

# Vijay N Sharma

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## EDUCATION

### IIT Bombay

M.Tech, Industrial Engg. & Operations Research

Mumbai, India

Aug 2018 - Jun 2020

### Mumbai University

B.E., Mechanical Engineering

Mumbai, India

Aug 2012 - Jun 2016

## TECHNICAL SKILLS

**Programming Languages:** Python, Java, C++, R, VBA, SQL

**Libraries:** Pandas, PySpark, NumPy, PuLP, Ortools, Sklearn, Plotly, Django, Flask, Gradio, SimPy, FastAPI

**Tools & Softwares:** Power BI, AnyLogic, MS Office, Git, Docker, AMPL, CPLEX

**Key Courses:** Integer Programming, Optimization Methods, Machine Learning

## WORK EXPERIENCE

### Jio Platforms Limited, Mumbai, India

Sep 2022 - present

Data Scientist - Operations Research

- **Warehouse Slotting:** Analyzed several warehouse processes, identified bottlenecks, and developed a slotting solution to ease the picking process and scaled the solution methodology for 30+ warehouses with different layout and business constraints; Observed pickers' travel distance reduction by up to 30%.
- **Picker Scheduling:** Developed MILP formulation to determine the optimal number of lines to pick in a day in a warehouse to distribute the picking load across days of a week.
- **Vehicle Routing:** Clustered the customers and developed a vehicle routing solution considering customer time window constraint, special vehicle requirement of customer and availability of special vehicles.
- **DC-Store assignment:** Analyzed the data and developed model to assign store to DC in order to minimize the cost considering different business operational constraints.
- Contributed in developing a centralized tool to solve the problems in retail business.
- Developed an MILP based tool to recommend office team schedule for hybrid work environment.


### DHL Supply Chain, Mumbai, India

Aug 2020 - Sep 2022

Consultant

- **Network Optimization:** Developed an end-to-end Django based web app to perform greenfield and brownfield network analysis and solve network design problem after gathering different business constraints and requirements from different regional teams across the globe.
- **Transport Optimization:** Supported in developing a python based strategic tool, able to handle a large scale data for Freight and Fleet Optimization for North America team using Ant Colony Optimization.
- **Warehouse Pick Optimization:** Developed a python based tool which gives optimal sequence to visit the SKU picking location to minimize the total distance made by pickers.
- **Warehouse Simulation:** Developed a discrete event simulation model in AnyLogic for cluster pick and batch pick operation to visualize the congestion and bottlenecks in the warehouse to propose a better picking strategies.
- Developed Power BI dashboards from warehouse data for solution design team.
- Analyzed shipping data of warehouse and recommended the optimal set of carton to use to reduce shipping cost.

## PUBLICATIONS

- Presented a simulation case study at AnyLogic conference 2021 on "Simulating a Cluster Pick Warehouse" [Link](#) 
- Presented a paper titled, "Warehouse Slotting Optimization Considering SKU Correlation and Congestion in Aisle" at 2023-ORSI & 2023-ICBAI, IISc Bangalore, scheduled during 18-20 December 2023. Paper is considered to be published in International Journal of Operational Research (IJOR) [Link](#)
- Co-authored a paper titled, "A Hybrid GA-PSO Based Hyper Parameter Optimization of a LSTM Network for Demand Forecasting of Retail Products", presented at 2023-ORSI & 2023-ICBAI, IISc Bangalore, scheduled during 18-20 December 2023. Paper is considered to be published in International Journal of Advanced Operations Management (IJAOM) [Link](#)

## EXTRACURRICULAR ACTIVITIES

- **Teaching Assistant for Optimization Method** at IIT Bombay during Aug 2019 - Nov 2020
- **Cultural Secretary** in IEOR dept., IIT Bombay during Aug 2019 - May 2020