

# Akash Dubey

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## EDUCATION

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### Rutgers University Honors College, School of Arts and Sciences

New Brunswick, NJ

*Bachelor of Science in Computer Science and Math*

*Anticipated May 2027*

- **GPA:** 3.95/4.0 | SAT: 1580
- **Relevant Coursework:** Tensor Networks, Systems Programming, Algorithms, Data Structures, Statistics I, Honors Calculus III & IV, Intro to Math Reasoning, Math Theory of Probability, Computer Architecture.
- **Activities:** Quantitative Finance Club, Road to Silicon Valley Program (Cohort 6), Rutgers Directed Research Reading Program (Symmetric Functions), ESL Instructor, Basketball, Pickleball.

## EXPERIENCE

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### Scarlet Sync

New Brunswick, NJ

*Founder*

*Jan 2025 – Present*

- Created a modern Rutgers class scheduling app with thousands of users for degree planning and notifications.
- Currently in talks with Rutgers IT for enterprise software deal to replace existing systems.
- Architected a robust data ingestion pipeline that reverse-engineers 4 legacy university services; used Python and LLMs to parse unstructured data, indexing 2,500+ classes and 500+ degree programs for real-time querying.

### Lykke

Los Angeles, CA

*Software Engineer*

*Sep 2025 – Present*

- Helping design and expand a multi-model AI pipeline to ingest, parse, and structure high-velocity, multi-modal data (texts, voice memos, docs) for a conversational RAG-based chat application.
- Engineered a fully local, browser-based RAG application by implementing a local embedding model optimized with WebGPU for client-side hardware acceleration, ensuring high performance and privacy.
- Architecting the integration of Canvas LMS to build a rich, domain-specific knowledge graph.

### Rutgers Economics Labs

New Brunswick, NJ

*Research Director (formerly Team Lead)*

*Jul 2025 – Present*

- Overseeing and sourcing all research projects; designed studies for NJDOL, Virginia Consensus for Higher Education in Prison, and U.S. Census Bureau.
- Previously led a team of 5 researchers to analyze the Urban Enterprise Zone program for the NJDCA, performing comprehensive analysis of census data using econometric methods in Python and R.
- Synthesized 20+ years of historical data to create projections of economic funding variables.

### Samaritan Scout

Cranford, NJ

*Full Stack Engineer*

*May 2023 – Aug 2025*

- Developed a full-stack search engine using React, TypeScript, and PostgreSQL to index 35,000+ volunteer opportunities across America.
- Designed semantic search algorithms to filter hallucinations and ensure accurate matching for non-profit queries.
- Built an agentic scraping system leveraging OpenAI and Gemini structured outputs to autonomously extract data from 100,000+ non-profit websites, reducing manual data entry time by over 90%.

## PROJECTS

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### Gamma Scalping & Options Trading | *Python, Pandas, Quantitative Finance*

- Implemented a gamma scalping strategy to hedge options portfolios, focusing on mitigating volatility drag.
- Developed a comprehensive backtesting engine to simulate options pricing, managing greeks, and evaluating long-term strategy performance against market fluctuations; paper in progress.

### Small Language Model Optimization (GSM8k) | *PyTorch, Transformers, LLMs*

- Fine-tuned small language models on the GSM8k (grade school math) dataset to enhance mathematical reasoning capabilities with transformers architecture on Rutgers High Performing Computing Cluster (Amarel).
- Optimized inference latency by experimenting with quantization techniques and model pruning.

## AWARDS & SKILLS

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**Awards:** 8090 AI Top Coder (5th), Rutgers Shark Tank (2nd and 3rd), ASA Fall Data Challenge (Top 3).

**Languages:** C++, Python, Java, SQL, TypeScript, R, Bash, Kotlin, Git

**Technologies:** WebGPU, CUDA, Generative AI, Pandas, React, AWS, OpenCV, Scikit-learn