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, Operating Systems, Basic Algorithms, Deep Learning, Data Management and Analysis, Discrete Mathematics, Calculus III, Linear Algebra, Introduction to Computer Security, Computer System Organisation.

PROFESSIONAL EXPERIENCE

Transmit.live New York, NY
Incoming Software Engineering Intern *May 2024 – Present*

Microsoft x NYU New York, NY
Development Team *September 2024 – May 2024*
- 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.
- Ensured secure institutional attestations and prevented fraudulent on-chain transactions by leveraging Semaphores.
- 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 over 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.

Arohan Financial Services Ltd Kolkata, India
Software Engineering Intern *June 2024 – July 2024*
- Implemented Pandas and MySQL to efficiently merge branch information tables, streamlining data across multiple branches.
- Migrated and debugged 50+ Python scripts to new servers, updated MongoDB queries, and imported necessary SQL tables.
- Developed pages using PHP, Python and MySQL for viewing product trends and downloading activity reports.
- Enhanced the report-subscription page with options to view and unsubscribe from subscribed reports for a user.

RESEARCH

Database System Tuning (MySQL, PostgreSQL, MariaDB, DuckDB) *January 2025 - Present*
- Researched on the benchmarking and performance evaluation of 4 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.

PROJECTS

Fuel Your Fitness (Next.js) *February 2025*
- Won the People's Choice Award at HackNYU X Google with an impressive total of 66 votes from fellow attendees.
- 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.

University Identification App (JavaScript, Solidity) *November 2024*
- Developed an application to digitize the university ID card with a NFC to access buildings and replace the physical cards.
- Built a responsive and easy to navigate frontend with a MySQL backend for securely storing encrypted university IDs.
- Deployed a smart contract to encrypt private data and securely log all access activities on the blockchain for transparency.
- Integrated role-based access control to ensure secure authentication and prevent unauthorized entry into university facilities.

SKILLS & INTERESTS

Programming Languages: Python, Java, MySQL, Solidity, JS, HTML, C, C++, Flutter, x86-64, LaTeX, PHP, Golang
Technical Proficiencies: Git, NumPy, Pandas, Sklearn, Matplotlib, Docker
Interests: Real Madrid, Indian Cricket Team, Bollywood, IPL, South Asian Cuisines, Boxing, Running