Ziheng Xiao

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EDUCATION

Georgia Institute of Technology, Atlanta, GA

M.S. in Electrical and Computer Engineering, GPA: 3.8 *Jan. 2021 – Dec. 2022 (expected)*

The Chinese University of Hong Kong - Shenzhen, China

B.E. in Electronic Information Engineering, GPA: 3.7 *Sep. 2016 – May 2020*

Relevant Coursework: **Data Structures and Algorithms**, Computer Architecture, Operating Systems, Distributed and Parallel Computing, **Database System Implementation**, Data Visualization and Analytics, Computer Vision, Network Security, **Machine Learning**.

SKILLS

- Programming Languages: Java, Python, C++, JavaScript, SQL, HTML, CSS, Scala, MATLAB
- Development Tools: Qt, MySQL, Redis, Spark, Hadoop, React, D3.js, Node.js, Flask, Django, MPI, Linux, git, Docker, AWS, OpenCV, CUDA, PyTorch, TensorFlow, Arduino

WORK EXPERIENCE

Software Engineer at Surgical AI, Hangzhou, China *Jan. 2021 – July 2021*

- Developed the visual navigation of a nasal swab medical robot for COVID testing with **Python** and **Google Face Mesh**, and achieved accurate facial data detection within a distance of 10cm.
- Developed a cross-platform interactive tool on **Linux** with **Python**, built the server by **Flask** and the database by **Redis**.
- Integrated **SLAM** methods with **OpenCV** to process the facial point cloud data, including colored registration, deformations, and non-rigid reconstruction.
- Implemented the calculation process using **CUDA** and a Python version to achieve a speedup of 250%.

Product Engineer Intern at UBTECH Robotics, Shenzhen, China *July 2020 – Dec. 2020*

- Designed and simulated an automatic driving traffic scene for AI education using an **Arduino-driven** toy car.
- Trained and improved YOLO **deep learning** models for object recognition using **PyTorch**, and achieved an accuracy of 96%.
- Implemented the car routing by **A*** algorithm and **MPI** within 100ms and built UI for customized control in **C++**.

COURSE PROJECTS

Crime Analysis in Atlanta – a web app for crime control and safety suggestions

- Filtered crime data and extracted features with **Hadoop** and **Spark**. Applied multilayer perceptron (MLP) **ML** model to fit the crime prediction and achieved an accuracy of 65%.
- Designed and implemented an interactive web app to visualize crime predictions statistics in heatmap within 6 months and 30 minutes time gap, with **React**, **D3.js,** and **Google Map API**.
- Developed a backend server in **Java** powered by **AWS** EC2 for route planning to reduce the risk.

EVA Operator Optimization – video analytics system design and implementation practice based on BuzzDB

- Distributed the system on multiple platforms backed by **MySQL** and **Django** to run the video analytics models.
- Designed new operators and user-defined functions to support queries in SQL statements and implemented related **expression objects** and planners to parse the input. Optimized the query by adding validations and preprocessing.

FIFA Player Info – database structure design and visualization for searching players

- Developed the UI capable of customized searching, filtering, editing of player information with **HTML** and **Javascript**.
- Applied **MySQL** to design the relation schema and database structure. Built the info system backed by **Django** and **Java**.

Medical Management – an interactive appointment system for patients

- Designed and implemented a system capable of scheduling appointments between patients and doctors on the local area network (LAN), based on **C++** and **Qt**.
- Applied the **Jieba NLP API** for **text segmentation** and **recommendation algorithm** over the extracted keywords from symptom descriptions and achieved average matching accuracy of 80%. Generated concise medical records for prescriptions.

AWARDS

Undergraduate Research Award (2019), Academic Scholarship (Class B, 2018), Dean's List (top 10%, 2017-2019), Deloitte Intelligent Product Design Competition (semi-final, 2019)