Zehao Qian

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Education

Durham University   September 2023 – July 2024 (Expected)
Master of Science in Data Science (Social Analytics)   Durham, England, British
Zhengzhou University   September 2019 – July 2023
B.Eng in Industrial Engineering   Zhengzhou, China
- GPA 82.75/100, Rank 23/102, Scholarship in 2019, 2021, 2022
- A+ Courses: Electrotechnics, Contemporary Manufacturing System, Mechanical Manufacturing Engineering, IE software and Application, Enterprise Process Reformation, Engineering Optimization and 16 other programs

Honors and Awards

Computer Algorithms
- ACM/ICPC - Second Prize of Lanqiao Cup Python Algorithm Competition at Provincial Level

Mathematical Modeling
- The Meritorious Winner Prize of 2023 MCM/ICM - Using Lasso Regression and XGBoost to analyse the relationship between boat size, price and region.
- The Second Prize of 2022 12th Mathor Cup College Students Mathematical Contest in Modeling - Solving 5G Base Station Signal Coverage Problems based on Harmony Search Algorithm

Innovation and Business Plan Competition
- First Prize at Provincial Level in Challenge Cup Business Plan Competition (2022) and First Prize at Provincial Level in Challenge Cup First Prize at Provincial Level in Challenge Cup (2023)
- First Prize at Provincial Level in E-Commerce Competition Innovation, Creativity and Entrepreneurship (2022)

Research Experience

Computer and Industrial Engineering Group   September 2021 – Present
Group Member for **DevOps**, School of Management, Zhengzhou University   ⭘ CIEG Homepage
- **Solutions for Tobacco Production (China Tobacco Company Cooperation Project)**
    - This project will continue from May 2023 to 2024.
    - Identification of tobacco pests and diseases and drug dispensing scheme based on Natural language processing and Knowledge graph technology.
    - Using deep reinforcement learning (pointer network) to optimize cigarette production parameters and improve yield.
- **Teaching Assistant for Engineering Optimization** 🔗
    - In the spring semester of 2023, I made slide and courseware for engineering optimization course, mainly introducing Convex optimization and nonlinear optimization as well as root solution algorithm.
- **A game theory paper – Web 3D Technologies and Game Theory**
    - Constructed supermarket 3D models and customer positioning, used the mapping package called Felt and the Web 3D library Three.js.
    - Optimized of supermarket collocation based on combinatorial game theory, the paper will be published in journals in Mar.2024.
- **Reinforcement Learning based Q-learning Yard Crane Scheduling Optimization**
    - Research on replicating Q-learning algorithm and optimizing container scheduling for yard cranes.
    - Some mathematical models of the project will be solved using the GJO algorithm, and the relevant research results will be published on IEEE Transaction in Nov 2023.

Open-Source Contributions

Nashsweeper   Dec 2022 – May 2023
Project Author (Excellent Graduation Thesis)   ⭘ Nashsweeper Repo
- Nashsweeper shows a playful introduction of Nash equilibrium and designs a game named Nashsweeper, which is a game designed to find the pure strategy.   🌐 iPad Version 🌐 PC Version
- Nashsweeper core computing engine adopts the reget-value algorithm implemented with SQLite. As a Python package, it can be invoked in jupyter- notebook to deal with industrial and data science problems.

OpenIE – Open Source Industrial Engineering Foundation April 2022 – Present
Foundation Initiator, Project Leader 🌐 OpenIE foundation
- Prediction of Tool Wear in Machining Centers Based on Deep Learning and Its Industrial Application (Feature engineering and Recurrent neural network are used in this project). 🌐 OpenIE Repo
- Some other optimizations for industrial scenario problems.

FreeLeek Oct 2021 – Present
Project Author and Maintainer ⓞ FreeLeek ⓞ FreeLeek-ESP32
- FreeLeek is an open source server-end framework for transmiting financial data to app backend and WeChat platform by using Python Flask, Tushare Pro and Akshare.
- FreeLeek can automatically push finance news to WeChat official account subscribed by user.
- More users' function can be defined easily by editing python script such as quant trade algorithms, stock position management system.

Internship Experience

Tianjin Jinmao Int'l Freight Co., Ltd Jan 2022 – Feb.2022, Jun 2022 – Sep.2022
Server-side Development and Operation and Maintenance Engineer Assistant Tianjin, China
- Engaged in server operation and maintenance, back-end development, and database management.
- Developed company's enterprise resource planning system (ERP) and customer management system (CMS) utilizing JavaScript and MySQL, contributing to the company's enterprise digitalization.

Skills

Full Stack Programming: Python (Flask framework for Backend Dev and a little PyTorch), Node.js (Vue framework for Frontend Dev) and MatLab (for Machine Learning and Signal Processing)

Computer Skills: Docker Deployment, Unity, Simulation Software, Statistic and Optimization, FlexSim(for logistics), LaTeX (I used it to edit this CV) and SPSS.

Hands-on ability and musical talent: Mechanical modeling, 3D printing and Hardware making. Proficient in guitar, bass, piano, and other musical instruments.