Yizirui Fang

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Education

Johns Hopkins University — Baltimore, MD
Master of Science in Computer Science — *Aug. 2022 - Dec. 2023*

University of Nottingham — Nottingham, UK
Bachelor of Science in Computer Science with Honors, First Class, GPA: 3.86/4.0 (5%) — *Sept. 2018 - Jul. 2022*

Experience

Full-stack Software Engineer — Aug. 2022 - Dec. 2022
EJay, Object-Oriented Software Engineering Group Project

- Delivered online market with **RESTful API** utilizing **Express.js**, and **Docker** to provide exclusive community service of JHU and engage sustainability by second-hand good ordering and reach 92% good in Alpha release
- Designed and developed features to create and edit orders by **JSON**, image hosting, **MongoDB** and **Express.js**
- Optimized the networking and requests with input validation, token, and caching with **Express.js**, **Reat.js**
- Deployed goods recommendation systems based on history of behaviors with **Python** and **Docker**
- Designed and implemented the front-end pages to present goods and locations with **Material UI** and **Bootstrap**

Student Intern for Software and Technology — Sept. 2020 - Aug. 2022
The V-ROOM Lab XR Team, University of Nottingham

- One pending patent, one innovational software for education purposes with immersive technology (XR), and awarded the University of Nottingham Vice-Chancellor's Medal, reported by 39 news pieces with 271 M reach
- Created and developed multi-player customization scene, movement and objects sync features for PC and **STEAM VR** by **RPC** and improved the course evaluation from 3.8 to 4.6 in **C#** and **Photon Engine**
- Built moving, game, and interaction in the **STEAM VR**, and **GOOGLE VR** with **Unity** in **MVC** pattern
- Coached STEM Programming Summer School and faculty training workshops each over 50 people

Student Team Leader — Sept. 2020 - Apr. 2021
Distributed Road Network Monitoring System Group Project

- Led a team of five in **Agile** to deliver a distributed system to monitor daily road conditions with Web (**cloud computing**) and mobile application (**crowd sensing**), rated 4.8/5.0 by stakeholders
- Designed and implemented the road condition evaluation algorithm using **Python** with 91% accuracy
- Introduced back-end **RESTful APIs** and **locking** to support 200 **JSON** concurrencies in **Django**
- Developed cross-platform mobile applications in **MVVM** and **Flutter** with **Dart** to collect users' data and communicate with the server. Saved 60% of computing resources and networking bandwidth
- Built full-stack unit test and **CI/CD** with **GitLab Docker**, **Shell script**, and **XML**

Research Assistant — May - Sept. 2020
Efficient Reliable Machine Learning Methods Project, University of Nottingham

- First authored one working journal paper, An Empirical Study on Overlapping Techniques for Data-Efficient Inductive Conformal Prediction for Reliable Machine Learning
- Proposed and implemented a data sampling algorithm for reliable machine learning predication with 54% upgrade in accuracy and 16% in efficiency with **Python**, **Scikit Learn** and **TensorFlow**
- Proposed and proved with theoretical and empirical analysis the relationship among conformal predictor three data sets with **Python**, **Scipy** and **Statsmodel**

Project

Augmentation Techniques for Drift in Time-series Modelling — Jul. 2021 - May 2022

- Created large-scale databases for financial time-series data with ∼2 bn data points with **Spark** and **SQLAlchemy**
- Surveyed credit risk models in Gradient Boosting, Neural Network algorithm with **Python**, **NumPy**
- Proposed data augmentation algorithms against distribution drift over time, and improve the AUC of ML models from 0.73 to 0.85 with **LightGBM** under various economic factors

Technical Skills

Languages: Java, Python, C/C++, C#, JavaScript, CSS/HTML, SQL, Shell, PHP, OCaml, Haskell, Dart, MIPS
Frameworks: Node.js, React.js, Django, Unity, Maven, Docker, PostgreSQL, Spark, Shell, PyTorch, Scikit Learn, JUnit, MongoDB, Bootstrap, Material UI, SQLAlchemy, MVVM