Rudra Patel

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Education

University of Florida — Gainesville, FL
Master of Science, Artificial Intelligence Systems — *Aug 2025 – Aug 2027*

Parul University — Vadodara, Gujarat
Bachelor of Technology, Computer Science in Internet of Things — *Aug 2020 – May 2024*

Technical Skills

Languages: Python, SQL, R, C++, Bash
Frameworks: TensorFlow, PyTorch, Keras, Hugging Face Transformers, LangChain, RAG, FastAPI
Developer Tools: Git, GitHub, VS Code, Jupyter Notebook, Docker, Weights & Biases, MLflow
Concepts: Machine Learning, Deep Learning, Supervised & Unsupervised Learning, Feature Engineering, Model Training & Evaluation, Hyperparameter Tuning, Cross-Validation, Computer Vision, NLP, LLMs, Generative AI, Prompt Engineering, Responsible AI (Bias Detection, Fairness Metrics, Explainability)
Libraries: Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn, OpenCV, PyTorch Lightning, SHAP, LIME

Experience

Jignect — May 2024 – Jul 2025
AI Automation Engineer — *Ahmedabad, India*

- Enhanced Python automation frameworks with robust error handling, minimizing false positives and achieving zero critical defects across 50+ test suites
- Integrated ML-based validation checks into testing workflows, improving pre-release quality by **25%**
- Implemented automated testing frameworks within CI/CD pipelines, reducing deployment failures by **20%**
- Accelerated test suite performance through parallelization strategies, diminishing test execution duration by **30%** and freeing up crucial CI/CD pipeline resources for subsequent builds
- Spearheaded a data validation pipeline using Great Expectations and Spark, reducing data-related incidents by **40%**

SlashMark — Dec 2023 – Mar 2024
Data Science Intern — *Hyderabad, India*

- Trained a TensorFlow CNN on 35,000+ retinal images, classifying five diabetic retinopathy stages with **96.3%** training
- Engineered a data preprocessing pipeline featuring image resizing, normalization, and augmentation, achieving a **28%** reduction in training loss over 25 epochs
- Applied SHAP-based explainability analysis on model predictions, identifying top 5 key retinal features to support responsible AI practices in diagnostics
- Optimized model inference time by **35%** through quantization while maintaining accuracy, enabling faster processing of retinal images
- Deployed model as a proof-of-concept via API endpoint, integrating into an existing diagnostic workflow and processing 12 images per minute

Projects & Publications

Predictive Employee Turnover Modeling

- Developed a logistic regression model on 50K+ employee records, predicting attrition with **92%** accuracy and an F1-score improvement of **18%** through feature engineering across 20+ HRIS and engagement variables
- Integrated fairness-aware evaluation using demographic parity and equalized odds metrics to detect potential bias in attrition predictions across employee subgroups
- Orchestrated automated data transformation and model evaluation pipelines, reducing model training time by 2 hours and surfacing the three primary drivers of employee turnover

Generative AI Report Automation

- Accelerated data preprocessing and model evaluation pipelines using Python and Pandas, achieving a **45%** reduction in overall workflow duration and enabling faster iteration cycles
- Deployed a generative AI summarization pipeline to condense 100K+ survey responses into actionable insights with **95%** accuracy, implementing hallucination detection checks through cross-referencing outputs against source data
- Engineered reusable Python scripts for end-to-end report automation, enabling scalable processing for 10+ future survey cycles with built-in output validation

Smart City Intra Transit System Using IoT

- Optimized IoT data processing by converting to JSON-MQTT protocol and implementing NoSQL database analytics, shrinking model size by **15%** and reducing computational costs by **20%** overall
- Reduced the computational cost of AI inference on edge devices by **30%** through model quantization and pruning techniques, enabling real-time analytics on resource-constrained hardware

Certifications

- Data Science Specialization – Johns Hopkins University
- Python Programming Masterclass – Udemy
- AI Engineer Bootcamp – Udemy
- Natural Language Processing using Python – Infosys Springboard