

# JASON PHILLIP LU

University of Michigan  
lujason@umich.edu  
972-515-9250

U.S. Citizen  
[www.linkedin.com/in/jasonphlu/](http://www.linkedin.com/in/jasonphlu/)  
<https://jasonphlu.github.io>

---

## EDUCATION

### University of Michigan

*Doctor of Philosophy in Civil Engineering*

*Expected May 2028*

- Advisor: Prof. Neda Masoud
- Specialization in Next Generation Transportation Systems

### Georgia Institute of Technology

*Bachelor of Science in Industrial Engineering*

*Dec. 2022*

- Research Advisor: Prof. Pascal Van Hentenryck
- Minor in Scientific and Engineering Computing

**GPA: 3.93/4.00**

## RESEARCH EXPERIENCE

### Graduate Research Assistant

University of Michigan

Supervisor: Prof. Neda Masoud

[Next Generation Mobility Systems Lab](#)

*Aug. 2023-Present*

- Focusing on methodologies and applications of multimodal transit systems.

### Undergraduate Research Assistant

Georgia Institute of Technology

Supervisor: Prof. Pascal Van Hentenryck

[Socially Aware Mobility Lab](#)

*Feb. 2021-Jul. 2023*

- Extended On-Demand Multimodal Transit Systems (ODMTS) to include dedicated bus lanes and congestion, undertook a case study in the Metropolitan Atlanta area.
- Conducted experimental extensions of a six-month pilot of ODMTS in collaboration with the Metropolitan Atlanta Rapid Transit Authority.

[Artificial Intelligence Institute for Advances in Optimization](#)

*Jan. 2023-Jul. 2023*

- Worked in the supply chain division to optimize fuel delivery for trucks in a project with an industrial partner.

## PUBLICATIONS

### Submitted for Publication

- **Lu, J.**, Trasatti, A., Guan, H., Dalmeijer, K., Van Hentenryck, P. (2023). The Impact of Dedicated Lanes on On-Demand Multimodal Transit Systems, *Submitted to Travel Behaviour and Society*

### Working Papers

- Riley, T., **Lu, J.**, Santanam, T., Kim, M.S., Guan, H., Trasatti, A., Van Hentenryck, P. (2023). Autonomous Vehicles in On-Demand Multimodal Transit Systems: Extensions of a Pilot in Atlanta
- Guan, H., **Lu, J.**, Akhlaghi, V.E., Van Hentenryck, P. (2023). Optimizing Truck Fleet Scheduling for Fuel Deliveries

## PRESENTATIONS

- Akhlaghi, V.E., Guan, H., **Lu, J.**, Van Hentenryck, P. Optimizing Truck Fleet Scheduling for Fuel Deliveries. *2023 INFORMS Annual Meeting*, Phoenix, Arizona, October 15-18, 2023.

## PROJECTS

### Senior Design Capstone Project: Convoy Shipment Process Improvement

*Spring 2022*

Faculty Advisor: Prof. Leon McGinnis

- Mitigated conflicting appointment time errors from Convoy's shipment processes by analyzing shipment data, developing machine learning models, and providing systematic recommendations.

- Saved Convoy over \$1 million annually, 4.3 hours/shipment, and 190000 miles/year.
- Selected as 1 of 3 Senior Design Capstone Finalists out of 28 total senior design teams.

### **Investigating Effects of Ramp Metering on Traffic Flow in Complex Traffic Systems** *Spring 2021*

- Designed a discrete-based simulation in Python to evaluate ramp metering through three different ramp metering strategies: no policy, ALINEA, and a modified ALINEA.
- Concluded that modified ALINEA was the best policy for increasing vehicle velocities on the interstate while avoiding an increasing ramp queue.

### **Machine Learning for Wildfire Susceptibility Mapping** *Spring 2021*

- Collected and cleaned data to predict wildfire levels across the U.S. for the year 2020.
- Implemented unsupervised and supervised machine learning techniques in Python to reduce dimensions of the dataset, then trained models to predict wildfire levels.

### **Minimum Vertex Cover (MVC) Problem** *Fall 2020*

- Designed four different algorithms (branch and bound, approximation, stochastic local search, simulated annealing local search) to solve the MVC problem.
- Tested algorithms coded in Python on datasets from the 10<sup>th</sup> DIMACS challenge and undertook empirical evaluation to assess the effectiveness of each algorithm.

## **INDUSTRY**

### **Industrial Engineering Intern, Yokogawa** *May 2021-Dec. 2021*

- Automated recording and display processes from over 100 engineering data files, eliminating errors in manual reporting and saving 300 hours annually.
- Created an algorithm to generate product numbers, eliminating manual reporting.
- Improved an existing UI to include additional features, digitalizing display and preventing errors.

### **Industrial Engineering Intern, Yokogawa** *May 2020-Jul. 2020*

- Created a UI in VB and SQL that transformed manufacturing line boards to a digital format with live display, moving the company to a paperless model.
- UI saved 1500 hours annually, eliminated fines for insufficient displays, and was selected for Yokogawa's Global Manufacturing Engineering Competition.

## **SERVICE**

### **Instructor, [The Seth Bonder Camp](#)** *Summer 2022, 2023*

- Led four week-long camps for underrepresented minority high school students.
- Organized logistics, guided interactive activities, and managed teaching assistants.
- Taught computer and data science principles through Snap!, a visual programming language.

## **TEACHING**

### **Undergraduate Teaching Assistant, Georgia Institute of Technology**

Simulation Analysis and Design – Instructor: Prof. Seong-Hee Kim *Summer 2022*

Decision and Data Analytics – Instructor: Prof. Jye-Chyi Lu *Spring 2022*

Statistics and Applications – Instructor: Dr. Tuba Ketenci *Spring 2021*

- Advised three semester-project teams by guiding model formulations, monitoring progress, giving recommendations, and reviewing deliverables.
- Taught students R, Simio, ExpertFit, and Python Modules from SciPy.
- Held office hours and graded homework, labs, and midterm/final projects.

## **SKILLS**

**Programming:** Python, C/C++, SQL, R, LaTeX, Java, OPL, MATLAB, HTML/CSS

**Scientific Toolbox:** Numpy, Pandas, Matplotlib, Google Cloud, SciPy, Networkx, Folium, Shapely

**Commercial Solvers:** Gurobi, CPLEX

**Software:** Jupyter Notebook, Overleaf, HTCondor, Visual Studio, Simio, Minitab, Microsoft Office

**Operating Systems:** Linux, Windows, MacOS