Alexander Y. Liu

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Education

Georgia Institute of Technology — GPA: 3.6 — Atlanta, GA
B.S. Computer Science, 2021 — *August 2019 - Present*
- Selected courses: Data Structures and Algorithms, Objects and Design, Honors Linear Algebra with Abstract Vector Spaces, Discrete Mathematics, Combinatorics, Statistics and Applications, Macroeconomics

Thomas Jefferson High School for Science and Technology — Alexandria, VA
Main Interests: Computer Science, Neuroscience — *September 2016 - June 2019*
- Selected coursework: Artificial Intelligence, Mobile Application Development, Web Application Development, AP Computer Science A and Data Structures, Neuroscience Research Lab, Neurobiology, Research Statistics

Selected Experience and Projects

The full list of projects I have worked on can be found on my GitHub: github.com/2019aliu

- **Software Developer Intern** — Rockville, MD - remote
  S&C Electric — *May 2020 - Present*
  - Build a web application to view and edit settings of electrical products for consumers nationwide
  - Design a proxy-microservice type application to allow for easier maintainence and construction
  - Construct UI with React.js and supporting proxy with GraphQL and Apollo for client-side operations
  - Implement, test, and document microservice to retrieve data from S&C Electric's devices, and a microservice to open channels for subscribing to the devices' data
  - Technologies used: Java, Javascript, GraphQL, Redis, Spring Boot, React.js, WebSocket and STOMP, Docker

- **Recycling Website** — Atlanta, GA - remote
  Google Developer Student Club, Georgia Tech Chapter — *June 2020 - Present*
  - Create website and mobile application to handle administration of Georgia Tech's Office for Solid Waste Management and Recycling
  - Connect the user interfaces to the existing Firestore database
  - Improve design of user interfaces
  - Technologies used: Javascript, Dart, Flutter, Angular, Firebase/Firestore, Figma

- **TAG** — Atlanta, GA
  Create-X: Idea to Prototype — *January 2020 - April 2020*
  - Created a tracking device that has better range than most commercially available tracking tags by utilizing GPS/Bluetooth/Wifi technology
  - Technologies used: Android Studio, Java, XML, Google Nearby Messages API, Google Maps API

- **talk:now** — Berkeley, CA – remote
  hack:now (CalHacks 2020) — *April 24-26, 2020*
  - Made a video chatting application for people experiencing hard times to chat with someone in a similar situation
  - Top 30 Finalist in the main prize category out of 300+ submissions
  - Technologies used: Vue.js, Javascript, WebRTC/WebSocket, Peer.js, SASS

- **Software Developer Intern** — Greenbelt, MD
  Fluency Security Corporation — *June 2019 - August 2019*
  - Developed a web-based trouble ticketing system, FasterIncidentResponse, using MongoDB-Gin-Vue.js-Golang fullstack framework, and integrated it into existing log management software
  - Created developer's guide documentation with Postman, Markdown, and Web Developer tools
  - Unit tested log management software with Golang's unit testing framework
  - Technologies used: Golang (including Gin server), MongoDB, Bootstrap, Vue.js, Node-RED, Visual Studio Code

Research Experience

- **Migraine Research** Great Falls, VA
  Neuroscience Research Lab *June 2018 - January 2019*
  - **Title**: Exploration of Two-Dimensional Materials for Inhibition of the Calcitonin Gene-Related Peptide Pathway in Migraines
  - Employed high-performance CPU cluster and slurm management in collaboration with high school's computer systems lab
  - Continued using ABINIT, an open-source package for making predictions about molecular systems based on solving quantum physics equations.
  - Research proposal accepted by neuroscience research lab at high school, received guidance and $2400 funding for project
- **Alzheimer's Disease Research** Alexandria, VA
  Project Lead *June 2017 - August 2017*
  - **Title**: Exploration of Chelation Materials for Treatment of Alzheimer's Disease
  - Used ABINIT, an open-source package for making predictions about molecular systems based on solving quantum physics equations.
  - Submitted to Siemens Competition 2017, achieved the semifinalist award

Skills

Languages: Java, Python, JavaScript, Golang, SQL, HTML, CSS, LaTeX, Dart

Infrastructures and Frameworks: Node.js, React.js, Bootstrap, Git, MongoDB/MongoDB Atlas, Firebase, Redis, Vue.js, Keras, Tensorflow, WebSocket, Heroku, MySQL, PyTorch, Angular, Flutter

Software: Terminal (Linux, Mac), Postman, Vim, Jupyter Notebook, Android Studio, Figma, Visual Studio Code, IntelliJ IDEA, PyCharm, jGRASP, Google Colabratory, Windows Subsystem for Linux (WSL)

Community Leadership

- **Instructor of *Introductory Computer Science*** Chantilly, VA
  Hope Chinese School *January 2015 - June 2019*
  - Co-founded and instructed first computer science course in Hope Chinese School
  - Outstanding service recognition for multiple years (2017, 2018) for voluntary service, received paid position in 2018-2019 school year

Non-academic Activities

- **Member, Georgia Tech Swim Club** Atlanta, GA
  Georgia Tech *August 2019 - Present*
  - Practice, compete, socialize, and volunteer with the members and coaches of the swim club
  - Qualified for the 2020 College Club Swimming National Championship
- **Member, GT Investment Club** Atlanta, GA
  Georgia Tech *January 2020 - Present*
  - Studying in the mentorship program to understand accounting and investing fundamentals and strategies
- **Member, GT Pianoforte** Atlanta, GA
  Georgia Tech *January 2020 - Present*
  - Play piano at concerts and socialize with other members of the club