upGrad

IIT MADRAS

Advanced Certification in
Machine Learning & Cloud

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About upGrad and IIT Madras

upGrad has delivered over 20 million hours of learning, delivering programs by collaborating with universities across the world including Duke CE, IIT Madras, IIIT Bangalore and Deakin Business School among others.

Online education is a fundamental disruption that will have a far-reaching impact. **upGrad**, an online education platform to help individuals develop their professional potential in the most engaging learning environment, was founded with this in mind.

Since inception, upGrad has delivered over 20 million hours of learning, delivering programs by collaborating with universities across the world including Duke CE, IIT-Madras, IIIT-Bangalore and Deakin Business School among others.

upGrad, in collaboration with IIT Madras, India's No.1 engineering college* is offering programs specialising in Machine Learning & Cloud; and is excited to offer a one-of-its-kind, academically rigorous and industrially relevant Advanced Certification in Machine Learning & Cloud.

The **IIT Madras** batch includes an average of 10+ yrs of experience and covers the conceptual depths of topics such as Machine Learning, Deployment, Cloud, and Big Data Analytics.

These will be complemented by industry-relevant case studies from major industry verticals by industry leaders with 8+ yrs of experience from upGrad's industry network.

Further, our strong placement network, industry mentorship and the credibility of an IIT Madras certification will provide you with just the right push to accelerate your career in Machine Learning & Cloud.

*Source: NIRF Ranking, 2020

Why
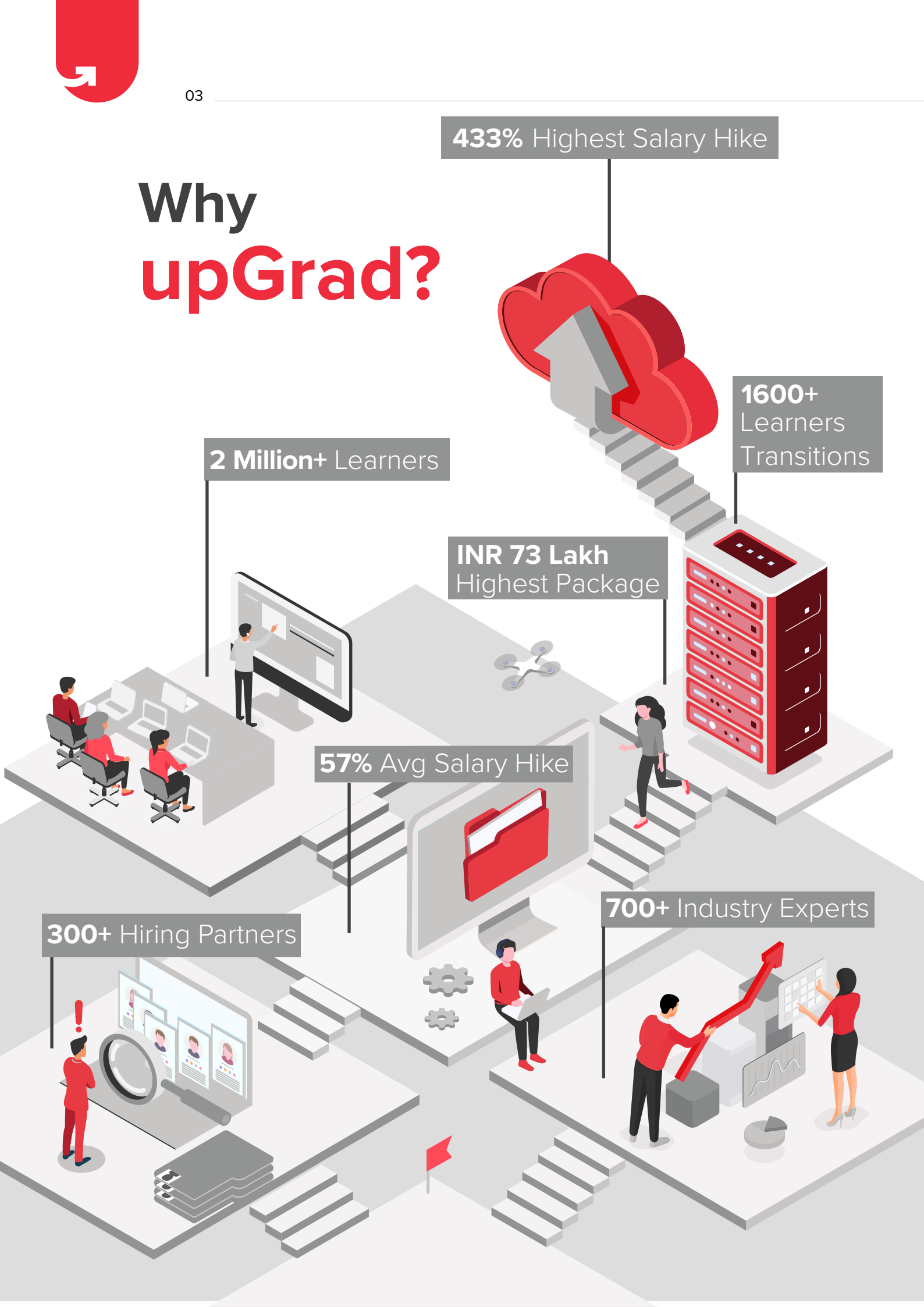# upGrad?

