Yingying Sun

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EDUCATION

The University of Hong Kong   **08/2021-07/2022**
- Master's Degree of Business Analytics; oriented in Data Science   GPA: 3.82
- Master of Science in Business Analytics Scholarship (Merit-based Scholarship)

Wuhan University   **08/2017-06/2021**
- Bachelor's Degree of Science in Logistics Management   GPA: 3.64 (top 30%)

Exchange Program   **07/2019-08/2019**
- University of British Columbia   *Business Analytics; Operations and Supply Chain Strategy*
- Scholarship for Wuhan University Undergraduate students Overseas Exchange (2019)

RESEARCH EXPERIENCE

***Research Assistant*, Faculty of Business and Economics, HKU** *Supervisor: Ms. Huiyin Ouyang*   **02/2022-05/2022**
- Modeled emergency service routing and capacity allocation with limited vehicle, hard time windows and multiple round trips, in order to minimize the total waiting time costs and unsaved demands;
- Compared the separated routing schemes and the integrated routing schemes, to find out the influence of the combination of vehicles on the delivery efficiency;
- Designed Genetic Algorithm with cross-over and mutation strategies after splitting the demands and encoding the vehicle's trajectory.

PROJECT EXPERIENCE / COMPETITION

Optimization Model: Systematic Methods of Logistics Optimization for YOHO *Supervisor: Baniel Cheung*   **06/2022**
- Design an efficient logistics distribution system from monthly integrated perspective with uploaded pricing contracts and daily orders give recommendations on according to features of each logistics order;
- 2-stage framework was proposed to build the system, which firstly classified the distribution and secondly transferred orders among all 3PLs heuristically, given capacity constraints of each party
- Based on past sales and logistics data, our recommendation system not only helped YOHO to improve process automation, but also helped to reduce logistics costs by about 4%.

Deep Learning: Face Detection with User Interaction and Local Style Transfer   *Supervisor: Dan Yang*   **04/2022**
- Adopted Face Detection Data Set and Benchmark (FDDB) dataset, preprocessed image data by transforming ellipse bounding box to rectangle bounding box, converting image channels to RGB mode and padding image to be equal size;
- Trained with Single Shot Detector and achieve multi-face detection within one picture, designed a Graphical Interface for users to extract the target face out for local transforming;
- Project achievement: 1. Users can choose one target out of multiple faces for follow-up editing; 2. Users can change the style of one or multiple faces in the picture; 3. Users can apply any makeup by importing the reference image.

Machine Learning: House Price Estimation (Kaggle Competition)   *Supervisor: Zhepeng (Lionel) Li*   **02/2022**
- Used Pyspark on Databricks to clean data and establish various machine learning models, such as Lasso Regression, Xgboost model to estimate house price;
- Defined benchmark model with Comparative Market Analysis, combined with KNN by a balancing coefficient to simulate the variations of pricing bias in traditional real estate industry;
- Achieved accuracy of over 85% with Xgboost, ranking top 15% in Kaggle.

Mechanism Design: A study on OBM's procurement outsourcing strategy under information asymmetry and product substitutability with a game of reverse selection   **04/2021**
- Studied the OBM's procurement strategies when outsourcing to a competitive supplier (CM) under cost information asymmetry in a three-tier supply chain;
- Model the problem as a game of reverse selection and redesigned the contract setting for OBM, finding the condition

for an economically efficient contract, which both parties satisfy the incentive compatibility and individual rationality constraint and reach equilibrium in the quantity game.
- This paper also discusses how the information asymmetry will affect the procurement strategies of OBM when OBM implements different outsourcing strategies.

Operation Management: The 5th National College Logistics Simulation Design Competition   11/2019
- Made optimization strategy by logistics simulation on a cloud platform, involved in determining the commodity similarity to arrange for the storage region of goods, using ABC classification for commodity orders and determining the procurement strategy for each type of commodity according to the order frequency;
- Constructed the robot picking route optimization model by balancing the total operation costs and fair assignment of tasks for each robot, with the constraint of robot power consumption;
- Won 1st Prize of Provincial Trails in the Competition.

INTERNSHIP EXPERIENCE

Data Engineer, **AI module of Procurement Data Management Department, Huawei Corporation   07/2022-12/2022**
- Participated in the design of production scheduling tools, optimizing the suppliers' capacity adjustment with daily production quantities, assisting in supplier risk control and demand plan evaluation;
- Used a production flow network to capture each item group's flow across sections, and constructed three large-scale mixed integer programming models in hierarchy;
- Designed an object-oriented code structure and created a register which enables dynamic modeling;
- Explored an algorithmic combination of Lagrangian Decomposition and column generation to accelerate the solution, which relaxes the flow-balance constraint to the target and disintegrates the parallel capacity for each item group.

Project Management Intern of Xiaoai Classmate, **AI Department**, **Xiaomi Corporation   01/2021-03/2021**
- Responsible for the project of Xiao Ai smart watch version update, divided the repair work by product function, and designed Gantt chart to control and visualize the project cycle in determination of important handover time points;
- Regularly sorted the bugs in processing by product functions and visualized the bug processing speed with box plot, in order to find out the work that affect the overall project process.

Online Biding Procurement Assistant, **Kraftheinz (China) Investment Ltd.   06/2020-09/2020**
- Responsible for risk controlling and bidding price monitoring to analyze and alleviate the information asymmetry of suppliers for the first party
- Filtered the suitable candidates from the massive raw data in terms of their past business with the company;
- Retrieved historical prices of similar projects to construct reasonable ranges of the bidding prices and wrote a VBA program to automatically filter excessive or low prices;
- Participated in supplier evaluation from multiple dimensions to form a comparison chart of candidate supplier qualifications, and to score them with weights, preparing for future cooperations

Part-time Assistant for Sourcing Manager, **Johnson & Johnson (China) Investment Ltd.   12/2020-02/2020**
- Classification: used VBA to classify products into different purchase category by filtering out and extracting the key words in the product description or identifying similar features in product clusters;
- Forecasting: used exponential smoothing model as benchmark model to forecast the price of raw materials based on ten years' data and visualize the pricing trend of the product.

PROFESSIONAL SKILLS (full score of 5)
- **Data Analytics:** R (4.5), Tableau (3.5), Python(numpy, pandas, matplotlib, BeautifulSoup) (4.5), C++ (3)
- **Database Design:** SQL (4.5), MongoDB (3)
- **Machine Learning:** Pytorch (3), d2l (3), Azure Databricks (Pyspark) (3.5), R (4.5)
- **Office Automation:** VBA (4), MS Office (5)