Alexander Y. Liu
331281 Georgia Tech Station
Atlanta, GA 30332-1400

703.220.5928 (cell)
aliu338@gatech.edu
https://github.com/2019aliu

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

Skills

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

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

Infrastructures: Git, MySQL, MongoDB (including Atlas), Node.js, Linux OS (Ubuntu, Fedora)

Selected Experience and Projects

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

- **Tracker-X** Atlanta, GA
  Create-X: Idea to Prototype *January 2020 - Present*
  - Create a tracking device that has better range than most commercially available tracking tags
  - Uses Global Positioning System (GPS) to determine vicinity of device, Bluetooth/Wifi to identity exact location, and Android Studio to create a mobile app to easily manage tracking
  - Technologies used: Android Studio, Java, GPS, Google Maps API

- **FoxStocks** Athens, GA
  UGAHacks 5 *February 7-9, 2020*
  - Created web application to teach new investors how to invest in stocks. My part was mostly backend work.
  - Won best use of MongoDB Atlas
  - Technologies used: Flask, Jinja, MongoDB Atlas, Python, BlackRock Aladdin API

- **Season2Season** Atlanta, GA
  Agency Club *October 2019 - Present*
  - 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

- **Tetris: Forty Lines** Alexandria, VA
  Mobile Applications Development *March 2019 - June 2019*
  - Implemented a swipe-capable Tetris Android app in Android Studio with Java backend
  - Technologies used: Android Studio, Java

- **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

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