Karishma M. Patel

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PROFESSIONAL SUMMARY

Dynamic and research-driven scholar specializing in Artificial Intelligence, Machine Learning, and Natural Language Processing, with a strong academic foundation in Computer and Information Sciences. Currently pursuing a Master's degree at the University of Rajasthan and an academic Gold Medalist (BCA, Amity University Rajasthan) and a minor degree in Psychology.

My research interests lie at the intersection of Computer Science, Marketing, and Behavioral Analytics, where I explore how AI and ML can model, interpret, and ethically influence consumer behavior and decision-making. I am particularly interested in developing data-driven frameworks for understanding market dynamics, integrating computational modeling with insights from psychology, linguistics, and economics.

Alongside my research pursuits, I am deeply passionate about academic teaching and mentorship, and I look forward to contributing to university-level education through interdisciplinary, project-based learning approaches. With prior experience in research assistance, mentorship, and cross-domain collaboration, I aim to advance research that bridges technological innovation and human-centered application, fostering responsible and impactful advancements in AI and its societal integration.

EDUCATION

- **Master's in Computer Applications (MCA)**
  University of Rajasthan | August 2024 – July 2026
  CGPA: 5.54 / 6
  Top 2% of the class.

- **Bachelor of Computer Applications (BCA)**
  Amity University Rajasthan | August 2021 – 2024
  CGPA: 8.93 / 10
  Minor in Psychology | Foreign language: Spanish
  Academic Gold Medalist

- **High School (Science)**
  St. Norbert School | May 2007 – Jan 2020
  Percentage: 94.4%

RESEARCH EXPERIENCE & PUBLICATIONS

- Machine Learning-Based Contrast Enhancement for Enhanced Visualization of COVID-19 and Pneumonia Lesions in Chest X-ray Images – IEEE Conference, 2025 Paper
- Algorithmic Attachment Disorder: Detecting and Preventing Emotional Dependency in Human–AI Relationships . Paper(submitted under conference paper under review)
- The Self-Limiting Dynamics of AI Automation: A Chessboard Model of Economic Collapse . chapter submitted.(under review)
- Microvia: A Forensic and Genomic paradigm unifying DNA- microbiome interactions for spatial provenance prediction. (ongoing)

WORK COLLLBRATIONS AND FREELANCING

Freelance Graphic & Web Designer June 2022- May 2024 website

- **Designed and delivered multiple high-impact creative assets** for hospitality events, consistently receiving positive feedback from clients and guests on the visual appeal and professionalism.
- **Developed custom, visually engaging websites** that captured the client's brand identity, resulting in increased user engagement and compliments on the modern, intuitive design.

RESEARCH COLLABRATIONS

Research Collaborator *Dr. Karthik G. L, VIT Bhopal University* June 2 2024- July 31, 2025

Co-developed an innovative agent-based "Chessboard Model" to study AI automation's economic impact.

- Designed Python-based simulations to analyze agent interactions and systemic feedback loops.
- Co-authored "The Self-Limiting Dynamics of AI Automation: A Chessboard Model of Economic Collapse" (under review).

Research Collaborator *Dr. Meghna Luthra, Manav Rachna International Institute of Research and Studies (MRIIRS)* *August 1, 2025 – September 31, 2025*

- Worked on ML techniques for contrast enhancement in chest X-ray images to detect COVID-19 and pneumonia lesions.
- Handled data preprocessing, feature extraction (HOG, GLCM), and model evaluation with metrics like accuracy and SSIM.
- Co-authored "Machine Learning-Based Contrast Enhancement for Enhanced Visualization of COVID-19 and Pneumonia Lesions in Chest X-ray Images" (IEEE Conference, 2025).

PROJECTS

• Gesture-Controlled Virtual Piano – Real-time piano via finger tracking (OpenCV, NumPy, Pygame). Project
• EthicEcho – AI-human interaction monitoring tool for emotional safety (Python. Project
• AI Chessboard Economy Simulation – Multi-agent model for automation-driven economic impact (Python). Project
• BizML – Python library for predictive business analytics (forecasting, churn prediction, dashboards). Project
• CytoGuard – Computational design of eco-safe water softeners formula derived from data analysis and cleansing. Project

TECHNICAL SKILLS

- Programming: Python, SQL, HTML,CSS,JS, Figma
- AI/ML Tools: NumPy, OpenCV, Scikit-learn, TensorFlow ,NLTK, spaCy
- Visualization & BI: Tableau, Power BI, Pandas, Matplotlib
- Other Tools: Git,LaTeX, Draw.io, Microsoft Visio (Flowchart Maker)

CERTIFICATIONS

• Programming in C++ – My Captain
• Python 3.4.3 Training – IIT Bombay
• Spanish Language Certification – Amity University Rajasthan

SCHOLARSHIPS AND ACHIEVEMENTS

• Academic Gold Medalist – BCA, Amity University Rajasthan.
• Merit based scholarship recipient 2021-2022, 2022-23
• Class Representative – Amity University Rajasthan (2021–2023).
• Chess Champion –University tournaments (1st & 2nd) 2021 , 2022, 2023

LANGUAGES

English, Hindi, Kannada, Marwadi

INTERESTS

Research, Design, Data Visualization, Chess, Creative Writing, Entrepreneurship

REFERENCES

- **Dr Chitresh Banerjee** Mentor , Amity university Rajasthan, Associate professor at Amity institute of Information technology, Phone : +91 9928446600, Mail: cbanerjee@jpr.amity.edu Linkedin
- **Dr. Krishna Gupta** Head of Department Institute of information technology , Rajasthan University Jaipur ,Phone: +91 9950501423
- **Mr Praveen Sharma** Cofounder, Nutshell Phone :Phone :+91 7427807904 , Mail:Praveen.sharma2@oyorooms.com Linkedin
- **Dr Samuel Raut** Research Guide, KIIT University , Odisha , Assistant directore-International relations KIIT UNIVERSITY, Phone: +91 7735389456, mail: Linkedin