

# RICHARD SO

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## EDUCATION

### Georgia Institute of Technology

08/2021 – 05/2025

B.S. 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](#).
- 1<sup>st</sup> Award Winner of the 2020 Terra NYC STEM Fair.