Weilong Wang
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Education

- **Krannert School of Management, Purdue University** — West Lafayette, IN
  Ph.D. in Management Information System — *Aug 2018-current*
  M.S. in Economics
- **College of Engineering, Carnegie Mellon University** — Pittsburgh, PA
  M.S. in Advanced Infrastructure System — *Aug 2016-May 2018*
- **Department of Physics, Fudan University** — Shanghai, China
  B.Sc. in Physics, Minor in Accounting — *Aug 2012-June 2016*
- **Department of Physics, Yale University** — New Heaven, CT
  Exchange student in Physics — *Dec 2015-June 2016*

Academic Experience

- **Teaching Assistant** — Purdue University
  MGMT 68300: IT for Innovation and Competitive Advantage — *Jun 2019-Aug 2019*
- **Research Assistant** — Carnegie Mellon University
  Supervisor: Alexandre Jacquillat — *Aug 2016-May 2018*
- **Teaching Assistant** — Carnegie Mellon University
  12704: Probability and Estimation Methods for Engineering Systems (4.7/5.0) — *Aug 2017-Dec 2017*
- **Research Assistant** — Department of Physics, Yale University
  Supervisor: Yongli Zhang — *Jan 2016-May 2016*

Publication

- S. Lu, W Wang, S. Wang, E. Hameen, "Thermal comfort-based personalized models with non-intrusive sensing technique in office buildings", ***Applied Sciences***, 9(9), 1768, 2019.
- S. Lu, W. Wang, C. Lin, E. Hameen, "Data-driven simulation of a thermal comfort-based temperature set-point control with ASHRAE RP884", ***Building and Environment***, 156, 137-146, 2019.

Working Paper

- W. Wang, A. Jacquillat and V. Vaze, "Primary vs. Secondary Mechanisms for Infrastructure Capacity Allocation when Users are Strategic", under review at ***Mathematics of Operations Research***.
- W. Wang, J. Zheng, K. Kannan and F. Ren, "Estimate the Value of Destination Disclosure: a Dynamic Structural Model of Transportation Network", in preparation.
  - Best Paper Award at ***2019 China Summer Workshop on Information Management***

Articles in refereed conference proceedings:

- W. Wang, J. Zheng and K. Kannan, "Estimate the Value of Destination Disclosure: a Dynamic Structural Model of Transportation Network", ***Workshop on Information Systems and Economics***, Munich, Germany, December 2019
- W. Wang, J. Zheng and K. Kannan, "Information Affecting Market Efficiency and Fairness: Estimating a Structural Model for Transportation Network", ***China Summer Workshop on Information Management***, Shenzhen, China, June 2019.

Honors and Awards

- **Winner of 2019 Krannert Doctoral Research Symposium** *2019*
- **Best Paper Award, 13th China Summer Workshop on Information Management** *2019*
- **Mao Yisheng Graduate Fellowship, Carnegie Mellon University** *2018*
- **Carnegie Mellon University Dean's Fellowship** *2017*

Presentations

- W. Wang, A. Jacquillat and V. Vaze, "Strategic Behaviors In Airport Capacity Allocation Mechanisms", ***INFORMS Annual Meeting***, Phoenix, AZ, Nov 2018.
- S. Lu, W. Wang, C. Lin, E. Hameen, "Adaptive and Personalized Thermal Comfort-based HVAC Control in Real Office Environment", ***INFORMS Annual Meeting***, Phoenix, AZ, Nov 2018.
- W. Wang, A. Jacquillat and V. Vaze, "Strategic Behaviors in Non-monetary Mechanisms for Infrastructure Capacity Allocation", ***POMS Hong Kong***, Hong Kong, China, Jan 2018.

Research Experience

- **Estimate the Value of Destination Disclosure in Ridesharing** Purdue University
  With Prof. Jinyang Zheng, Karthik Kannan, Krannert School of Management *Jan 2019-present*
  - **Dynamic Discrete Choice Modelling**: Developed dynamic programming to optimize the individual driver's behaviors under different information disclosure mechanism
  - **Estimation and Evaluation**: Compared two dominant information disclosure mechanism in ridesharing market, namely, the disclosure mechanism, where the driver can see the destination before accepting and the non-disclosure mechanism, where the driver cannot see the destination
- **Strategic Behaviors in Infrastructure Capacity Allocation** Carnegie Mellon Univerity
  With Prof. Alexandre Jacquillat, Heinz College, Tepper School of Business *Jan 2017-present*
  - **Game Theoretical Modelling**: Developed analytical game theoretical mechanism to help centralized system reduce its cost of rescheduling by 75% considering users are strategic.
  - **Optimization**: Built system optimization model mixing stochastic programming, integer programming and dynamic queuing models satisfying capacity constraint; Built user optimization model integer programming and statistical modelling, reduce user's cost by 60%-80%.
- **Personalized HVAC Control with Reinforcement Learning** Carnegie Mellon Univerity
  Final Project for 10-701 Introduction to Machine Learning *Aug 2017-May 2018*
  - **Non-linear Classification**: We implemented SVM with RBF kernel as well as random forest. In order to solve the dual problem, C is chosen as 1 and α is chosen as 0.1; For random forest, the number of trees used in our model is 50 and the maximum depth of the tree is 3; Last but not least, we implemented LSTM followed by three fully-connected layers. The drop out rate is 0.5 and the activation function of the last layer is sigmoid.
  - **Reinforcement Learning-based Controller**: The algorithm we implement is the value iteration algorithm where we save the optimal policy based on the accumulative sum of state values.
- **Pricing in consumer choice considering search cost** Johns Hopkins Carey Business School
  With Prof. Ruxian Wang *Aug 2016-Jan 2017*
  - **Assortment and Planning**: Provided pricing method in assortment and planning for consumer choosing certain products with search cost under multinomial-logit model; showed that the revenue-ordered assortment is not the optimal, missing 25% target revenue in worst case.
  - **Optimal Strategies**: showed that k-quasi attractiveness-ordered assortment is near-optimal for market share maximization problem, missing 4% target revenue.

Professional Experience

- **Norfolk Southern Railway, Information Technology Department** Atlanta, GA
  Operations Research and Information Technology Summer Intern *May 2018-Aug 2018*
  - **Stochastic Optimization**: Developed robust optimization models to generate optimal planning for allocate limited service center to yards given different maintenance efficiency and capacity constraints.
  - **Machine Learning**: Constrained based K-means clustering algorithm to classify yards across the US
  - **Data Envelopment Analysis**: DEA for railway operations efficiency frontier analysis in Python.
- **Citi Bank, Marketing Department** Shanghai, China
  Marketing Intern *Aug 2015-Dec 2015*
  - **Analyzing & Data Mining**: Analyzed and monitored the retail business data to provide support for planning and decision; Data mining analysis for retail customer for supporting to the sales, increased sales by 15%.
  - **Optimal Strategies**: Completed marketing strategy analysis based on data analysis, including customers, products, channels, risk to conclude improvement measures.

Programming Skills

- **Languages**: **Python, SQL, Matlab, GAMS, CPLEX, R**