

# Yizirui Fang

(+1)(667)391-4284 | yizirui.fang@gmail.com | linkedin.com/in/yizirui-f-b24968189/ | github.com/circleTreeF | They/Them

## EDUCATION

### Johns Hopkins University

MSc in Computer Science, GPA: 4.0

Baltimore, MD, USA

Aug. 2022 - Dec. 2023

### University of Nottingham

BSc in Computer Science with Honors, First Class, 5%

Nottingham, UK

Sept. 2018 - Jul. 2022

## TECHNICAL SKILLS

**Languages:** Java, Python, C/C++, C#, JavaScript, TypeScript, SQL, Shell, R, Dart, PHP, OCaml, Haskell, MIPS

**Frameworks:** Maven, JUnit, PostgreSQL, MongoDB, Express.JS, React.JS, Node.JS, Nginx, Django, Docker, Spark, Postman, Git, AWS, SQLAlchemy, Unity, Bootstrap, Material UI, PyTorch, TensorFlow, Scikit Learn, Pandas, NumPy

## EXPERIENCE

### Full-stack Software Engineer

Aug. 2022 - Dec. 2022

*EJay, Object-Oriented Software Engineering Group Project*

- Delivered online market in **Agile** utilizing **JavaScript** to provide exclusive community service of JHU and engage sustainability by second-hand commodity ordering and received 92% rating in the Alpha release
- Designed **RESTful API** to manage users and orders, host cloud images, **MongoDB**, **Node.JS**, and **Postman**
- Optimized the networking and requests with input validation, token, and caching with **Express.JS** and **React.JS**
- Deployed a past behaviors-based commodity recommendation system with **Python**, **Nginx**, and **Docker** to **AWS**
- Built UX to present commodities and visualize location with **Google Maps**, **Material UI**, and **Bootstrap**

### Software and Technology Intern

Sept. 2020 - Aug. 2022

*The V-ROOM Lab Mixed Reality 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
- Designed and implemented multi-player features: scene customization, player and object sync for PC and VR, by **RPC** and improved the network waiting time from 142s to 122s in **C#**, **OpenXR**, and **Photon Engine**
- Developed data storage for game status restoration and player inventory with **serialization** in **Unity**
- Developed UX of gaming, including player movement, player object interaction, avatar interaction, player dialogue, and, embedded browser in the **Steam VR** for PC and VR headsets, and **Google VR** for mobile with **Unity**
- Coached STEM Programming Summer School and faculty training workshops each engaging 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
- Created **RESTful API** and **locking** to support 200 **JSON** concurrency with **Django** and **PostgreSQL**
- Developed cross-platform mobile applications in **MVVM** and **Flutter** with **Dart** to collect sensors' data and communicate with the server. Saved 58% of computing resources and networking bandwidth
- Designed and implemented the road condition evaluation algorithm using **Python** with 91% accuracy
- Built full-stack unit and integration test and **CI/CD** with **GitLab**, **Docker**, **Shell script**, and **XML**

## PROJECT

### Augmentation Techniques for Drift in Time-series Modeling

Jul. 2021 - May 2022

- First authored **one working journal paper**, An investigation of data usage for Inductive Conformal Predictors
- Created large-scale databases for ~2 bn financial time-series data points with **Spark** and **SQLAlchemy**
- Surveyed credit risk models in Gradient Boosting, Neural Network algorithm with **Python**, **PyTorch**, **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

### Maintainable OOP Sokoban Game

Sept. 2020 - Dec. 2020

- Built Sokoban game engine to transfer and move avatars, save, undo, reset game status with music player, and learner board features in **MVC**, **Observer**, and **Factory** design patterns utilizing **Java**, **Gson**, **Maven**, **MySQL**
- Created unit, integration test for back-end with **JUnit** and reach 97% coverage
- Designed and implemented the adaptive GUI, mini web browser with **JavaFX** and **FXML**