AKHILESH SONI

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CAREER SUMMARY

Operations Research Enthusiast with 2+ years of experience; possessing an extensive skill-set in Mathematical Optimization(LP, MIP and NLP), Stochastic Modeling, and Machine Learning algorithms.

EDUCATION

University of Wisconsin Madison *September 2018 - May 2023*
Ph.D. in Industrial Engineering(Operations Research) GPA: 3.7/4
Indian Institute of Technology (IIT) Dhanbad, India *July 2013 - May 2017*
Bachelor of Technology in Mechanical Engineering GPA: 9.32/10

WORK EXPERIENCE

University of Wisconsin Madison September 2018-Present
Research Assistant

- Studying crew scheduling in an unconventional oil field development for optimal production of shale gas.
- Developing a Mixed Integer Linear Programming(MILP) formulation model which is scalable, robust to uncertainty, and yields the crew schedules over the entire planning horizon.
- Improving the computational efficiency of the optimization model by using cutting planes and extended formulation techniques. Using a rolling horizon simulation framework to accommodate uncertainty in the operations duration.

Schneider National June 2019-August 2019
Summer Intern, Data Scientist

- Developed a cost forecasting model to predict carrier truckload freight rates in spot market across all lanes in USA.
- Worked with various clustering techniques, time-series models(Prophet, ARIMA) and Machine Learning models (Linear Regression, Gradient Boosting, Random Forest). Enhanced the accuracy of existing model by 15%.

FLSmidth, India July 2017-March 2018
Graduate Engineering Trainee

- Developed a statistical model to optimize safety stock level and understand the financial impact of sensitivities in customer service levels and inventory levels with the objective of minimizing value invested in inventory.

ACADEMIC PROJECTS

Flood Risk and Rescue Routing Optimization
Built a game theoretical optimization model between government and residents for pre & post disaster relocation using Julia environment. Objective was to minimize the loss of life and wealth for a city facing potential flooding .

Opex Analytics Case Study on Facility Planning, Supply Chain
Reduced supply chain cost and lead time for a fabric manufacturing firm by relocation of warehouse. Used ARIMA model for demand forecasting and Perioidc Inventory model for inventory planning. Proposed savings of 10 percent.

TECHNICAL STRENGTHS

Mathematical Programming, Data Mining, Optimization, Machine Learning,Transportation Modeling, Simulation, Data Visualization, SQL, Python, Matlab, Gurobi, Sklearn

COURSEWORK

Introduction to Optimization, Linear Programming, Integer Programming, Non Linear Programming, Real Analysis, Stochastic Modeling, Simulation Modeling, Stochastic Programming, Engineering Models for Supply Chain

ACADEMIC ACHIEVEMENTS

- Mitacs Fellowship-2016: Awarded with Mitacs Globalink Fellowship to work at University of Windsor, Canada
- Among top 0.01% students in India to clear IIT-JEE exam in 2013