Alicia Sun

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EDUCATION

University of Pennsylvania **May 2026**

BSE & MSE Computer Science, Minor in Statistics

- **Coursework:** Data Structures/Algorithms, Operating Systems, Cloud Computing/Networking, Machine Perception, Graphics, Distributed Systems, Databases, Artificial Intelligence, Computer Organization/Design

EXPERIENCE

Datadog — Software Engineer Intern, Applied AI - Batch Engineering **May 2025 – Aug 2025**

- Designed and implemented gRPC-based APIs in Go to serve version-triggered anomaly detection results
- Migrated Python-based McNulty (legacy web/query stack) HTTP endpoints to Go-based RAPID (modern API framework) services to improve reliability and reduce latency for Deployment Analysis
- Used Python and Terraform automate the configuration of software monitors across batch infrastructure

University of Pennsylvania — Teaching Assistant, CIS 4480/5580 Operating Systems **Jan 2025 – May 2025**

- Led office hours while provided technical debugging support, and on assignments/infra team

Gusto — Software Engineer Intern, Security – Identity Team **May 2024 – Aug. 2024**

- Built features with Ruby on Rails, GraphQL, React to enhance suspicious activity detection and risk tooling
- Launched suspicious account reporting UI and internal dashboards, reducing CX support calls by 40%
- Refactored key GraphQL resolvers and queries to enhance reporting performance and accuracy

University of Pennsylvania — Research Assistant, GRASP Lab **May 2023 – Aug. 2023**

- Researched Neural Radiance Fields for 3D scene reconstruction under Prof. Pratik Chaudhari
- Implemented core modules for positional encoding, hierarchical volume sampling, and differentiable rendering pipelines in PyTorch

PROJECTS

Distributed Cloud System (Storage and Webmail) — C++, Makefile

- Led backend development of a fault resilient distributed storage system with dynamic tablet partitioning, LRU-based memory eviction, and inter-server communication via stream sockets
- Fault tolerance w/ checkpoints, logging, primary-secondary replication; Coordinator heartbeat + redirection
- Enhanced scalability via dynamic tablet splitting to optimize load distribution and storage efficiency

Mini Minecraft — C++, Qt

- Collaborated with a team of 3 to develop a 3D exploration program featuring core Minecraft functionalities
- Engineered player physics, multithreaded terrain generation, and NPC spawning/movement systems

UNIX-like Operating System — C, Makefile, Docker

- Engineered essential subsystems including a kernel/scheduler, FAT file system, and user shell interactions
- Scheduler uses spthread, handles thread suspension, resumption, and resource allocation across instances
- File system operates on a single file in the host file system and shell comprises of 19 distinct built-ins

Moggerstram — Javascript, Java, React, Node, SQL, EC2, RDS, S3, ChromaDB, OpenAI, Kafka, Socket.IO, Spark

- Instagram-like social media app with adsorption ranked feed, chats, hashtags, profiles, friends, NLP search
- Backend hosted on EC2 instance connected to RDS models, ChromaDB for image similarity, S3 for images, Kafka for news streaming, socket connection for low-latency live chatting, Spark for adsorption algo

SkillTree (skilltree.one) — Python, Flask, Metaphor API, OpenAI, TypeScript, MongoDB

- Led Hackathon-winning app that generates personalized learning roadmaps w/ GPT and AI search
- Won 2nd Place for Best Use of Metaphor API at PennApps; onboarded 100+ users post-hackathon

SKILLS & AWARDS

Skills: Python, Flask, SQL, R, Java, JavaScript, TypeScript, Ruby on Rails, ReactJS, HTML/CSS, C, C++, Linux
Awards: US Earth Science Olympiad Finalist, National Merit Finalist Award, CIS Senior Design Best Overall Project