433% Highest Salary Hike

1600+ Learners Transitions

2 Million+ Learners

INR 73 Lakh Highest Package

57% Avg Salary Hike

300+ Hiring Partners

700+ Industry Experts

Program
Highlights

Certification from IIT Madras

Get certified by IIT Madras, India's No. 1 engineering college.

For the Industry, by the Industry

Learn from 15+ case studies and industry experts to mentor you throughout the program.

Blended Learning

Learn with the ease and flexibility of recorded sessions as well as live sessions- designed to ensure a wholesome learning experience.

Deployment of model

Learn how to deploy machine learning models using cloud.

Faculty and Industry
Experts

Dr. Janakiram D.
Professor - CSE Department

Dr. Janakiram D., a PhD, at IIT Madras heads and coordinates the research activities of the Distributed & Object Systems Lab.

Ujjyaini Mitra
Head of Analytics

An alumnus of Mckinsey and Co., Flipkart, and Bharti Airtel with over 11 years of experience.

Mirza Rahim Baig
Lead | Business Analytics

Advanced analytics professional with 8+ years of experience as a consultant in the e-commerce and healthcare domains.

S. Anand
CEO

A Gold medallist from IIM Bangalore, an alumnus of IIT Madras and London School of Business, Anand is among the top 10 data scientists in India.

Vinod Seshadri
Software Architect - ML

With 14+ years of industry experience, Vinod, an MS Graduate in Machine Learning, does delivery of machine learning solutions at Wipro.

Vaidehi Takalikar
Python Expert

Vaidehi is a Post-Graduate in Computer Engineering and is experienced in training corporate employees in Tableau, Python.

Jaidev Deshpande
Senior Data Scientist - Gramener

Jaidev is a Sr. Data Scientist who comes with an extensive experience in data science and predictive analytics.

Pramod Misra
Lead Data Scientist - Vodafone Idea Limited
Pramod is a Lead Data Scientist who actively work on AWS Cloud, Big Data and Machine Learning.

Arihant Jain
Data Scientist - Zest Money

Arihant is a Lead Data Scientist and has experience working in Retail, Credit Risk, Marketing, Banking, Digital, Industrial IoT & Telecom domains.

upGrad Learning
Experience

Job Opportunities

upGrad Opportunities
- upGrad Elevate: Virtual hiring drive giving you the opportunity to interview with upGrad's 300+ hiring partners
- Job Opportunities Portal: Gain exclusive access to upGrad's Job Opportunities portal which has 100+ openings from upGrad's hiring partners at any given time
- Be the first to know vacancies to gain an edge in the application process
- Connect with companies that are the best match for you

Career Assistance

Career Mentorship Sessions (1:1)
- Get mentored by an experienced industry expert and receive personalised feedback to achieve your desired outcome

High Performance Coaching (1:1)
- Get a dedicated career coach after the program to help track your career goals, coach you on your profile, and support you during your career transition journey

AI Powered Profile Builder
- Obtain specific, AI powered inputs on your resume and Linkedin structure along with content on real time basis

Interview Preparation
- Get access to Industry Experts and discuss any queries before your interview
- Career bootcamps to refresh your technical concepts and improve your soft skills

