Rishi Patel

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Available: Summer & Fall 2025

EDUCATION

Northeastern University, Boston, MA — Sep 2023 – Present
MS in Computer Science — *Expected Graduation: Dec 2025 - May 2026*
Relevant Coursework: Computer Systems, Algorithms, Object-Oriented Design, Database Management Systems, Scalable Distributed Systems, Foundations of AI, Machine Learning, Computer Vision

Seton Hall University, Orange, NJ — Aug 2019 – May 2023
BS *in Biology*
Relevant Coursework: Intro to Program Design, Discrete Math

TECHNICAL KNOWLEDGE

Languages: Python, Java, C, C++, R
Tools & Frameworks: NumPy, Pytorch, Scikit-learn, Pandas, Git
Databases: MySQL, SQLite, PostgreSQL

PROJECTS

Valor AI: An AI-Driven Platform for Streamlining VA Claims — Sep 2024 – Nov 2024

- Developed an OCR pipeline using DistilBERT embeddings to extract structured data from VA claim forms
- Built a PostgreSQL and Pinecone-backed vector search system to optimize claim-related queries
- Implemented a secure, real-time chatbot interface using Next.js and TypeScript for automated claim guidance
- Optimized data retrieval speeds through query indexing and efficient storage in PostgreSQL

Bird Strike Data Analysis — June 2024 - July 2024

- Designed a relational database schema in MySQL (AWS RDS) for structured storage of 25,000+ aviation incidents
- Developed SQL queries with CTEs and indexing for performance-optimized data retrieval
- Built automated ETL pipelines in R to clean and transform FAA wildlife strike data
- Created visual analytics dashboards using ggplot2 to identify trends in bird strike incidents

CastleEscape-RL — Oct 2024 – Nov 2024

- Developed an AI agent in Python using Q-learning and Monte Carlo methods to navigate a grid-based environment
- Trained the agent to make strategic decisions by optimizing movement, avoiding guards, and selecting optimal paths
- Implemented reward functions and policy updates to improve agent performance over multiple simulations
- Analyzed agent performance over training episodes to evaluate learning convergence and decision-making patterns

Object Recognition with C++: Real-time Detection System — Feb 2025 - Mar 2025

- Developed a real-time object recognition system using classical computer vision techniques without deep learning
- Implemented feature extraction with Hu moments, shape descriptors, and geometric properties for classification
- Designed a classification system with Euclidean, Cosine similarity, and Manhattan distance metrics, achieving >90% accuracy
- Optimized processing speed using efficient connected component analysis and adaptive thresholding for real-time tracking

Pharmaceutical Sales Database — May 2024 - Jun 2024

- Developed an ETL pipeline in R to process pharmaceutical sales data from XML sources
- Implemented a normalized relational database schema in MySQL for structured data storage
- Designed SQL queries to analyze sales performance and revenue trends across distributors
- Built interactive visualizations in ggplot2 to identify key business insights

WORK EXPERIENCE

Beskar Inc, New Brunswick, NJ — Aug 2021 – Sep 2022
Business Partner/ Owner

- Managed cryptocurrency mining operations utilizing 10 NVIDIA RTX 3090 GPUs, generating $40,000+ in revenue
- Implemented remote desktop protocols (RDP) over VPN, securing remote access and automated monitoring for systems
- Developed revenue forecasts and maintained a $20,000+ GPU-based computing cluster, ensuring maximum uptime
- Tuned GPUs with ~15–20% memory/core overclocks and ~15% power limit reduction, sustaining 120 MH/s per RTX 3090
- Resolved VRAM overheating issues by upgrading thermal pads and paste on all GPUs, eliminating thermal throttling and downtime