

Zirui Zhang

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EDUCATION

Columbia University

New York, US

- Master of Science in Electrical Engineering, GPA 3.8/4.0
- RA and TA in Internet Economic, Engineering and Society, TA in Random Signal and Noises, Signal and Processing

2019.09-2021.05

Zhejiang University

Zhejiang, CN

- Bachelor of Science in Automation, GPA 3.8/4.0

2015.09-2019.06

Relevant courses: Probability and Mathematical Statistics, Complex Variable Functions & Integral Transformation, Ordinary Differential Equations, Calculus, Linear Algebra, Big Data Analytics and Application, Statistical Learning, Internet Economic, Engineering and Society

PROJECTS

Optimal Production Strategies for Adoption of Automation

New York, US

At Columbia University Advisor: Prof. Debasis Mitra

2020.05-2020.07

- Built up an production model of adoption of automation derived from Cobb-Douglas production function to quantify the process of replacing labor with machines
- Discussed the profit under different production strategies considering the factors including decision periods, the distribution of demands, the fixed cost, the maintenance fee of machine. Simulated the situations and concluded the optimal solution.

Analysis of Social Network Applications Based on Rohlfs's Model

New York, US

At Columbia University Advisor: Prof. Debasis Mitra

2019.10-2019.11

- Added the cost function into Rohlfs' Model and altered the distribution of willingness to pay. Explored the new equilibrium points in the Model.
- Explained the phenomenon of why Internet companies always account for large market shares and discussed the advertisement strategy and budget allocation strategy based on the new variant model.

Simulation of Inventory Scheduling System

Hangzhou, CN

At Zhejiang University Advisor: Prof. Weimin Wu

2019.02-2019.04

- Constructed an inventory system with goods, shelves, conveyor belts, robot arms, consumers in software Flexsim.
- Simulated the cargo identification, grabbing, and sorting process of robot arms by inverse kinematics and control algorithm.
- Analyzed the throughput of the system under different storage costs, order prices, sorting speeds, and scheduling strategies.

Adoption of machine learning to differentiate microvessels

Perth, AUS

At the University of Western Australia Advisor: Prof. Peijun Gong

2018.07-2018.08

- Built up the systematic platform of PS-OCT and Adopted Otsu method in Matlab to do the binarization and detect the blood vessels density on the image from PS-OCT.
- Developed the algorithm Mask-RCNN to differentiate lymphatic vessels and blood vessels.

WORK EXPERIENCE

Bytedance

Shanghai, CN

Lark Contract, Software engineer

2021.08-present

- Developed the electronic signature module. Integrated the DocuSign to enable customers to sign the contract anywhere.
- Built a file edit service, magic editor which supports file convert, edit and export. Connected the magic editor to the Bytedance software ecosystem, linking the words in the editor to Lark, Lark docs and other products.
- Utilized Java, SpringBoot, MySQL, Redis, Elasticsearch to build up backend system. Adopted multi-threading, asynchronous operation, cache and other methods to improve system performance by 64% on average. Designed the error information convey tool by RocketMQ which reduces oncall rate by 77%.

PATENT(on submitting)

An intelligent recommendation oncall warning platform based on error log

- Analyzed the error logs with algorithm and recommended the potential problems to technical supports.

An integrated log debugging browser plug-in tool

- Connected the web page, server, and compile app. The developer can test and view the log in the same web page and get to the code in compile software by clicking on the log.

A pluggable and centrally managed code content inspection tool

- Unified configuration and injection of check logic for easy code management.

SKILL

- Languages: Chinese Native, English Fluent (TOEFL 102, GRE 332)
- Computer languages: Proficient in Python, Java and Matlab