

Aaron Wu

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EDUCATION

Rutgers University (GPA 4.0) | *B.S. Computer Science, Data Science* Graduation: 05/2027
University of Toronto (GPA 4.0) | *B.S. Computer Science, Applied Statistics* 09/2023 – 04/2024 (Transferred)

EXPERIENCE

- Systems Infrastructure Engineer Intern (AI Agent Development)** | *AMD* San Jose, CA, 05/2025 – 08/2025
- Rebuilt agent for company-wide codebase understanding and generation using **GraphRAG** and *LangChain ReAct*.
 - Developed prompt-driven graph retrieval algorithm supporting 6 programming languages by integrating new graph builder.
 - Enhanced explainability by controlling memory on Cypher generation & tracking task/context with plan-and-act algorithm.
 - Made design decisions by sourcing solutions from provider talks & conferences, & conducting agent performance evaluation.
- Research and Development Intern** | *QT Medical, Inc.* [LINK] Taiwan, 07/2024 – 08/2024
- Accelerated ML model training process by building remote&fast labeling solution, improving doctors' efficiency by **70%**.
 - Designed, developed, and deployed a web app in **12 days** using *Flask, Streamlit, and AWS (EC2, S3, RDS)*.
 - Saved 3+ hours** weekly manual file management tasks by automating ECG uploads with *Python*.
 - Enhanced security with *SHA-256 hashing* and improved usability through **5 iterations** based on user feedback each week.
- Project Manager & Developer – Incubator** | *Rutgers Mobile App Development* NJ, 01/2025 – 05/2025
- Mentored beginner developers and led app development for personalized, multi-source news insights by introducing *Scrum*.
 - Developed RAG-based news pipeline using *AWS Lambda* and *Pinecone* for daily retrieval and embedding.
 - Directed shift toward a voice assistant with real-time news summarization, positioning the app for app store launch.
- Software Development Intern** | *T and T Consulting Services, Inc.* VA (remote), 05/2024 – 08/2024
- Contributed to *Agile* workflow, implemented single sign-on, reviewed & tested RAG agent code, created UX mockups.
- Research Assistant – Randomized Federated Learning** | *Rutgers University* NJ, 09/2025 – 01/2026
- Conducted experiments on federated hyperparameter learning algorithms, focusing on heterogeneous datasets and sparsity.
 - Evaluated the algorithms using *CIFAR-10* dataset and machine learning tools such as *scikit-learn, Pandas, and NumPy*.
 - Presented findings at a symposium, validating the new algorithms through empirical analysis and results verification.

PROJECTS

- FlashForm (High-Concurrency SaaS Platform)** [LINK] | *Java Spring Boot, Redis, RabbitMQ, PostgreSQL* In Progress
- Architected a high-concurrency flash-sale system capable of handling **1,000+ QPS** traffic spikes using *Spring Boot*.
 - Solved critical "overselling" problem by implementing **Redis Lua Scripting** to ensure atomicity of inventory deduction.
 - Decoupled request handling from DB writes using **RabbitMQ**, reducing latency to **<50ms**.
 - Prevented duplicate orders via **idempotency checks** and validated system stability using **JMeter**.
- End-to-end Real-Time Streaming Data Pipeline (Containerized)**
- Achieved real-time data streaming through *Kafka* and *Spark* for efficient data processing.
 - Automated data ingestion and orchestration through *Airflow*, enabling smooth data flow from API to *Kafka*.
 - Orchestrated containerized services with *Docker Compose* to integrate *Airflow, Kafka, Spark, and Cassandra*.
- RiskFreeRX – AI-Powered Medication Risk Analysis** [LINK] Hackathon Winner
- Developed medication risk validation system by integrating *React Native* mobile app, *AWS Lambda, OpenFDA* database.
 - Find ingredient with **97.5%** accuracy on chaotic data by extracting NDC with *Google Cloud Vision* and LLM-powered NLP.
 - Delivered secure, retail-ready API with *Supabase* authentication and scalable architecture, earning "Most Unique" Award.

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, Java, C, C++, SQL, R, Assembly
Databases: SQL (PostgreSQL, MySQL), NoSQL (Mongo, Cassandra), Vector (Chroma, Pinecone), Graph (Neo4j, Falkor, Cypher)
ML & Analytic: PyTorch, CUDA, TensorFlow, Scikit-learn, Pandas, NumPy, Matplotlib, Power BI
Data Engineering: Kafka, Spark, Airflow, dbt, Airbyte
LLM Tooling & Workflows: LangChain, HuggingFace, BART, Prompt Engineering, LLM APIs (OpenAI, Claude, Gemini)
Cloud/DevOps: AWS, Azure, Docker, Git, GitHub Actions, Linux, Shell Scripting (Bash, PowerShell), CI/CD, Agile (Scrum)
Web/App Development: React, React Native, Node.js, FastAPI, Flask, OAuth, REST APIs, Flutter, Streamlit, HTML

CERTIFICATIONS & PUBLICATIONS

AWS Certified Cloud Practitioner | *Issued by AWS Training and Certification* 08/2024
Machine Learning Specialization | *Stanford University (Coursera)* 01/2025

RELEVANT COURSEWORK

Computer Science: Algorithms (Graph, Complexity), Computer Architecture (Processor, Memory), Data Structures, OOP
Databases: Schema Design, Transactions, Optimization, Security, Data Integration, Info Retrieval, Data Wrangling
Data/Math: Deep Learning (CNN, Transformers), Linear Programming, Linear Algebra, Probability&Statistics, Queuing Theory
Systems & Distributed Arch.: CAP Theorem, Consistent Hashing, Gossip Protocol, LSM-Trees vs B-Trees, Vector Clocks