Learning Support

Industry Expert Guidance
- Interactive Live Sessions with leading industry experts covering curriculum + advanced topics
- Personalised Industry Session in small groups (of 10-12) with industry experts to augment program curriculum with customized industry based learning

Student Support
- Available all days 9 AM - 9 PM IST
- For urgent queries, use the Call Back option on the platform

Practical Learning and Networking

Networking & Learning Experience
- Live Discussion forum for peer to peer doubt resolution monitored by technical experts
- Peer to peer networking opportunities with a alumni pool of 10000+
- Lab walkthroughs of industry-driven projects
- Weekly real-time doubt clearing sessions

Industry Readiness Assessments
- Industry oriented tests which are prepared and validated by domain experts for continuous evaluation and improvement

Learning
Path

Pre-Program Preparations
(0 weeks)

Introduction to Machine Learning & Cloud
(5 weeks)

Data Warehousing and Data Management
(5 weeks)

Machine Learning - II
(5 weeks)

Machine Learning - I
(6 weeks)

Big Data Processing using Spark
(4 weeks)

Deep Learning and NLP Fundamentals
(5 weeks)

Case Studies on NLP and Computer Vision
(6 weeks)

Deployment
(3 weeks)

Program
Curriculum

Course	Module	Weeks
Prepatory Content	• Python Programming	0
	• Python for Data Science	0
	• Data Visualisation	0
	• Python Assignment (Optional)	0
Introduction to Machine Learning in Cloud	• Exploratory Data Analysis and Data Visualisation	1
	• Intro to ML + Understanding the ML pipeline	1
	• Introduction to Cloud	1
	• Elastic Provision Services of Cloud and Setting up Cloud	1
	• Assignment	1
Data Warehousing & Data Management	• Introduction to HDFS	1
	• Introduction to SQL	1
	• Hive Querying	1
	• Case Study	1
	• Assignment	1
	• Exam Week + Buffer Week	2
Big Data Processing using Spark	• Introduction to Spark	1
	• PySpark programming	1
	• PySpark implementation on a Dataset: ALS & Spark Streaming	1
	• Assignment	1
	• Buffer Week	1

*This curriculum is subject to change based on inputs from the university

Course	Module	Weeks
Machine Learning - 1	• **Inferential Statistics and Hypothesis Testing**	**1.5**
	• **Linear Regression**	**1**
	• **Linear Regression**	**1**
	• **Logistic Regression**	**1.5**
	• **Assignment**	**1**
	• **Exam Week + Career Week**	**2**
Machine Learning - II	• **Decision Trees**	**1**
	• **Random Forest Trees**	**1**
	• **Assignment**	**1**
	• **Principal Component Analysis + Linear Algebra**	**1**
	• **Clustering**	**1**
	• **Buffer week**	**1**
Deep Learning	• **Introduction to Neural Nets with TensorFlow**	**2**
	• **Convolution Neural Networks**	**1**
	• **Melanoma Detection Assignment**	**1**
	• **Recurrent Neural NetworksClustering**	**1**
	• **Exam Week + Career Week**	**2**
NLP with Deep Learning	• **Natural Language Processing Fundamentals**	**2**
	• **Case Study on applications of Deep Learing in NLP**	**1**
	• **Case Study on Computer Vision**	**2**
	• **NN Assignment: Gesture Recognition**	**1**
	• **Buffer Week**	**1**
Deployment	• **Deployment**	**1**
	• **Implementation: Regression + Model Seletion on SageMaker**	**1**
Capstone	• **Capstone Project**	**4**

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Industry
Projects

IMDb Movie Analysis

Analyse movie data from the past hundred years and find out various insights to determine what makes a movie do well. Use data manipulation, data slicing and various other data-frame operations to successfully find usable insights from the movies.
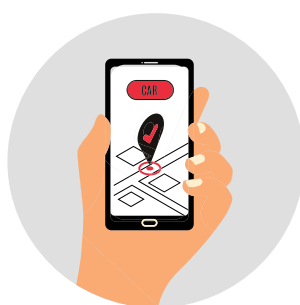
Uber Case Study

Analysis of the Uber dataset to understand the demand and supply of cab services using data visualisation.

Celebrity Recognition

As part of this case study, students must use the Boto3 SDK and AWS services to build an application that scans an image stored in S3 for celebrities.

