Jianyang Zhou

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EDUCATION

Duke University **08/2023 - 05/2025**

- M.S in Electrical and Computer Engineering

Cornell University **08/2020 - 12/2022**

- B.S in Operations Research Information Engineering
- GPA: 3.53/4.00

RESEARCH & WORKING EXPERIENCE

Operations Research Intern | Norfolk Southern | Atlanta, GA **01/2023 - 05/2023**

- Extracted and cleaned data of cargo shipment in IBM DB2 database, built automated report scripts of cargo volume's trend for 50 terminal yards by Python, SQL, and Spotfire
- Compared predicted cargo flow with actual, improving the predicting model by adding holiday effects
- Analyzed the cargo arrival time from customers on hourly basis, considered multiple factors' impact, including origin, destination, shipment type, etc., and used the random forest to classify the time pattern

Undergraduate Research Assistant | Cornell University | Ithaca, NY **08/2022 - 12/2022**

- Cooperated with General Motors, and analyzed different techniques for causal inference and their implications in research settings. Focus on the effects of online advertising on automobile sales

Undergraduate Research Assistant | Cornell University | Ithaca, NY **06/2022 - 08/2022**

- Using reinforcement learning to find the optimal solution of the treatment schedule for HIV patients
- Improved the Q-learning algorithm for the model, and increased cure rate by 20% after simulation

Data Scientist Intern | Kingsoft Cloud | Beijing, China **05/2021 - 08/2021**

- Evaluated SaaS platform user portrait by K-means clustering model and PCA to classify 500k users into 4 tiers with different objectives and backgrounds, visualized the data by Tableau in 20 different views
- Implemented ETL for 10000 business competitor's bid-winning projects, analyzed data in multiple dimensions by k-means, SVM, and random forest in Python with Pandas, Sklearn, Matplotlib packages

PROJECTS

Domestic Flight Delays and Cancellations Analysis **01/2022 - 05/2022**

- Built models in Python to investigate a dataset of 5,000,000 flight delays and cancellations in the U.S
- Predicted future airplane delays with A/B testing, exponential smoothing, seasonality, and other machine learning techniques, successfully predicted the delay time in the next year with 90% accuracy in 3 minutes
- Published advice for passengers regarding choosing flight through intuitive visualization by SQL and Tableau, and demonstrated the correlation between airplane delays and factors such as weather, time, etc

NY State Helicopter Emergency Transportation System **09/2021 - 12/2021**

- Led a five-student team to model and implement a New York State helicopter rescue system
- Analyzed historical data, and performed thinning method simulation to generate random data
- Developed an algorithm using a heuristic method to compute the optimal location arrangement for 5 to 12 helicopters. Optimized the average response time to 0.42 hours, and the available rate at 79.5%

COVID-19 Prediction from Symptoms **03/2021 - 05/2021**

- Performed statistical analysis model to forecast the probability of positive cases by given symptoms
- Implemented logistics regression and K-Nearest neighbors and decision trees to achieve an accuracy of around 80% and an FNR of around 95% after hyperparameter tuning using K-Fold cross-validation
- Identified 3 highly important features and made 5 data-driven recommendations to help local government better control COVID cases based on feature importance analysis

SKILLS

Programming Languages: Python, Java, C, C++, R, HTML, CSS, JavaScript
Tools: Gurobi, SQL, Unix, Git, Tableau, Eclipse, XCode, Visual Studio Code, LaTeX, DB2, Teradata