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Education

Georgia Institute of Technology GPA: 3.6 Atlanta, GA
B.S. Computer Science, 2022 *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 - Present*
  - Create a tracking device that has better range than most commercially available tracking tags by utilizing Global Positioning System (GPS)/Bluetooth/Wifi technology
  - Uses GPS to determine vicinity of device within 200 feet and Bluetooth/Wifi/Ultrasound to identity exact location through visual and auditory cues
  - 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/ES6

Infrastructures and Frameworks: Git, Node.js/V8, React.js, Bootstrap, WebSocket, MongoDB/MongoDB Atlas, Firebase, Keras, Tensorflow

Software: Terminal (Linux, Mac), Vim, Android Studio, Figma, Jupyter Notebook

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