ADEL SAKKIR

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PROFILE

Experienced in building analytical and optimization solutions for a startup in Dubai to generate over **£0.5 million** in annual cost savings. Feel free to review my projects on operations research, machine learning and simulations on my **github profile**

EDUCATION

London School of Economics and Political Science, 2023 – 2024
MSc. Operations Research and Analytics (Department of Mathematics)
Modules: Mathematical & Combinatorial Optimisation, Algorithms, Reinforcement Learning, Modelling and Simulation
Dissertation: Development and Implementation of Dreyfus-Wagner algorithm and iterative local search for Steiner Trees

Indian Institute of Technology (IIT), Roorkee, 2022 – 2023 | Online
Post Graduate Certificate in Strategic Supply Chain with AI
Modules: Mathematical Modelling, Machine Learning, Data Visualisation, MILP Solvers, Supply Chain Management

Indian Institute of Technology (IIT), Kharagpur, 2018 – 2022
BTech (Honours) Industrial Engineering (GPA: 8.26/10.0)
Micro Specialisation: Entrepreneurship and Innovation (GPA: 10.0/10.0)
Modules: Probability and Statistics, Optimization and Heuristic Methods, Operations Research, Linear Algebra

PROFESSIONAL EXPERIENCE

Business Analyst (Instock), *noon.com* 09/2022 – 08/2023 | Dubai, UAE
15 member team growing "noon in minutes" (quick commerce startup) from 5 to 50+ stores across the UAE (10000+ SKUs)
- Developed a **stochastic inventory model** for perishables to achieve an annual cost saving of **1.5 million AED (£320k)** to maximize product availability and minimize disposals (**Fast Moving SKUs - Normal, Slow SKUs- Poisson**)
- Deployed a **multiple linear regression** model replenish "fruits and vegetables" category based on price, seasonality, sales history resulting in an annual cost saving of **1.2 million AED (£260k)**
- Optimized the stock transfer algorithm between warehouse and stores to improve monthly product availability by 20%
- Built **5+ KPI dashboards** to generate reports on fill rate, inventory, disposals with DataStudio and BigQuery
- Automated the shipment booking process using Selenium saving **70+ man hours** per week

Supply Chain Analyst Intern, *Covvalent* 05/2022 – 07/2022 | Delaware (Remote), USA
Early stage startup building B2B procurement solution for the global specialty chemicals market
- **Scraped export/import data** of 100+ suppliers from South Asia to catelogue **1500+ products** and specifications
- Generated an annual demand of **$0.5 Million (£400k)** from paint manufacturers in the US to export chemicals
- Conducted **15+ stakeholder interviews** to identify trends in purchasing, delivery and quality

PROJECTS

Parallel machine scheduling - MILP & Genetic Algorithms, 09/2023
Flexciton, London
- Developed a **MILP and a genetic algorithm** formulation to optimise a semiconductor manufacturing schedule
- Achieved an **improvement of 17%** in cycle time (10 machines and 100 orders) compared to present solution

Travelling Salesman and Knapsack Solver (Personal Project), 08/2023
Discrete Optimisation, Prof. Pascal Van H., Georgia Institute of Technology
- Solving knapsack and tsp problems of varying sizes (upto **10,000 items(knapsack), 500 cities (tsp)**)
- Knapsack - Implemented **branch and bound techniques (bfs/dfs), dynamic programming** and other greedy approches
- TSP - Implemented **MILP, 2 OPT, 3 OPT**, and randomised local search techniques to minimise tour length
- Generated a comprehensive **report on run time and storage requirements** with respect to input size

Supplier Risk Prediction, Classification, *Prof. G. Dixit, IIT Roorkee* 07/2023
- Trained classification models based on 1000 suppliers and 20+ feature variables to predict supplier default risk - Logistic Regression, ADA Boost, XG Boost, Decision Tree, Random Forest
- Selected best performing model based on **ROC curves, Accuracy, Sensitivity, Specificity, F1 Score, AUC**
- Incorporated predicted probability into an IP optimisation model to minimise cost of procurement

Other Projects
Stochastic Inventory Modelling (Perishable Goods), Discrete Event Simulation(Queues), Sudoku

TECHNICAL SKILLS AND CERTIFICATIONS

- **Languages and Software:** Python, SQL, R, MATLAB, Google AppScripts, AMPL, Excel
- **Libraries:** Sklearn, Numpy, Pandas, Scipy, Selenium, BeautifulSoup, ortools, Matplotlib, PuLP, pyomo
- **Mathematics for Machine Learning Specialisation: 3 Course**, Imperial College London
- **Advanced Statistics** for Data Science Specialisation: **2 Course**, John Hopkins University