AMANI AGRAWAL

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EDUCATION

New York University, College of Arts and Science   New York, NY
B.A in Computer Science and Mathematics   *Expected - May 2027*
Overall GPA: 3.82 | **Honors**: Dean's List for the Academic Year 2024-25, 2023-24
Relevant Courses: Data Structures (Tutor), Operating Systems, Basic Algorithms, Deep Learning, Data Management and Analysis, Discrete Mathematics, Calculus, Linear Algebra, Introduction to Computer Security, Computer System Organisation.

PROFESSIONAL EXPERIENCE

Transmit   New York, NY
Software Engineering Intern   *May 2024 – Present*
- Deployed AWS Lambda via SAM CLI to aggregate 25TB data volume usage daily, improving visibility into regional trends.
- Automated workflows by aggregating component-level cost and posting daily summaries to Slack for monitoring.
- Refactored legacy codebase for stream tag indexing and developed new endpoints to support codebase restructuring.
- Prototyped a computer vision model to detect stream quality issues, automating ticket generation and reducing manual work.

Microsoft x NYU   New York, NY
Development Team Co-Lead   *September 2024 – Present*
- Deployed a scalable Layer-2 blockchain on Arbitrum by implementing smart contracts in Solidity.
- Developed client-side interfaces with JavaScript and backend services in Python to manage corporate wallets.
- Led a subteam responsible for implementing Semaphores and preventing fraudulent on-chain transactions.
- Presented the solution in the Microsoft Ethical Tech Summit '24 at the prestigious Microsoft Innovation Lab.

Balaji Industries Private Ltd   Remote
Software Engineer Intern   *July 2024 – August 2024*
- Developed a Flask software to automate end-to-end business processes for a steel company with 100+ employees.
- Implemented MySQL for robust data storage using Google Service API and optimized querying of business records.
- Reduced manual documentation time by 50% and integrated a BI dashboard to aid in business analysis and growth.
- Integrated a secure user authentication system to ensure enhanced data privacy and controlled access permissions.

RESEARCH

Database System Tuning (MySQL, PostgreSQL)   *January 2025 - July 2025*
- Researched on the benchmarking and performance evaluation of modern database systems on compute servers.
- Conducted 100+ experiments with transaction processing council (TPC) standards, and presented findings using bar charts.
- Worked under the guidance of Professor Shasha to optimize workflows and assess various database tuning strategies.
- Analyzed query execution plans and indexing strategies to identify bottlenecks and enhance database efficiency.

Application of Reinforcement Learning in Code-Writing Generation (Machine Learning)   *June 2025 - Present*
- Developing a Reinforcement Learning Model to adapt to new games and puzzles based on previous frameworks.
- Researched PPO and GRPO techniques to understand their training mechanisms and performance trade-offs.

PROJECTS

High-Frequency Trading AI agent (Python, Machine Learning)   *June 2025*
- Built a real-time market-making engine in Python with modular architecture, integrating live data via WebSocket.
- Developed an AI-driven trading agent using NLP to process stock news and trigger trades based on mean reversion logic.
- Implemented risk management modules including volatility-based throttling and cooldown mechanisms to reduce exposure.
- Engineered a performance tracking dashboard with Matplotlib and Pandas to visualize real-time and historical PnL.

Fuel Your Fitness (Next.js)   *February 2025*
- Developed an innovative web application that enables users to easily discover healthy dish options in nearby restaurants.
- Generated restaurant's datasets from Kaggle and integrated with the Google Maps API to display real-time food options.
- Implemented DeepSeek LLM to analyze and calculate the nutritional value of homemade food items with 83% accuracy.
- Won the People's Choice Award at HackNYU X Google with an impressive total of 50+ votes from fellow attendees.

SKILLS & INTERESTS

Programming Languages: Python, Java, MySQL, PostgreSQL, Solidity, JS, HTML, C, C++, Dart, x86-64, PHP, Golang
Technical Proficiencies: Git, Numpy, Pandas, React, Docker, SAM CLI, AWS, Machine Learning, Computer Vision
Interests: Real Madrid, Indian Cricket Team, Bollywood, IPL, South Asian Cuisines, Boxing, Running, Tutoring