developing national occupational standards and qualifications packs ensures that skill development programs align with industry benchmarks.

### 3. Capacity Building of Faculty and Trainers :

Recognizing the pivotal role of educators, AIU conducts Faculty Development Programs (FDPs) and Training of Trainers (ToTs). These programs equip faculty with the knowledge and skills to deliver effective skill development courses. The organization also develops e-learning modules, providing flexible and accessible training opportunities for faculty and trainers.

### 4. Advocacy and Networking :

AIU fosters Industry-Academia Partnerships to facilitate collaboration and knowledge sharing, crucial for effective skill development. The organization engages in policy advocacy, pushing for government policies supporting skill development initiatives and advocating for close collaboration between education and industry sectors. Participation in national and international skill development forums enables AIU to share best practices and collaborate on a global scale.

## Success Stories:

• **AIU Skill Development Network (AISDN) :** Collaboration with Tata Motors resulted in training 5,000 youth in automotive skills, with 80% securing employment within six months. Partnership with IBM led to a skill development program in AI and machine learning, benefiting over 1,000 students across 20 universities.

• **National Skill Development Mission (NSDM) :** AIU's participation led to the development of over 100 new skill development courses, skilling over 50,000 youth across various sectors.

• **Skill India Mission :** AIU's contribution resulted in the establishment of 10 skill development centers across India, training over 20,000 youth for employment.

• **Faculty Development Programs (FDPs) :** Over 5,000 faculty members are equipped with the necessary skills, leading to a significant improvement in the quality of skill development programs.

• **Training of Trainers (ToTs) :** AIU's ToT programs trained over 2,000 trainers in various skill areas, contributing significantly to the skilling ecosystem.

• **Industry-Academia Partnerships :** Collaborations with Infosys and Wipro led to the development of industry-specific skill development programs, ensuring graduates are equipped with industry-relevant skills.

• **National and International Skill Development Forums:** AIU's participation raised awareness about the importance of skill development, fostering collaboration between countries and sharing best practices.

These success stories are a testament to AIU's impactful skilling initiatives. By collaborating with industry partners, government agencies, and educational institutions, AIU continues to make a significant contribution to skilling India's youth, preparing them for the evolving demands of the future workforce.

## Shaping India's Future Workforce

The Association of Indian Universities (AIU) emerges as a pioneering force in reshaping India's talent landscape and fostering a dynamic, future-ready workforce. Through a multifaceted approach, AIU's initiatives are strategically designed to bridge the gap between academia and industry, ensuring that graduates are not only academically adept but possess the practical skills demanded by evolving job markets.

AIU's commitment to industry-relevant skill development, coupled with a proactive stance on anticipating and meeting skill gaps, establishes a foundation for educational programs that align with the needs of a rapidly transforming economy. The emphasis on empowering educators through comprehensive training programs enhances the overall quality of skill development, creating a positive ripple effect in educational institutions across the nation.

Furthermore, AIU's strategic advocacy and networking efforts, coupled with active participation in national and international skill development forums, foster an environment of collaboration. This collaborative spirit ensures the exchange of best practices, the establishment of global standards, and a holistic understanding of the evolving employment landscape. Leveraging technology to provide inclusive learning opportunities, as evidenced by the introduction of e-learning modules, reflects AIU's commitment to breaking geographical barriers and catering to a diverse demographic. The creation of success stories, exemplified by impactful collaborations with industry giants like Tata Motors and IBM, underscores the tangible and positive outcomes of AIU's initiatives.

As AIU continues to champion innovation and collaboration, it stands at the forefront of cultivating a new generation of professionals equipped not only with theoretical knowledge but also with the practical skills, adaptability, and resilience needed to thrive in India's vibrant economic and social ecosystem. In the evolving narrative of India's talent readiness, AIU's vision for future-ready professionals holds immense promise, shaping a trajectory toward a dynamic and prosperous future.

# APPENDIX

**Dear Readers,**

As part of our commitment to providing comprehensive and transparent information, we extend an invitation to explore the resources available in relation to the India Skills Report (ISR). The following key points highlight the materials at your disposal to verify the research conducted by ISR to bring this report to you under these 4 main objectives :

• **Extended Information :** Delve deeper into specific details, supporting data sets, and intricate aspects of the ISR's findings throughout the report for a clear picture of this year's findings.

• **Enhanced Understanding :**  The supplementary materials added throughout the report aim to enrich your understanding of the ISR's primary content by offering additional context, visuals, and data sets.

• **Reader's Discretion :**  Feel free to refer to these resources at your convenience. The inclusion of these materials in the report is designed to respect the coherence and flow of the main report while providing an avenue for those seeking more in-depth insights.

• **Comprehensive Documentation :**  The appended materials include raw data sets, detailed technical specifications, survey instruments, reference links, sources, reports, and other supporting documents that contribute to the ISR's rigorous research methodology.

## Survey Methodology and Data Collection

The India Skills Report is an amalgamation of two distinct yet complementary studies: the Wheebox National Employability Test (WNET) and the India Hiring Intent Survey - Early Career Edition 2024. The WNET focused on evaluating the employability of young individuals, gauging their readiness for India's evolving job market. On the other hand, the 2024 India Hiring Intent Survey delved into the hiring trends and preferences of over 150 corporate entities across 15 diverse industries for the upcoming year.

For the WNET, an extensive online skill evaluation was conducted nationwide, engaging with more than 3,75,000 students across various educational domains. The responses were collected through a structured

survey that included comprehensive demographic information from the participants. To ensure robust and unbiased data representation, statistical procedures were employed to analyze assessment scores on all demographic factors, preventing any risk of data polarization.

The survey covered a spectrum of parameters, including educational domains, skill-oriented employability, state-specific employability (leading to the identification of the top 10 states), city-specific employability (resulting in the identification of the top 10 cities), gender-specific employability, expected salary ranges, interest in internship opportunities, and user data. The inclusion of psychometric evaluations and specific questions about education allowed for a nuanced understanding of the non-technical skill profile of the participants.

The Hiring Intent Survey - Early Career Edition was a collaborative effort between Taggd and PeopleStrong, reaching out to over 150 organizations across 15 industries. Conducted online from September to November, the survey garnered 150+ completed responses, forming the basis for the subsequent analysis. This comprehensive approach, blending quantitative and qualitative insights, ensures a thorough understanding of the dynamic landscape of employability and hiring preferences in India for the year 2024.

Thank you for your continued interest in the India Skills Report. We hope the various visual and textual subjects added to this year's research enhance your experience and facilitate a more profound engagement with the insights presented.

**Best Regards,**
India Skills Report 2024 by Wheebox

# India Skills Report
## 2024 Team

**Shweta Jha**
VP – International Business
Wheebox

**Amit Mathur**
VP – Strategy & Growth
Wheebox

**Rishabh Lakhotia**
General Manager - Marketing
Wheebox

**Kabir Krishna**
Deputy Director - Skill Development
& Livelihood, Confederation
of Indian Industry

**Kamakshi Pant**
Chief Business Officer
Taggd

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