Richard So

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Education

Georgia Institute of Technology 08/2021 − 05/2025
B.S. & M.S in Computer Science, concentration in Interactive Intelligence — GPA: 4.0 *Atlanta, GA*
- Coursework: Data Structures, Computer Architecture, Discrete Math, Algorithms Honors, Graduate Machine Learning

Skills

Programming Languages	Python, TypeScript, JavaScript, Go, C, C++, MATLAB, Java
Frameworks / Libraries	React, Jest, Express, NumPy, Pandas, Matplotlib, Scikit Learn, PyTorch, Keras
Misc. Technologies	Git, Jira, Github Actions, Vim, Firebase, PostgreSQL, SQlite, Docker, LaTeX, Salesforce CRM

Work Experience

Tanium — *Software Engineering Intern* 06/2023 − 08/2023
- Developed **RESTful API** routes and frontend elements for a new interface that audits user **CRUD** operations on an underlying **PostgreSQL** database, improving customer visibility into the server console's state by 10x.
- Exercised test-driven development and data validation using **Jest**, **Jasmine**, and **Joi** to ensure UI and API reliability.
- Delivered rapid improvements & bug fixes in a **Knex.js** and **React TypeScript** monorepo, tracked using **Jira Kanban**.

Georgia Tech College of Computing — *Teaching Assistant* 01/2023 − Present
- Led biweekly lecture sections of a 50-student cohort in Computer Organization & Programming (CS 2110).
- Mastered and taught the foundations of computer architecture, datapath tracing, **LC-3 assembly**, and the **C language**.
- Aided 800+ students in course material inquiries and assignment debugging through office hours and student Q&A forms.

Union Pacific — *Technology Intern* 05/2022 − 08/2022
- Created and deployed an internal tool in **Angular** to simulate prices for hypothetical shipments based on past trends.
- Designed **ML regression** models for such price simulations/estimations using **Salesforce CRM Analytics** and **XGBoost**.
- Performed rigorous feature engineering on historical shipment datasets to maximize model accuracy up to 97% and decrease error margins of estimations by 31% versus UP's existing pricing analytics solution.

Georgia Tech EPIC Lab — *Undergraduate Research Assistant* 01/2022 − 08/2023
- Analyzed data across 400+ experimental trials to discover optimal human exoskeleton torque assistance profiles.
- Automated a data pipeline for N-D signal time series into **MATLAB** structures for convenient access and distribution.
- Optimized data loading for **ConvNet** gait phase estimators to be 25x faster with **NumPy** vectorization.

Brooklyn College CUNY — *Independent Researcher* 07/2019 − 12/2021
- Performed research on **audio and vision deep learning** applications under Dr. Michael I Mandel.
- Refined an existing bird audio detection **neural network** to be over 90% accurate using the PCEN audio preprocessor.
- Utilized foreground segmentation models to predict and automatically annotate animal presence in image data.
- Co-Author of a 2020 **IEEE ICASSP** conference paper featuring my research on ML for bird audio detection.

Projects

LC-3 Program Assembler and Simulator ⌂ | *Go, Assembly, Little Computer 3* 12/2022
- Built a computer simulator in **Golang** that executes object files, satisfying nearly all specifications of the LC-3 ISA.
- Assembler supports syntax error checking and conversion from LC-3 assembly into object (binary) executables.

Solar Car Telemetry System ⌂ | *C++, PlatformIO, SQLite* 08/2021
- Prototyped a real-time solution to measure and transmit vital statistics of a solar car to a local **SQLite** database.
- Programmed microcontrollers for precise communication between multiple hardware modules (GPS, ADCs, LoRa Radio).

Achievements

- Cultivated 800,000+ viewers and 970+ followers in my technology/programming blog on Medium.
- Winner of the 2021 Milton Fisher Scholarship for Innovation and Creativity.
- 1st Award Winner of the 2020 Terra NYC STEM Fair.