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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

- **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 GPS technology
  - Technologies used: Android Studio, Java, GPS, Google Maps API
- **CoronaDigest** Charlottesville, VA
  HookHacks 2020 *March 28-29, 2020*
  - Make a web application that provides the latest news about Coronavirus (COVID-19), including a 2-minute daily digest, a 3D globe of Coronavirus cases, and financial information related to the Coronavirus.
  - Technologies used: Python, Plotly, Seaborn, Matplotlib, MongoDB Atlas, Pandas, Jupter Notebook, Flask, Jinja, Bootstrap
- **Season2Season** Atlanta, GA
  Agency Club *October 2019 - December 2019*
  - Create a tool to change the season of an outdoors picture using a Generative Adversarial Network (GAN) machine-learning model trained with 1000+ images
  - Technologies used: PyTorch, Python
- **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
- **Arcade Game Suite** Alexandria, VA
  Web Applications Development *September 2018 - January 2019*
  - Designed and developed web-based suite of games, including U.S. Minesweeper, Tetris, and a word-finder assistant for Scrabble
  - Technologies used: HTML/CSS/JS (including jQuery, AJAX), SQL, Node.js
- **Website Developer and Administrator** Chantilly, VA
  Hope Chinese School *August 2018 - December 2018*
  - Helped develop and administer a new website for cultural and enrichment center serving 5000 users
  - Former administrator of the website, managing a system of tens of thousands of users.
  - Website: https://www.hopechineseschool.org
  - Technologies used: HTML/CSS/JS, Django, SASS

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

Software: Terminal (Linux, Mac), Postman, Android Studio, Visual Studio Code, Jupyter Notebook, IntelliJ IDEA, PyCharm, jGRASP, Google Colabratory

Infrastructures and Frameworks: Node.js, React.js, Bootstrap, Git, MySQL, MongoDB/MongoDB Atlas, Firebase, Redis, Linux OS (Ubuntu, Fedora)

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