

RICHARD SO

☎ 347-281-3815 | ✉ richardso2021@gmail.com | 🐙 github.com/richardso21 | 🌐 in/richardso21 | 🌐 sorichard.com

EDUCATION

Georgia Institute of Technology 08/2024 – 05/2025
M.S. Computer Science, Machine Learning — GPA: 4.0 Atlanta, GA

- Coursework: ML, Deep Learning, Computer Vision, NLP, Databases, Networks, Algorithms Honors

Georgia Institute of Technology 08/2021 – 05/2024
B.S. Computer Science — GPA: 4.0 Atlanta, GA

WORK EXPERIENCE

Amazon Web Services 05/2024 – 08/2024
Software Engineering Intern (ML)

- Analyzed developer experience across AWS through quantitative features extracted from recorded workflow sessions.
- **Reduced runtime by 85%** for a data pipeline by leveraging a parallelized fork-join model with AWS Lambda functions.
- Automated activity labeling of session screenshots using Amazon Rekognition, Textract, and Anthropic's Claude LLMs.

Defense Advanced Research Projects Agency (DARPA) 05/2024 – Present
Research Assistant

- Explored benchmarking strategies to evaluate against state-of-the-art, fine-tuned LLMs in financial/economic contexts.
- Experimented with **hierarchical knowledge graphs** to aid in query-focused summarization tasks with GraphRAG.

Tanium 06/2023 – 08/2023
Software Engineering Intern

- Implemented CRUD logging into a backend PostgreSQL database and REST API to elevate user visibility of Tanium Server.
- Rapidly tackled **50+ feature/bug tickets** within a 10-week internship maintaining a Knex.js and React TypeScript codebase.
- Exercised test-driven development and data validation best practices using Jest, Jasmine, and Joi.

Georgia Tech College of Computing 01/2023 – 05/2024
Senior Teaching Assistant

- Lectured biweekly to 50+ students on computer architecture foundations, the C language, and memory allocation concepts.
- Developed unit testing suites, docker images for auto-grading, and course software for **1000+ students per semester**.

Union Pacific 05/2022 – 08/2022
Technology Intern

- Designed explainable ML regression models to estimate rail shipment prices for customers using XGBoost and SHAP.
- Performed rigorous feature engineering to achieve a **31% accuracy gain** versus UP's existing pricing analytics solution.

PROJECTS

Domain Generalization with Mixture of Experts | *PyTorch, Lightning, W&B* (🔗) 12/2024

- Investigated MoEs potential for robust, efficient classification for out-of-domain data splits of the iWildCam competition.
- Orchestrated **large-scale deep learning experiments**, sweeping across 75+ hyperparameter and model configurations.

Generative Data Augmentation for Image Classification | *PyTorch, Stable Diffusion, ControlNet* (🔗) 04/2024

- Experimented with multiple image generative models to enhance image classification accuracy when data is scarce.
- Observed a **10% F1 increase** for Resnet-50 on a sparse dataset when augmented with ControlNet-generated images.

LC3Tools | *C++, Vue, Electron, LC-3 Assembly* (🔗) 09/2023 – 05/2024

- Lead maintainer of the educational tooling suite to code, assemble, and simulate assembly programs for the **LC-3**.
- Contributed **6000+ lines of code** via major quality-of-life improvements through student and instructor feedback.

SKILLS

Programming Languages | Python, TypeScript/JavaScript, C/C++, Go, Java, Lua

Frameworks & Libraries | React, Svelte, Express, Electron, Flask, NumPy, Pandas, SkLearn, PyTorch, HuggingFace

Databases & Misc. | PostgreSQL, SQLite, RocksDB, MongoDB, Firebase, Git, Docker, AWS, Neovim