Sarthak Jain

sjain1@seas.upenn.edu | 732-520-9871 | linkedin.com/in/sarthak-jain2/ | github.com/SarthakJain2 | U.S. Citizen

EDUCATION

University of Pennsylvania — **Philadelphia, PA**
Master of Science in Computer Science and Data Science, GPA: 4.0/4.0 — *Expected May 2027*
- **Coursework:** Applied Machine Learning, Big Data Analytics, Internet and Web Systems, Operating Systems, Databases
- **Organizations:** Developer and Researcher for AI @ Penn, Claude Builder Club (Placed Top 3 in yearly hackathon)

Rutgers University-New Brunswick — **New Brunswick, NJ**
Bachelor of Science in Computer Science and Data Science, GPA: 3.91, Major GPA: 3.97 — *September 2022 - May 2025*
- **Organizations:** Backend Developer and Technical Lead at HackRU, ARESTY Research Assistant

WORK EXPERIENCE

Robinhood – *Incoming Fall Software Engineer Intern* — **Menlo Park, CA**

Cactus (YC S25) — **Remote**
ML Engineer & Researcher — *January 2026 – Present*

Amazon Web Services (AWS) — **New York, NY**
Software Development Engineer Intern — *May 2025 - August 2025*
- Developed an end-to-end system for automated report delivery via console using **Java** for backend, **React + TypeScript** for frontend, and **SQL** for querying, eliminating 50+ manual data requests/month and improving data accessibility for stakeholders
- Built a Redshift ingestion pipeline with real-time S3 triggers, ensuring daily refresh and automated transformation of report data
- Migrated **100K+** daily records from NoSQL **DynamoDB** to **Redshift** using **Lambda**, EventBridge, S3 replication, and SQS
- Created a custom API with presigned URLs to serve 90 days of reports across 10+ report types via a centralized internal console

Machine Learning Lab — **New Brunswick, NJ**
Undergraduate Researcher — *December 2023 – May 2025*
- Enhanced LLM evaluation by contributing to the Multitask Language Understanding with Symbol Replacement (MMLU-SR) dataset, showcasing over a 30% drop in model performance, highlighting the symbolic reasoning limitations of different LLMs
- Executed benchmark testing for MMLU-SR on Llama-3-70B and Gemini 1.5 Pro, demonstrating a performance decrease of 25%
- Published evaluation results at peer-reviewed **EMNLP GenBench Workshop** in collaboration with a leading USC research team

Rutgers Rail and Transit Research Lab — **New Brunswick, NJ**
Undergraduate Researcher — *September 2023 – May 2025*
- Collaborated on the Using Artificial Intelligence for Next-Generation Intelligent Transportation project that will analyze track safety challenges, path efficiency, and real-time positioning accuracy in 10+ low connection areas of the NJ Transit Rail System
- Applied **OpenCV** and **Python** to generate 3,000+ bounding boxes to validate model accuracy in detecting track safety hazards
- Developed a user-friendly full-stack **Tkinter** interface for crack visualization, video navigation, and defect validation workflows
- Co-authored research paper published in **Smart and Resilient Transportation Journal** on AI applications to enhance rail safety

Gateway (Acquired by Circle) — **New York, NY**
Software Engineer Intern — *June 2024 - August 2024*
- Developed protocol layer in a Web3 environment using **Rust**, creating 50+ Zero-Knowledge rollups for anchoring credential data
- Refined **Typescript** SDK to improve developer experience for issuing and consuming verifiable credential data in 7+ languages
- Created 50+ data dashboards to show transaction activity on blockchain protocol layer using Dune Analytics and Flipside Crypto

PROJECTS

Monitord | C++17, CMake, JavaScript, WebSocket, RestAPI — *September 2025 – December 2025*
- Developed system monitoring server using macOS APIs to collect **10+ metrics** with **1-second precision** and **<5ms overhead**
- Built an asynchronous HTTP/1.1 server with kqueue loop and WebSocket, handling **100+ connections** with **sub-10ms latency**
- Created an interactive web dashboard with Chart.js and WebSocket updates, displaying **8+ metrics** with **60+ data point graphs**
- Designed a time-series storage system with 1-hour rolling window **(3,600+ samples)** and threshold alerts for resource monitoring

Rutgers ML Course Finder | Python, PyTorch, Pinecone, React.js | **HackRU 2024 Winner** — *October 2024*
- Implemented Pinecone for optimized storage and **60% faster retrieval** time of vector embeddings, facilitating real-time similarity searches and delivering probabilistic confidence scores for accurate matching of students' interests with course offerings
- Developed website with React.js to search classes using interest-based keyword search and integrated user feedback functionality
- Integrated similarity scoring using **5000+ vector embeddings** created by PyTorch, enabling context-aware retrieval of courses
- Utilized BeautifulSoup4 for web scraping of relevant course information to improve the accuracy and accuracy of search results

TECHNICAL SKILLS

Languages: C++, Java, Python, Go, SQL, R, Rust, Typescript, JavaScript, MATLAB
Technologies: React, AWS, NumPy, Pandas, PyTorch, Pinecone, MySQL, NoSQL, Docker, Git, REST APIs