Shuai Wang | Curriculum Vitae

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Education

Wright State University **Dayton, Ohio**
Ph.D. in Engineering Program, Industrial and Human System *2011–2017*

Dalian Jiaotong University **Dalian, China**
Bachelor of Management, Logistics Management *2007–2011*

Computer skills

Language: R, Python, Julia

Optimization: AIMMS, Minizinc, JuMP, Cplex, Gurobi, CBC

Machine Learning: Datarobot, H2O, scikit-learn, tree-based boosting

Database: Mysql, MS SQL Server

Visualization: Shiny,Tableau

Experience

Wright State University **Dayton, OH**
Graduate Research and Teaching Assistant *2011–2017*

- **PhD Dissertation: Data mining techniques and mathematical models for the optimal scholarship allocation problem for a state university**
  The research uses classification algorithms to find matriculation and graduation rate by varying scholarships. Then the optimization model was developed to optimize revenue under budget, and fairness constraints. This research has prompted the university wide scholarship redesign, the APS calculator, see http://www.wright.edu/raider-connect/financial-aid/first-year-scholarship. This project has resulted a 11% (2014), 13.9% (2015) increase in direct admit students, which translates into a 5 to 10 million dollars of revenue increase for WSU annually.
- **Teaching Assistant** TA for courses: 1. Introduction of Data Mining and Applications. 2. Introduction of Operations Research Models.

Kroger **Cincinnati,OH**

Operations Research Consultant at Kroger *2012–2017*

- **Promotion Planning Optimization**: A MILP optimization model was jointly developed with A.T.Kearney using AIMMS to build promotion plan and assortment selection to maximize the overall revenue gain. System is implemented in 2014 and saves about 5 percent of the total purchasing cost annually.
- **Forecast and Optimization for clinics**: The problem is to accurately forecast the number of patients by type to each clinic. Sophisticated forecast models that utilize inputs from time, weather, social media data like Google trend queries are used to predict the number of visits.These forecasts serve as input to calculate the inventory necessary for each type of sickness, and the allocation of medical personnel and their shifts. The overall goal is to improve customer service and increase the number of clinics from 136 to 500 in three to five years.
- **High Value Product Local Inventory Transfer**: The problem is to ship medical drugs from stores with excess to stores with needs so as to: 1) reduce potential obsolesces in inventory; 2) better position drugs to meet customer demand; 3) to aggregate the shipment in such that transportation costs are reduced. The model is piloted in 121 stores and is expected to produce $30 to $50 million savings as well as reduction in out-of-stock.

Global Associates **Cincinnati,OH**

Data Science Consultant *2017.9–Present*

- **Order-picking Staff Daily Scheduling System Optimization**: The staff scheduling system is built to optimize the number of staff required to picking orders at each hour. Time-series based forecasting model was used to predict the orders. The project saves about 20 to 30 % labor cost than the previous implementation.
- **Inventory Control**: 1. I build the inventory replenishment routing model based on traveling salesman problem. A novel distance metric was proposed to match the store layout. 2. A comprehensive staff activity graph was created to track the personal's activity, idle time. 3. Heuristic-based restock strategy was created to alert the restock point based on BOH.

Pro Bono

Operations Research / Data Science Consultant

- **NYC Dog Care Stores Weekly Staff Scheduling Optimization**: I helped a dog care store with 4 locations to create a weekly staff scheduling system with various constraints such as: staff schedule preference, locations preference, demand coverage, and cross-skills satisfaction.
- **Cincinnati Public School Bus Routing Optimization**: I wrote the core algorithm using heuristics, Julia with CBC/Gurobi solver. The result is comparable to the MIT's solution for Boston public school system.