Stack Overflow Case Study

Using EDA, help Stack Overflow implement the features in its web application such as sending notifications to relevant users if a question is raised and calculate the approximate time within which the user will receive an answer. Performing a time series to analyse the trend of data science and non data science related tags.
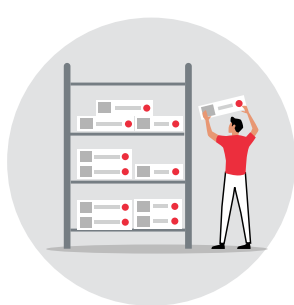
Data Warehousing Case Study

Similar to the BFSI or the healthcare industry, the telecommunications industry deals with big data situations. Now, these situations involve collecting, storing and analysing data to generate insights. This case study involves usage of tools such as sqoop, hive and oozie for various jobs such as ingestion analysis and scheduling.
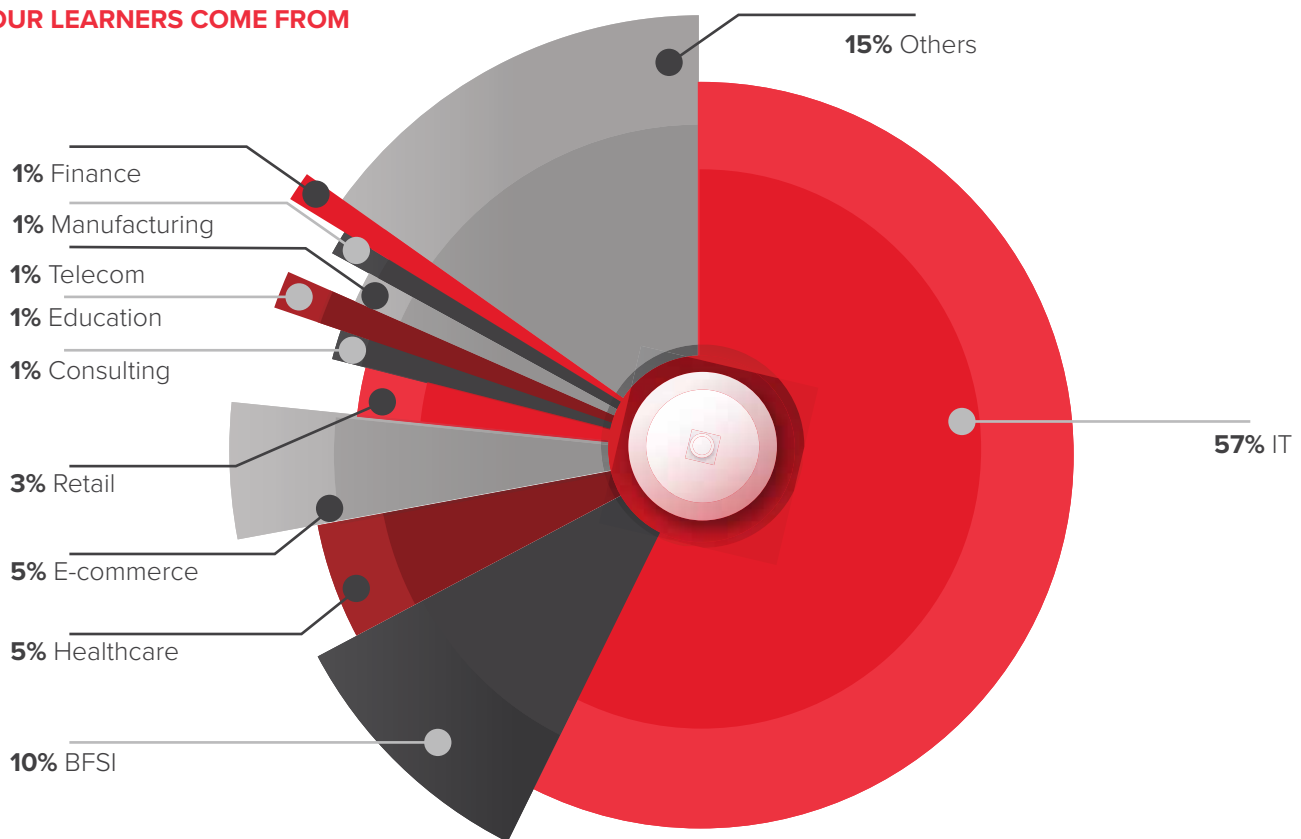
E-commerce Sales EDA Case Study

