Albert (Geyang) Xu

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EDUCATION

University of California, San Diego **Sep 2022 - Mar 2024**
M.S in Computer Science (GPA: 3.88/4.0) *La Jolla, CA*
- Courses: Principles of Computer Operating Systems, Principles/Program Languages, Statistical NLP, Principles of Computer Architecture, Computer Science and Engineering, Principles of Machine Learning, Principles of AI

University of Liverpool **Sep 2018 - Jun 2022**
B.S in Computer Science (GPA: 3.93/4.0, top 3%) *Liverpool, UK*
- Courses: Advanced Object Oriented C Languages, Software Engineering, Complexity of Algorithms, Biocomputation

PROJECTS

UCSD Halıcıoğlu Data Science Institute **Oct 2023 - Present**
Research Assistant | Supervisor: Babak Salimi *La Jolla, CA*
- Developed and implemented a framework for specifying and injecting complex data quality issues into datasets, using **Python** to handle data biases and improve fairness and accuracy in machine learning models.
- Designed and executed experiments to evaluate the robustness of data cleaning tools and machine learning models against various data biases such as missing values, selection bias, and outliers.
- Collaborated on the development of a declarative language for pattern specification, allowing users to define intricate dependencies between dataset attributes to simulate real-world data corruption.

SurfStore: Distributed Cloud Storage Server Project | Link **Jan 2023 - Mar 2023**
- Designed and implemented a **Dropbox**-like cloud-based file storage service using **Go**, featuring distributed storage and consistent hashing algorithms for efficient file management
- Built for large-scale data handling, the project showcased excellent scalability during tests and efficiently met the data storage demands of thousands of users through client-server communication via **gRPC**
- Enhanced the system's fault tolerance by implementing the **RAFT** distributed consensus protocol, which led to a 50% improvement in error recovery efficiency during testing

SaveTime: A Seat Assignment System for Trains at UoL | Link **Aug 2021 - May 2022**
- Designed and implemented a seat assignment web application for trains with **JavaScript** and **Python**, supporting advanced seat recommendation and real-time background management
- Utilized **Python** and **Flask** for backend development to manage booking orders and administrator settings, while leveraging **Vue** and **Vuex** for a responsive frontend, focusing on seat recommendation and visualization features

AlgoRoute: AI-Driven Logistics Route Planning System at JNU | Link **Jun 2021 - Oct 2021**
- Performed **Python**-based experiments to identify optimal algorithms for improving supply chain route efficiency
- Utilized diverse algorithms like taboo, adaptive large neighborhood, ant colony, and genetic algorithm to achieve a **35%** time reduction and **23%** cost savings in route planning compared to single-algorithm applications
- Optimized routes with customers' parameters like time windows, vehicle capacity and vehicle transportation costs

Central Air-Conditioning Intelligent Temperature Control Project **Jun 2021 - Dec 2021**
- Established a 24/7 temperature and humidity monitoring and adjustment system that records data every 5 minutes without interruption, with a data retention capacity of three years
- Automatically adjusted the temperature according to the magnitude of temperature and humidity changes, which was 40% more stable than traditional thermostats and saved 30% of electricity

Algorithm Visualization Website **Feb 2021 - May 2021**
- Developed a neural network algorithms learning platform for students using the Django framework, integrating features like neural algorithm visualization, discussion forums, and a login system
- Attracted over 100 loyal student users and achieved the top score in the group project due to its user-friendly design and sophisticated algorithm

Feasibility Study on Improving Logistics End-of-Pipe Delivery Based on Computer Vision **Jan 2019 - Feb 2019**
- Led a university-level research project designing a logistics delivery plan utilizing custom quadcopter drones
- Attained a 97% landing accuracy in distribution tests using computer vision for sign landing point recognition
- Secured the school's Explorer's Award and "Best Presentation" distinction among numerous projects for pioneering integration of computer vision and drone delivery

EXPERIENCE

UCSD ECE Department **Feb 2024 - Jun 2024**
Web Developer | Supervisor: Alon Orlitsky *La Jolla, CA*

- Developed and maintained the ita workshop website, leveraging a tech stack of **Django**, and **React**
- Handled a user base of nearly **one thousand**, significantly enhancing site performance and user experience
- Improved logic for user video and document uploads and optimized database structure to prevent data loss
- Managed **PostgreSQL** database and employed **Amazon S3** for robust data storage, enhancing data integrity

Citmit **Jun 2023 - Sep 2023**
Software Engineer Intern *La Jolla, CA*

- Transformed the permitting process by developing backend services using **Python** and **Django** to automate the generation of building permit application materials, reducing wait times from months to hours
- For User Authentication, utilized JSON Web Tokens (**JWT**) for secure identification and integrated OAuth 2.0 for third-party logins via platforms like Google and Facebook, enhancing both flexibility and security
- Implemented File Management Service with **Amazon S3** to streamline secure storage and retrieval of course materials, incorporating role-based access for enhanced security

Sensing IoT Group Ltd. **Jun 2022 - Sep 2022**
Software Engineer Intern *Wuxi, China*

- Developed a full-stack **Java** application for real-time sensor data collection, manipulation, and display, enabling customers to easily monitor and report issues with their in-production equipment
- Utilized Java **Spring Boot** and **Netty** for the server framework to enhance asynchronous communication, **MySQL** for database storage, optimized SQL queries for rapid data retrieval, and designed **RESTful** database APIs capable of handling high data volumes to serve 300+ customers
- Leveraged frameworks such as **React** and **Angular** to implement real-time charts, alert notifications, and customizable user interfaces, ultimately contributing to a **97%** customer satisfaction rate

EXTRA CURRICULAR

Social Practice Committee **Jan 2019 - Mar 2020**
Academic Category Manager

- As the Academic Category Manager at XJTLU's premier volunteer organization, spearheaded the organization and execution of large-scale events, including a kick-off and award ceremony for social practice, collectively drawing over 2,000 attendees
- Supervised the academic social practice initiatives, playing a pivotal role in the evaluation and assessment of the results

G-Master Robot Club **Dec 2018 - Dec 2019**
President

- Oversaw the club's overall strategy, management, and operations, ensuring its continuous growth and prominence
- Launched the notable "Mechanical Era" robotics competition, attracting over 100 participants, and organized multiple seminars, drawing in an audience of 1,000+ enthusiasts
- Guided the club to clinch the “Most Progressed Club” award in 2019, highlighting our drive for excellence and innovation
- Successfully expanded the club's footprint by easing membership criteria and led an awareness campaign, resulting in a remarkable 300% surge in campus recognition

TECHNICAL SKILLS

Languages: Python, Java, Go, SQL, C/C++, R, Haskell, HTML/CSS, JavaScript, C#

Tools, Frameworks & Systems: Django, React, Git, Docker, AWS, Linux, gRPC, Matlab, PyTorch, Hadoop, Spark