Xiaobing "Icy" Shen

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Professional Objective

Enthusiastic recent graduate with a Ph.D. (4.0 GPA) in Industrial and Systems Engineering looking for a summer internship in 2023 in the area of Data Science, Operations Research or Software Engineer. Experienced in natural language processing, data analysis (machine learning), optimization, and algorithms for several interns. Having a bachelor's degree in Information Management and Information Systems. Skilled in Python, C and SQL.

Education

University of Minnesota, Twin Cities **Sep. 2019 – Jun. 2024 (Expected)**
Doctor of Philosophy, Industrial and Systems Engineering **GPA:** 4.0/4.0

- **Research Interests**: Pricing and Revenue Management, Service Operation, Supply Chain Management, Innovative Business Models (Sharing Economy and On-Demand Services)
- **Methodology**: Stochastic Modeling and Optimization, Online Learning Algorithms, Queueing Theory

University of Minnesota, Twin Cities **Sep. 2019 – Jun. 2022**
Master of Science, Industrial and Systems Engineering **GPA:** 4.0/4.0

Shanghai University of Finance and Economics **Sep. 2014 – Jun. 2018**
Bachelor of Management, Information Management and Information Systems **GPA:** 3.72/4.0 (Top 4%)

Academic Paper

- Benjaafar, Saif and **Shen, Xiaobing**. (2022) "Pricing in On-Demand (and One-Way) Vehicle Sharing Networks". Under Minor Revision at Operations Research
- Benjaafar, Saif, and Gao, Xiangyu, and **Shen, Xiaobing**, and Zhang, Huanan . (2022) "Online Learning for Pricing with On-Demand Vehicle Sharing Networks". Work In Progress

Related Experience

HourCar **Jun. 2022 – Aug. 2022**
Data Analyst Intern Minneapolis, MN, United States

- Structured the data into multiple tables in the PostgreSQL database and supported analytic functions for other team members.
- Collected trip, station, and customer data, and analyzed the data before and after introduction of the electric vehicles.
- Leveraged data to understand the differences in customer behavior when they use fuel and electric vehicles, and made recommendations for improving the customer experience of using different kinds of vehicles and stations.
- Developed a pricing model based on theory I developed in an academic paper and proposed some parameter estimation methods based on historical data.

Cardinal Operations **Sep. 2018 – Jul. 2019**
Optimization Engineer Intern Shanghai, China

- Implemented the Mixed-Integer Programming model for the production planning and scheduling problem, and generated large-scale data to test the efficiency of the model.
- Analyzed the flight scheduling problem, proposed the column generation algorithm to effectively solve the problem, and implemented the algorithm using Python, C, and Cython.

LUFAX.com **Jun. 2018 – Jul. 2018**
Data Science Intern Shanghai, China

- Built a mixed model of some Machine Learning classifiers like SVM and Random Forest for the potential client selection problem.
- Proposed 230,000 prospective clients from a universal client pool (1.02 million clients) by leveraging their behavioral data points in the past three months.
- 78% of the recommended clients bought equity-linked funds from Aug. 13 to Sep. 1.

SHUFE LEAVES Solver Project **Sep. 2017 – Jan. 2018**
Optimization Analyst Shanghai, China

- Implemented some popular preconditioner methods (MIQR, LSQR, LSMR, Diagonal Preconditioning, and RIF) to solve the normal equation problem and collected their performances
- Computed all statistics and image features of the matrices from UFL Collection (2648 problems).
- Built a mixed model of Convolutional Neural Network and Random Forest to predict the best preconditioner based on matrices' image and statistical information.

Sinolink Securities Co. **Jun. 2017 – Jul. 2017**
Trading Data Analyst Intern Shanghai, China

- Conducted macro research on applications of machine learning and deep learning in global stock selection, and presented some effective models before portfolio manager and senior analysts.
- Used time series tools like Moving Average and Seasonal-ARIMA to analyze the features (like seasonal and evolutionary trends) of historical trading data.
- Proposed a stock selection model by using Adaboost to integrate weaker classifiers, and used Deep Learning model like LSTM to explore the performance of deep learning methods in predicting stock price direction.

JD.com **Apr. 2016 – Jun. 2016**
Warehouse Optimization Engineer Shanghai, China

- Analyzed the matching problem among vans, shelves, and workstations, and divided the original relaxed MIP problem into two equivalent sub-problems under the direction of my advisors.
- Solved the sub-problems using CPLEX, and implemented the Hungarian Algorithm using C to improve the efficiency of the Mixed-Integer Programming for the matching problem.
- Showed the Hungarian Algorithm is about 1.6 times faster than using CPLEX.

Technical Skills

Languages: Python, C, Matlab, R, SQL
Developer Tools: Pycharm, Visual Studio
Technologies/Frameworks: Linux, GitHub

Teaching Experience

Simulation | Teaching Assistant **Sep. 2022 - Dec. 2022**
Quality Engineering and Reliability | Teaching Assistant **Jan. 2022 - May. 2022**
Simulation | Teaching Assistant **Sep. 2021 - Dec. 2021**
Production and Inventory Control | Teaching Assistant **Jan. 2021 - May. 2021**
Optimization | Teaching Assistant **Sep. 2020 - Dec. 2020**
Analytics for Personalized Medicine | Teaching Assistant **Jan. 2020 - May. 2020**
Optimization | Teaching Assistant **Sep. 2019 - Dec. 2019**

Selected Presentations

Pricing in On-Demand (and One-Way) Vehicle Sharing Networks | INFORMS Annual Meeting **Oct. 2022**
Pricing in On-Demand (and One-Way) Vehicle Sharing Networks | INFORMS Revenue Management and Pricing **Jun. 2022**
Pricing in On-Demand (and One-Way) Vehicle Sharing Networks | INFORMS Optimization Society **Mar. 2022**