

RESEARCH INTERESTS

Optimization, Supply Chain and Logistics, Real-time Decision Making, Data Modeling, Large Scale Systems

ACADEMIC EXPERIENCE

National University of Singapore, Singapore

August 2018 – Present

Institute of Operations Research and Analytics

- Postdoctoral Research Fellow
- Advisor: Prof. Chung-Piaw Teo and Prof. Mabel C. Chou

National University of Singapore, Singapore

July 2016 – April 2018

Department of Analytics and Operations, NUS Business School

- Visiting Ph.D. student in Operations Research
- Advisor: Prof. Chung-Piaw Teo

Hong Kong Polytechnic University, China

September 2014 – September 2015

Department of Logistics and Maritime Studies

- Research Assistant
- Advisor: Prof. Zhou Xu

EDUCATION

Ph.D., Management Science and Engineering

September 2012 – June 2018

School of Business, Sun Yat-Sen University, Guangzhou, China

- Thesis title: "Supply and Demand Matching under Uncertainty: Big-data-driven Robust Resource Allocation Research"
- Advisor: Prof. Fan Wang

B.S., Intelligent Transportation System

September 2008 – July 2012

School of Engineering, Sun Yat-Sen University, Guangzhou, China

RESEARCH

"Sparse and Efficient Rebalancing Network: Concentrating the Flows in Dynamic Network"

J.J. Huang, C.P. Teo, M.C. Chou, L.F. Li

- Motivated by the Bike Angels Program in New York's Citi Bike system
- Provided a generic approach to design a static sparse re-balancing network off-line and develop a simple deployment algorithm to deploy volunteers in real time (i.e., on-line version) for supporting the redistribution activities in the Boston Hubway Bicycle Sharing System

"Conflict-Robust Resource Assignment for Scheduled Services"

J.J. Huang, F. Wang, Z. Xu

- Motivated by the frequently delayed start time of scheduled events in real-life practice
- Provided a generic data-driven approach to design resource assignment for scheduled events under proposed measurement of conflict. Derived a tractable formulation of the distributionally robust nonconvex problems. Specified asymptotic polynomial (or pseudo-polynomial) time approximation solving scheme, which, under some conditions, can always produce exact optimal solution in polynomial or pseudo-polynomial time

"Data Driven Inventory Modeling for Spare Parts in the MRO industry"

J.J. Huang, S. Bi, C.P. Teo, M.C. Chou,

- Motivated by the practical inventory problem in one leading machinery manufacturing company Komatsu
- Integrated the new forecasting methods into inventory control to aid in business decision making
- Developed inventory control policy for items with intermittent usage in the multi-echelon supply chain

Dynamic Cross-Docking Operations

December 2020

Joint work with IDSC

- Study the air/seaport hub operations, work out a demo system that conducts the container sequencing, dock assignment, forklift routing dynamically for cross-docking operations.

Stand Assignment for Cargo Airport Operations

January 2020

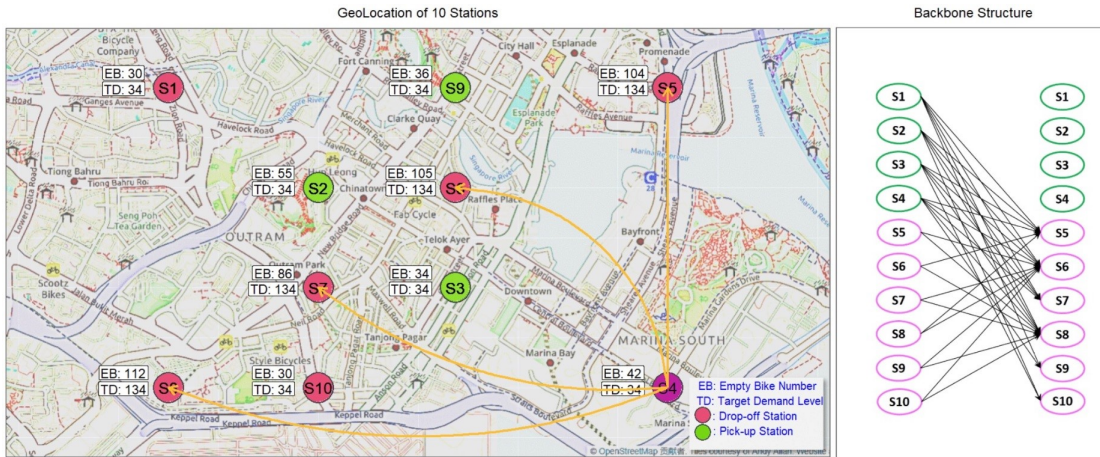
Joint work with SF Express

- Study the cargo airport operations, interact with the simulator, and finally implement an algorithm that can optimize stand assignment, unloading sequence of ULDs, and the cutoff time of flight. A showcase of how OR modeling and data analytics can help the logistic business.

DEVELOPED DEMO SYSTEMS

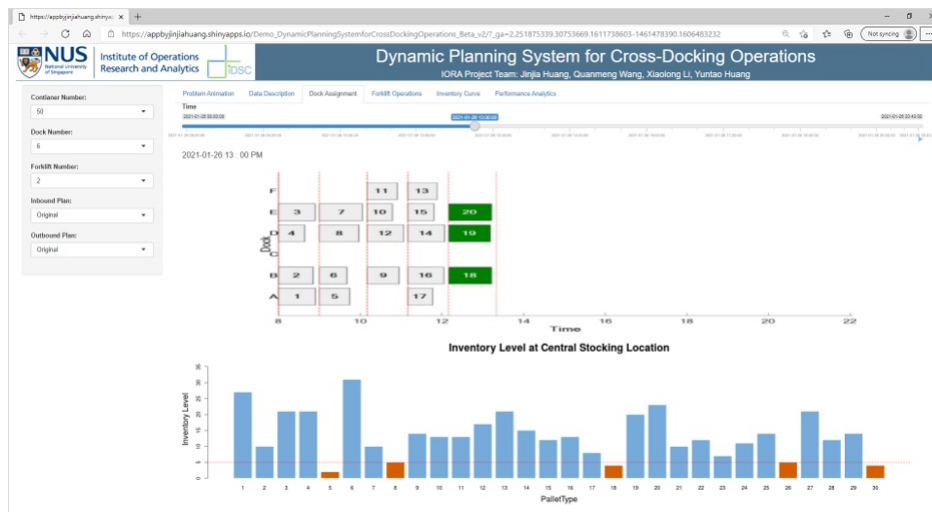
Crow Sourcing Bike Re-balancing System

J.J. Huang, C.P. Teo, M.C. Chou, L.F. Li



Dynamic Planning System for Cross-Docking Operations

J.J. Huang, Q.M. Wang, X.L. Li, Y.T. Huang, C.P. Teo



SKILLS

Languages: English, Mandarin
Programming: Experienced: Java, Python, MATLAB, R
 Familiar with: C++, Mathematica, Julia