LEJUN ZHOU

Zhejiang University/University of Illinois at Urbana–Champaign Institute, School of Zhejiang University, P.R. China

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EDUCATION

Zhejiang University   Hangzhou, China
Bachelor of Engineering in Civil Engineering   09/2019 – 06/2023

- GPA: 3.94/4.00
- Admitted on basis of performance on the college entrance examination 0.37% (Rank: 1700/450000)
- Selected awards: 2020–2021 Zhejiang University Scholarship
                   2020–2021 Dean's List
- Exchange student at the University of Illinois at Urbana Champaign in the Spring 2022 Semester

University of Illinois at Urbana-Champaign (UIUC)   Urbana, Illinois, USA
Bachelor of Science in Civil Engineering   09/2019 – 06/2023

- Transferred GPA: 3.70/4.00
- Key Courses: CEE 201 System Engineering & Economics
               CEE 310 Transportation Engineering
               CS 357 Numerical Methods
               CEE 416 Traffic Capacity Analysis
               CEE 418 Public Transportation Engineering

PUBLICATIONS

1. **Lejun Zhou**, Anke Ye, Simon Hu. *A Four-Stage Heuristic Algorithm for Solving On-demand Meal Delivery Routing Problem*. Manuscript submitted for publication. *8th International Conference on Models and Technologies for Intelligent Transportation System.* [pdf] [arXiv]
2. **Lejun Zhou**, Lavanya Marla, Varun Gupta, Ankur Mani. *Provably High-Quality Solutions for the Liquid Medical Oxygen Allocation Problem*. Manuscript in preparation. [pdf] [arXiv]
3. Jie Wen, Youbohong Kong, Yan Xiao, Anxu Huang, **Lejun Zhou**. *Acoustic properties of glued laminated bamboo (glubam) and spruce-pine-fir (SPF)*. Manuscript submitted for publication. *Building and Environment*. [pdf] [arXiv]

RESEARCH EXPERIENCE

Zhejiang University (Department of International Campus)   Hangzhou, China
Research Assistant to Professor Simon Hu   September 2022 – Present
Meal Delivery Routing Problem

- The objective of the study is to set up an optimization model that can solve the Meal Delivery Routing Problem (MDRP), which can efficiently group the orders into bundles and then optimize the delivery routes accordingly, so that it can help improve the delivery efficiency and reduce the freshness loss of the meals
- The MDRP is non-deterministic polynomial (NP-hard); to solve this problem, I implemented the rolling-horizon method and put forward a four-stage heuristic algorithm; the optimization model was set up based on the algorithm to deal with this dynamic problem
- Through comparing with an existing algorithm proposed by Professor Reyes at the Georgia Institute of Technology, the system efficiency was assessed; the computational results showed that our algorithm reduces the average click-to-door time by 3.23%
- The resulting paper where I served as the first author has been submitted to the *8th International Conference on Models and Technologies for Intelligent Transportation System*; the full version of the paper will be submitted to *Transportation Research Part B*

UIUC (Department of Industrial & Enterprise Systems Engineering)   Urbana, Illinois, USA
Research Assistant to Professor Lavanya Marla   May 2022 – Present
COVID LMO Logistics

- The purpose of this project is solving the allocation problem of liquid medical oxygen (LMO) in India to reduces the unsatisfied demand; my task is cooperating with Professor Lavanya to set up an optimization model to deal with this dynamic network with Python CPLEX
- The big scale of data brought computational challenges in solving the problem; thus, I proposed a new formulation by combining multi-dimension variables, which can successfully simplify the linear programing model and shorten the solving time from three minutes to 30 seconds
- Now we have successfully set up several versions of the optimization models for different situations in the real world; compared to the manually design allocation strategy, the proposed model successfully reduces the unsatisfied demand of LMO; the project is still ongoing, we have weekly meetings for further development and more academic output

Zhejiang University (Department of International Campus)   Hangzhou, China
Research Assistant to Professor Yan Xiao   July 2020 – November 2021
New Composite Bamboo Material Research Group
- Test the acoustic properties and modulus of compression for composite glued laminated material; in the group, I took on the responsibility of dealing with the acoustic property data and using digital image correlation (DIC) to measure the compressive deformation of the material
- Since the data collected in the acoustic experiments are noisy and sometimes inaccurate measurements; to overcome this difficulty, I performed Kalman filtering with MATLAB to get a reliable estimation from noisy raw data; another challenge was that DIC has a low sampling rate and collects sparse data points; I proposed a hybrid method to combine domain-specific knowledge (physical model) with a data-driven method, which constrains the shape of the fitted curve and greatly reduces the number of parameters that need to be learned.
- The resulting paper has been submitted to the top journal *Building and Environment*. The innovative testing method and the result of the modulus of compression is included in Professor Yan Xiao's textbook

WORK EXPERIENCE

Chemistry 102 Head Teaching Assistant   Hangzhou, China
                                                                              September 2021 – Present
- Assisting Professor Fangwei Shao in teaching undergraduate chemistry courses and providing mentoring to students in my office hour; holding discussion classes for students and lead them to learn chemistry efficiently
- Supervising the work of the other teaching assistants; when they have problems in work, guiding them to improve their teaching quality; weekly work meeting to coordinate the teaching progress of all teaching assistants is also hosted by me, which ensures that students are consistent in their learning and are proficient in what they have already learned
- Tutoring for overseas online students making sure they are on the same schedule as the students on campus and keep them updated on the professor's notices

ADDITIONAL INFORMATION

Computer Skills
- Python, MATLAB. (Especially familiar with using Python CPLEX and MATLAB YALMIP to do dynamic network modeling and optimization)
- Vissim, Revit

Language
- Chinese (Native Speaker)
- English (TOEFL Grade: 103)
- Teochew (Native Speaker)

EXTRACURRICULAR ACTIVITIES

Interests
- Photography (The First Rank of Zhejiang University Popular Artwork Contest in 2019)