Steven Liu

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EDUCATION

Georgia Institute of Technology B.S. in Computer Science *(3.77/4.0)* *May 2025*

- Courses Included: Systems and Networking, Design and Analysis of Algorithms, Intro to Perception and Robotics, Data Structures & Algorithms, Linear Algebra, Multivariable Calculus, Probability & Statistics

EXPERIENCE

Georgia Tech iOS Club *Swift, SwiftUI, Firebase, Figma, Git, MVVM Pattern*

Tech Lead *Jan 2023 - present*

- Leading a team of 15 members in a semesterly project format. Led 3 iOS projects since becoming a lead.
- Hosted Swift & SwiftUI & Firebase tutorial for new club members.
- Collaborates with Georgia Tech Design Club to design intuitive user experiences for projects.

PROJECTS

ThoughtBank App - *SwiftUI, Firebase Auth, Firestore, Git* *Sep 2023 - Dec*

- Built a fully working iOS app that allows users to upload and engage with anonymous thoughts.
- Structured the code in MVVM architecture for better readability and scalability.
- Constructed frontend through SwiftUI by building login, main feed, and setting screens' UI.
- Constructed backend (user-info database) through Firebase Auth & Firestore.
- Implemented an error-response system to handle user and network-induced faults.

Word-addressable 32-bit Processor with ARM & LC2200's ISAs - *CircuitSim* *Jan 2024 - Present*

- Built ALU, RAM, and the Register File to complete a datapath using simulated circuits.
- Modeled its control scheme and designed a Microcontroller with 3 ROMs & a Mux & a State Register.
- Wrote the Microcode Control Program and integrated the Microcontroller into the datapath to complete a LC2200 (little computer).

Trash-Sorting Robot (Sense-Think-Act Loop) - *Python, Numpy, Google Colab* *Jan 2024 - Present*

- Modeled the world state with a random variable for 5 categories of trash with a prior probability distribution
- Simulated trash detection for robot's Conductivity Sensor & Computer Vision Sensor & Scale Sensor. through inverse transform sampling.
- Constructed robot's perception by fusing all measurements from 3 sensors into 1 likelihood function.
- Built an expected-cost minimizing function that considers the robot's perception and maximizes the rewards of actions.

Optimization of Investment for Florida Wild Plants Recovery Programs - *MATLAB* *Nov 2022 - Dec 2022*

- Ranked in Global Top 7%.
- Designed a Genetic Algorithm mimicking Natural Selection process to find the global optima for investment schedule.
- Scraped & cleaned data in the financial report of 48 investment projects to feed the algorithm.
- Projected to raise $2,107,285 funds every year and see profits grow 600%, starting from the 5th year.

SKILLS

Languages/Frameworks: Java, Python, C, Swift, SwiftUI, UIKit, HTML & CSS, Javascript, MATLAB
Technologies: Git, Pandas, NumPy, CircuitSim, Google Colab, Figma
Databases: Firebase Auth, Firestore, Firebase Storage