Analyze a public clickstream dataset of a cosmetics store to extract valuable insights which generally data engineers come up with in an e-retail company. Use effective querying, query optimisation, file partitioning techniques for enhancing the performance of your queries.
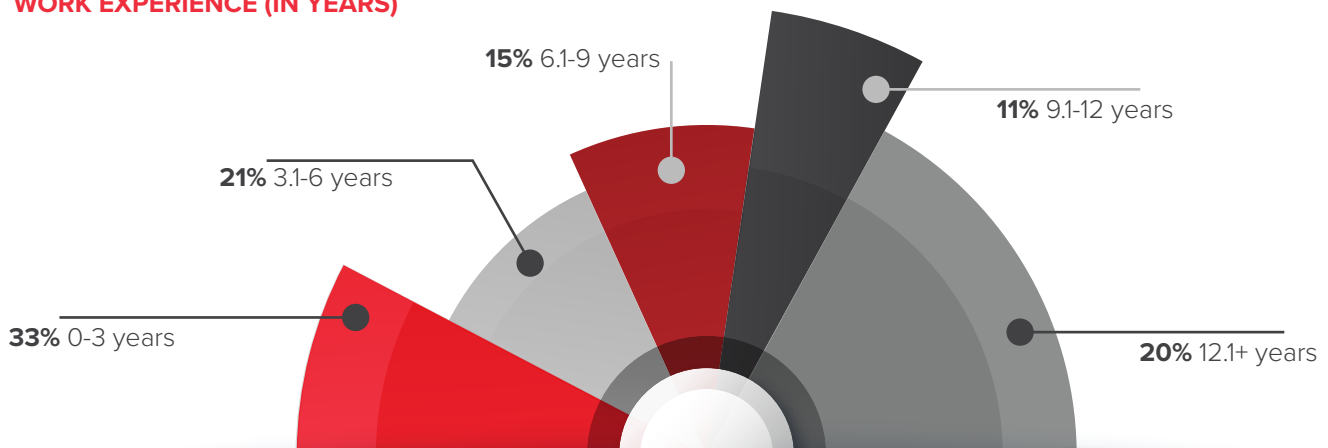
Meet the
Class

**INDUSTRIES
OUR LEARNERS COME FROM**

15% Others

1% Finance

1% Manufacturing

1% Telecom

1% Education

1% Consulting

57% IT

3% Retail

5% E-commerce

5% Healthcare

10% BFSI

WORK EXPERIENCE (IN YEARS)

15% 6.1-9 years

11% 9.1-12 years

21% 3.1-6 years

33% 0-3 years

20% 12.1+ years

A few of the companies our learners are from: Accenture, Amazon, Cognizant, Deloitte, Infosys, Microsoft, Wipro, EY, CitiBank, Cisco, Thomson Reuters

Career
Support

Industry Readiness Assessments

Industry oriented tests which are prepared and validated by domain experts.
• Detailed reports
• Industry readiness score
• Identifying strengths and helping aid in self improvement plan for key skills.

Jobs on Career Centre

Career Centre offering upGrad jobs across experience levels and CTC ranges.
• Easy apply feature for upGrad hiring partner vacancies.
• Create resume at profile builder and with one click to apply for various jobs.

Career mentorship Sessions

Get personalised career advice through 1-1 sessions with industry experts
• Goal setting for better employment results
• Industry Readiness Assessment report discussion

upGrad Elevate

• Recruitment Drive to connect you with the best talent admirers in the industry
• Get access to a wide range of opportunities and find the perfect job
• Apply your learnings to real industry problems

Just In Time Interview Prep (JIT)

For upcoming job interviews JITs are conducted within 48 hours for eligible programs.
• Tailored to job role and target domain.
• Real time feedback and tips for improvement

Interview Preparation

Pre-recorded content on topics such as:
• Profile building, communications etc
• Problem solving approach
• Approaching guesstimates
• Domain specific interview question bank and much more.

