

Jessica Claire

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PROFESSIONAL SUMMARY

- An Operations Research Scientist with doctoral degree in operations management from Indian Institute of Technology Madras and 6+ years of industrial experience in research, development and implementing operations research applications.
- Expertise in the area of logistics, supply chain management, production and capacity planning, global order to delivery, marketing sales and service, order generation and material forecasting.
- 6+ years of experience in designing and implementing robust optimization models (linear, integer, mixed-Integer linear programming) for capacity planning, vehicle routing, supply chain network design and order generation.
- Implemented meta-heuristic algorithms such as genetic algorithm and simulated annealing to handle computational complexity.
- Possess knowledge on decomposition techniques such as Dantzig-Wolfe and Benders Decomposition.
- 6+ years of hands-on experience with various machine learning algorithms both supervised and unsupervised.
- 6+ years of experience with optimization solvers and python packages such as Gurobi, CPLEX, Pulp, GLPK and Z3.
- Excellent coding skills in Python, Numpy, Pandas, and machine learning related libraries.
- Effective data visualization skills with tools like Matplotlib, Bokeh, Seaborn , QlikSense and Tableau.
- Built several web applications using streamlit and dash python packages.
- Possess knowledge on data wrangling using Alteryx.
- Ability to write SQL queries to extract and transform data.

SKILLS

- Operations research
- Meta Heuristics: Genetic Algorithm, Simulated Annealing
- Forecasting
- Machine Learning
- Simulation
- Supply chain Management
- Programming Languages: Python, C#
- Optimization Software: CPLEX, Gurobi
- Visualization: Tableau, QlikSense
- Data wrangling: Alteryx
- Query Language: SQL
- Version control: Git

EDUCATION

Indian Institute of Technology Madras
India • 11/2016

- Ph.D.:* Supply Chain Management
- GPA: 9.03/10
 - Recipient of DAAD - New Passage to India fellowship for post-graduate students (Jul’13 - Feb’14).
 - Recipient of Half-Time Research Assistantship (Jul’12 - Nov’16).

Anna University CEG Campus
India • 05/2012

- Bachelor of Engineering:* Industrial Engineering
- GPA: 9.33/10
 - Awarded Best Outgoing Student 2012 in B.E Industrial Engineering.
 - Received Gold Medal for securing University First Rank in B.E Industrial Engineering

WEBSITES, PORTFOLIOS, PROFILES

- <https://in.linkedin.com/in/Jessica-Claire-7a1b6110b>
- <https://github.com/Jessicadeva>
- <https://scholar.google.com/citations?hl=en&user=PZeGyWYAAAAJ> Charlotte, North Carolina

WORK HISTORY

Lumeris - Data Science - Technical Leader
*Oklahoma, PA*India • 04/2022 - 12/2022

- Delivered innovative, high-performing and scalable analytical software solutions meeting business needs.
- Worked closely with cross-functional team involving data scientists, product manager and product owner to translate business needs to technical specifications.
- Acted as technical consultant for multiple teams.
- Developed dash app with Genetic Algorithm for part supply chain to identify near-optimal economic order quantity such that service level is maximized, inventory position and number of shipments are minimized.
- Built streamlit app for survival analysis of automobile service parts.
- Created QlikSense dashboard to track signal when vehicle faces some damages/crash and highlight cost information related part replacement/repair.

Ford Motor Private Limited India - Data Scientist - Product Owner
*City, STATE*India • 08/2020 - 03/2022

- Contributed to company’s key strategic decision making through analytic solutions and products developed, resulting in huge cost savings and better global production planning.
- Proposed heuristic approach for smart inventory management system to reduce computation time of large-scale mixed integer linear programming model from 45 minutes to 2 seconds.
- Designed and implemented robust, scalable optimization model for optimal allocation of semi-conductor chips to different vehicle lines thereby saving \$78 million dollar for four weeks.
- Performed sensitivity analysis to analyze robustness of existing solution and make further purchase and planning decisions.
- Eliminated manual efforts by automating results storage following each optimization algorithm run using python.
- Developed business critical visualization solutions using Qlikview, QlikSense and Tableau.
- Mentored and groomed team members on technical know-hows and operationalized multiple projects.
- Conducted Tech Talk and knowledge share sessions.

Mercedes-Benz Research And Development India - Principal Data Scientist
*City, STATE*India • 11/2016 - 07/2020

- Designed, developed, and supported Operations Research applications to solve complex and business problems for Europe Production Planning team.
- Identified stable buying pattern of customers over time for automobile industry. These identified rules increased part demand prediction by 13.4% compared to existing algorithm.
- Developed software application to automate process of stable rules generation using C#.
- Built predictive models and machine learning algorithms for Attribute Take rates prediction and battery life prediction.
- Implemented plant capacity and demand allocation problem as multi-commodity network flow problem to allocate vehicles to different plants considering real time and dynamic constraints.
- Developed C# application and Tableau reports to track changes in attributes and parts of car scheduled for production to reduce emergency part shipments and identify volatile attributes/ parts.
- Implemented time series models like exponential regression and Auto-regression to predict battery life (time left to complete discharge of battery) of battery car.

ADDITIONAL INFORMATION

- D. Jessica and V. Shalini, " Semi-conductor Chip Planning and Allocation during Supply Chain Disruption Due to Covid Outbreak", Production and Operations Management society 33rd Annual Conference, May 21 - 25, Florida, USA, 2023 (selected for presentation).
- R. S. Tilak and D. Jessica, "Finding consistent customer buying behavior in variant rich automotive industry," 11th ISDSI International Conference, December 28-30, IIM Trichy, India, 2017.
- D. Jessica, C. Rajendran, S. Kalpakam, and H. Ziegler, "The value of information sharing in a serial supply chain with ar (1) demand and non-zero replenishment lead times," European Journal of Operational Research, vol. 255, no. 3, pp. 758-777, 2016.
- Z. Miriam, R. Ramya, D. Jessica, C. Rajendran, and S. Ganesh, "Social media sentiment analysis: Are the existing methods reliable?" International Symposium in Honor of Dr. A. Ravi Ravindran. March 12-13, IISc Bangalore, India, 2015.
- D. Jessica, A. Sundararajan, and C. Rajendran, "Optimization approach to collections risk management," Production and Operations Management society 26th Annual Conference, May 8 - 11, Washington D.C., USA, 2015.