

# LEJUN ZHOU

University of California at Berkeley

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## EDUCATION

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### 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

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1. **Lejun Zhou**, Anke Ye, Simon Hu. (2022) *A Four-Stage Heuristic Algorithm for Solving On-demand Meal Delivery Routing Problem*. Manuscript in preparation.
2. **Lejun Zhou**, Lavanya Marla, Varun Gupta, Ankur Mani. (2022) *Provably High-Quality Solutions for the Liquid Medical Oxygen Allocation Problem*. Manuscript in preparation.

## RESEARCH EXPERIENCE

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### 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 on-demand 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 meals
- The MDRP is non-deterministic complete (NP-complete); 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 8<sup>th</sup> *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 reduce the unsatisfied demand; I cooperated with Professor Lavanya Marla 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 programming 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 manual 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)**

Research Assistant to Professor Yan Xiao

Hangzhou, China

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 methods and the result of the modulus of compression are included in Professor Yan Xiao's textbook

**WORK EXPERIENCE**

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**Zhejiang University**

Hangzhou, China

Chemistry 102 Head Teaching Assistant

September 2021 – December 2022

- Assisting Professor Fangwei Shao in teaching undergraduate chemistry courses and providing mentoring to students during my office hour; holding discussion classes for students and leading them to learn chemistry efficiently
- Supervising the work of the other teaching assistants; when they have problems at work, guiding them to improve their teaching quality; weekly work meetings are also hosted by me to coordinate the teaching progress of all teaching assistants, 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 keeping them updated on the professor's notices