Ziyao(Zeil) Ren

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EDUCATION

Georgia Institute of Technology **Atlanta, GA**

M.S. in Computer Science, Specialization in Computer System GPA: 3.80/4.0 Aug.2021 - Dec. 2022

- **Relevant Courses:** Graduate Algorithm, Mobile Applications and Services, Database System Concepts and Design, Computer Vision, Information Security, Enterprise Computing, AI Storytell In Virtual World, etc.

Georgia Institute of Technology **Atlanta, GA**

B.S. in Computer Science GPA: 3.96/4.0 Aug.2018 - May. 2021

- **Relevant Courses:** AI, Database Systems, Computer Organization & Program, Design & Analysis-Algorithm, Objects and Design, Knowledge-Based AI, Machine Learning, System and Networks, Computer Networking, etc.

Emory University **Atlanta, GA**

B.S. in Chemistry, Minor in Mathematics Aug.2015 - May. 2021

SKILLS

- **Programming:** Java, Python, C, JavaScript, HTML, CSS, Assembly Language, SQL
- **Framework, Tools, and Libraries:** PyCharm, IntelliJ, Microsoft Office, Mathematica, MySQL, Firebase, Git, Android Studio, Visual Studio, Node.js, D3, Tableau, React, PyTorch, MongoDB, Jest, Cypress, etc.

EMPLOYMENT

Software Engineer Intern | Intuit | San Diego, California May. 2022 – Aug. 2022

- Drove the process of components rewriting from legacy **jQuery** to **React**, worked with web designers to refine the visual design of UI widgets to improve their readability and contextuality, and implemented new search algorithms and debounce functions to improve the performance by over 40%
- Monitored old service request functions by inspecting their usages on **Splunk**, removed around 1200 lines of deprecated code, and reduced active service request functions' file size by half through refactoring
- Took the initiative on implementing **Cypress** tests that replace manual checks after each release, and contributed to the team's daily tasks such as maintaining hundreds of web pages, adding new features according to users' feedback, and solving alerts

Software Engineer Intern | Studyfind | Atlanta, GA Aug. 2020 – May. 2021

- Built a database using **Firebase** that stores information of thousands of users, and performed HTTP requests using **Axios** library for pulling, editing, and displaying information from the database
- Implemented webpages using React hooks and **Chakra UI** components and achieved functions such as user authentication, communication between different users, notifications, and automatic evaluations of users' qualifications based on surveys

Undergraduate Researcher | Georgia Institute of Technology | Atlanta, GA Aug. 2020 – Dec. 2020

- Visualized directed acyclic data that contains more than 10,000 data points by using the **D3** library and increased the overall computation time by more than 40% on average compared to the previous Matlab functions
- Improved the UI by adding functions like allowing color changes and arrow direction changes on click, implementing zoom and drag functions, and allowing users to input or output modified datasets by using **AJAX**

PROJECTS

Georgia Tech Schedule Helper

- Build a server using **AWS** that automatically scrapes data about Georgia Tech's course information from Georgia Tech's Oscar and other third-party websites using **BeatifulSoup** library and created a **Firebase** database that helps authenticate users, stores user information in Real-time database and course-related information in Firestore
- Created a mobile app using **Android Studio** that allows users to search for courses, build schedules and look for details like course grade distribution and professor ratings, and gradually improved the app's UI and functionality by creating clickable prototypes through **Figma**, interviewing potential users, and performing Usability testing

Covid-19 Data Aggregation and Visualization

- Fetched Covid-19 related data from John Hopkins University, New York Times, and 1point3acres, restructured the data into JSON format using Pandas, and pushed data into **MongoDB Altas** using **PyMongo**
- Connected Tableau with **MongoDB Altas** using BI connecter, created comparative visualization heatmap and histogram dashboards between different data sources, and built the user interface webpages using **Flask**

Atlanta Theater Database and Movie Score Prediction

- Created a **MySQL** database of the theaters by drawing the Relational Schema and implementing the stored procedures
- Used unsupervised learning techniques(eg. **PCA, GMM, and K-means)** and supervised learning techniques (eg. **Random Forest and SVM**) to predict the satisfaction scores of movies based on 13 other features using the dataset provided by Kaggle, and reached an accuracy of 0.899 for the SVM model and 0.983 for the Random Forest model