

Yuyang Ma

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RESEARCH INTEREST

Optimization under uncertainty, data-driven optimization, drone-based delivery system, healthcare operations research.

EDUCATION

Lehigh University

Ph.D. Student in Industrial and Systems Engineering

Advisor: Dr. Karmel S. Shehadeh

Bethlehem, United States

August 2023 – Present

Georgia Institute of Technology

Master of Science in Operations Research

Atlanta, United States

August 2021 – December 2022

University of Pittsburgh

Bachelor of Science in Industrial Engineering (Minor: Economics)

Pittsburgh, United States

August 2020 – May 2021

Sichuan University

Bachelor of Engineering in Industrial Engineering

Chengdu, China

September 2017 – May 2020

RESEARCH EXPERIENCE

Research Assistant at Georgia Institute of Technology

Jan 2022 - Feb 2023

“Using Deep Learning Method to Predict Engine Emission”

- **Topic:** Built a Multi-Step Ahead Engine Emission Prediction model based on the data of engine sensor recording.
- **Methodology:** Developed linear time series prediction models such as ARIMA and ARIMA-X to examine if there is any linear relationship between the emission value and values from other sensors.
- **Deep Learning:** Established new prediction models using recurrent neural network such as GRU, LSTM, and Transformer, which delivered higher accuracy and lower variances compared with classical models.

Course Project at Georgia Institute of Technology

Jan 2022 - May 2022

“Organ Transplant Prediction”

- **Topic:** Experimented machine learning methods to determine which patient on the waitlist will accept an organ.
- **Data Processing:** Processed over three million organ transplants records in the United States from the past 20 years, consisting of patient details, donor details, and quality of the organs.
- **Prediction Model:** Applied a random forest model for prediction, which helps OPTN increase the prediction accuracy by 10% compared with the accuracy of the model used by OPTN.

Senior Capstone Project at University of Pittsburgh

Jan 2021 - May 2021

“PNC Bank Productivity Data Analysis”

- **Processing:** Conducted exploratory data analysis on more than 180,000 call log data and employee states records after performing data cleaning on 200M raw data using Python and Excel.
- **Statistical Methodology:** Collaborated with managers to design key performance metrics evaluating the capacity and performed various statistical tests to analyze the variability of occupancy rates among different subgroups/employees.
- **Methodology:** Applied time series models and techniques (exponential smoothing, ARIMA) to forecast the daily number of calls received
- **Impact:** Identified top 5 business types and proposed strategies to reduce the average handle time by 15%.

TEACHING EXPERIENCES

Teaching Assistant

1. Lehigh University

- DSCI II 311: Optimization and Mathematical Foundations for Data Science

Summer 2024

2. Georgia Institute of Technology

- ISYE 8803: High Dimensional Data Analysis

Fall 2022

HONORS AND AWARDS

2018–2019 Comprehensive Second Prize of Sichuan University
Sichuan University, 2019

Chengdu, China

Dean's List – Institute of Industrial Engineering
Sichuan University, 2019

Chengdu, China

SKILLS

Python, SQL, Matlab, R, JAVA, MySQL, Simulation Software Arena