Profile Builder (AI Powered)

An easy to use Resume, LinkedIn and Cover letter preparation tool.
• Resume Score: AI-Driven Resume Score
• Realtime recommendations to improve.
• Match your resume to the JD and check fitment.
• LinkedIn Profile Review.
• Cover Letter creation.

Personalised Industry Session

90-minute sessions over the weekend by leading industry experts
• Session categories: Career, Technical and Comunications.
• Doubt resolution
• Develop proof of concepts and apply theoretical concepts in the real world
• Assess skill levels
• Peer Networking
• Classroom element
• Business communication sessions and much more

High Performance Coaching

Dedicated coaches working with you to identify best suited career opportunities
• Help you define your value proposition
• Lay out a Career Path and help you adhere to your timelines and goals
• Help you with interview preparations, finding jobs in the market, salary negotiations and other preparation as required
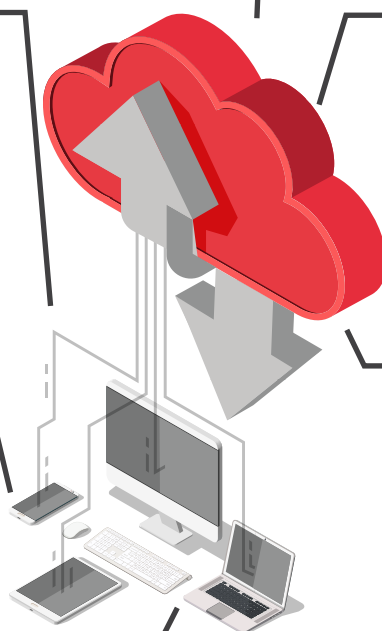
Hear from
Our Learners

Saurav Kant Kumar, Experience: 3.6 Years
"After just 6 months of starting my AI and ML journey, I have been rewarded with a Data Scientist position in Tech Mahindra with a very hefty package and this is just after going halfway through the program. I can put my money on this program on any given day and assure everyone that this is one program that stands apart from every other in the market. The program pedagogy is impeccable but what I liked the most is the constant motivation from my student mentor which kept me going in the program."

Shashank Sane, Experience: 11 Years
"Overall it is a very well rounded program (and only one of the few) and while the topics are being covered in sufficient depth, it would not be useful to compare this with MOOC's or any other specialised programs covering only one of the topics. The primary importance of this program lies in the structured approach and well-rounded coverage (with the industry insights that it offers)."

Amarpal Singh, Experience: 17 Years
"According to me this particular program is pretty useful and adds value because of its structured approach, strict schedule, deadlines and the discipline in learning that the overall process brings along. The whole idea that you will spend almost a year learning about ML/AI in a structured and organized manner is the biggest USP of this program and what makes it different from other short term courses."

Gaurav Singh, Experience: 2 Years
"This program sets very high standards in the field of ML and AI. Before joining this program I searched about many other programs but none of them is at par to this program. Yes it's true that nothing is perfect in this world, but whenever they commit mistakes they are very fast to respond and do not hesitate to accept and rectify that. I am completely satisfied with what they have given me, your money will not get wasted and you will get opportunity to expose yourself to the field of ML and AI."

Program Details and
Admission Process

PROGRAM DURATION AND FORMAT
12 Months | Online

PROGRAM START DATES
Please refer to the website for program start dates.

PROGRAM FEE
INR 2,00,001 (Inclusive of taxes)

ELIGIBILITY
Bachelor's Degree with 50% or equivalent at graduation.
Coding experience required.*
(B. Tech or B.E- preferably 60% or higher or first class if you have less than two years of experience)

WEEKLY COMMITMENT (15+ hours/week)

6-7 HOURS
Asynchronous learning time.

6-7 HOURS
Assignments and projects.

1 LIVE SESSION
Every two weeks.

SELECTION PROCESS

STEP 1: Online Eligibility Test
Fill out an application and take a short 45 mins Online test with 8 questions.

STEP 2: Review and Shortlisting of Suitable Candidates
Our faculty will review all applications, considering the educational and professional background of an applicant and review the test scores where applicable. Following this, Offer Letters will be rolled out so you are assured a great peer group to learn and network with.

STEP 3: Content
Make a quick block payment with assistance from our loan partners where required, receive immediate access to the prep content and begin your upGrad journey.

FOR FURTHER INFORMATION, CONTACT
mlcloud@upgrad.com
1800-210-2020