Rushin Bhatt

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Education

- **Columbia University** — New York, NY
  Master of Science in Data Science — *2025 - 2027*
- **Pandit Deendayal Energy University** — Gandhinagar, India
  Bachelor of Technology in Computer Science, GPA: 3.7/4.0 (Student Research Assistant) — *2021 - 2025*

Relevant Coursework

Data Structures & Algorithms, Database, OS, Computer Networks, Big Data, Cloud, Software Engineering, Probability & Statistical Inference, Machine Learning, Neural Networks, Visualisation, NLP, High Performance GPU Computing, Agentic AI

Skills

Python (Pandas, NumPy, Scikit-learn, TensorFlow, PyTorch, Selenium, FastAPI), C, R, Java, JavaScript(Node, React), PHP, SQL, MongoDB, AWS, GCP, LaTeX, AI Agents (VLMs/LLMs, Exa AI, CrewAI, Pydantic, LangGraph, LangChain), CUDA

Experience

- **Machine Learning Intern - Fynd (Shopsense Retail Technologies Ltd.)** — Mumbai, India
  Handled multiple machine learning projects across two internship terms. — *June - Aug 2024, Jan - May 2025*
  - **AI Catalog Enrichment**: Engineered an AI-driven catalog enrichment pipeline for brands including Veromoda, Ajio & Tira, integrating VLMs (GPT-4o, Gemini 2.0 Pro, DeepSeek VL2) and LLMs (Claude AI, GPT-3.5-Turbo) with search-based retrieval (Exa AI, SerpAPI, Perplexity Deep Research), which increased product attribute extraction accuracy by 37%. Got the opportunity to work on the product side as well, directly under the CTPO, making it a perfect blend of tech and product.
  - **Dynamic Annual Operations Plan**: Formulated a dynamic annual operations forecasting system using XGBoost, AdaBoost, and hybrid ML models, leading to a 20% improvement in annual demand prediction precision.
  - **Virtual Try-ons**: Implemented the SewFormer virtual try-on framework, enhancing garment fit prediction accuracy by 18%.
- **Machine Learning Research & Development Intern - Dolcera Corporation** — San Mateo, USA
  Conducted research on maximizing the effectiveness of AI tools in development teams. — *Dec 2024 - Jan 2025*
  - **LLM Productivity Optimization Research**: Conducted applied research on AI-assisted productivity tools, demonstrating a significant uplift in cross-team efficiency. Explored advanced prompt engineering techniques for LLMs by analyzing developer usage patterns across arXiv, HackerRank, Reddit, and GitHub resulting in a 22% gain in response accuracy and consistency.
- **Software Engineering Intern - Visity** — Ahmedabad, India
  Built a chatbot for Visity using OpenAI API with a Node.js backend. — *Feb 2024 - April 2024*
  - **Chatbot Development**: Architected and launched a customer-facing chatbot using OpenAI APIs and Node.js, deployed on the company's production website and actively serving 2,000+ monthly users. Enhanced chatbot reliability by building automated error-handling mechanisms, achieving a 95% uptime during live usage. Linked the chatbot to WhatsApp as well.
- **Software Development Intern - Source Pro Infotech Pvt Ltd.** — Ahmedabad, India
  Developed a chatbot model for one of their clients using TensorFlow and NLTK in Python. — *Oct 2023 - Feb 2024*
  - **The Chatbot**: Constructed an enterprise-grade chatbot solution for client deployments, leveraging TensorFlow and NLTK in Python to deliver scalable conversational intelligence.
  - **Web Integration**: Incorporated a web-based interface for the chatbot, boosting accessibility among client employees by 40%. Optimized accuracy by 30% through data refinement, including semantic preprocessing, stemming, and vocabulary integration.
- **Data Analyst - SciKnowTech** — Ahmedabad, India
  Analyzed datasets including student information, fee transactions, and marksheets. — *Aug 2022 - June 2023*
  - **Tools**: Processed large-scale student datasets, delivering insights that improved academic reporting accuracy by 25%. Automated data pipelines using Pandas, NumPy, Power BI, and Tableau, which decreased manual report preparation time by 40%.

Projects

- **KickClone**: Optimized football player replacements by using cosine similarity on player embeddings stored in a vector database.
- **Tunecraft**: Analyzed and visualized song similarity using multi-layer neural networks and 3D tensor embedding projections.
- **FindMe**: An intelligent AI-agent powered platform that connects job seekers with recruiters, hiring managers and potential referrers.
- **Zyber Chat**: Implemented MERN and developed a cipher-based locker and chat interface using the Kyber algorithm in Java.

Publications / Research Work

- **Advancing the Computational Architecture of Digital Audio Workstations**: Under review- Computer Music Journal (MIT)
- **KickClone: A Model built to Revolutionize Football Scouting**: Published- AIMV 2025 (IEEE)
- **A Detailed Exploration of the Security Issues in Educational Applications**: Published- ICT4SD 2024 (Springer Nature)
- **Enhancing Transportation Infrastructure: A Deep Learning Approach for Pothole Detection**: ICCCNT 2024 (IEEE)
- **A Pioneering and Reliable Technique for Optimizing Aerial Route Planning**: Published- IJIMS (Inderscience)

Achievements & Interests

- Attained distinction in all Trinity College of London Classical Piano, Music Theory, and Rock&Pop music examinations.
- Performed at 4 solo piano concerts, including a fundraiser that raised over $6000 and a performance in front of Pope Francis.
- Represented Gujarat (my state) in the Reliance Cup soccer tournament at national level for 3 consecutive years.
- Selected as a Research Intern at IMT Brazil (São Paulo), to work on Autonomous Vehicles under Prof. Eduardo LL Cabral.
- Former Treasurer at Computer Society of India (PDEU Chapter), between April 2023 to December 2023.