Arun Arunachalam Maheswaran

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EDUCATION	**North Carolina State University,** College of Engineering, Raleigh, NC **August 2021 - May 2023**

North Carolina State University, College of Engineering, Raleigh, NC   **August 2021 - May 2023**
Master of Integrated Manufacturing Systems Engineering | **GPA:** 3.94
Coursework: Big Data Analytics, Experimental Statistics, Operations Research, Automated Systems Engineering

PSG Institute of Technology and Applied Research, Coimbatore, India   **August 2014 - July 2018**
Bachelor of Engineering in Mechanical Engineering

SKILLS

Programming Languages and framework: Python, R, Julia, Shell, C++, SQL, GBQ, Bash, VBA, Pandas, Numpy, Scikit-learn
Big data Technologies: Google Cloud Platform, Microsoft Azure, Apache Spark, Hadoop, Airflow, Docker
Visualization tools and Software: Tableau, Data Studio, Power BI, Air Table, JIRA, Git, SAS JMP, Microsoft Office, Visio
Lean Tools: 5S, Control Plan, FMEA, Problem Solving - DMAIC & PDCA, Statistical Analysis, Statistical Process Control (SPC)

PROFESSIONAL EXPERIENCE

Wayfair - Boston, MA   **July 2022 - December 2022**
Supply Chain Operations Analyst Co-op
- Developed a mathematical model in Python to identify big and bulky products, and automated daily reporting of purchase order (PO) numbers for less-than-truckload (LTL) shipment using GBQ and Google Data Studio
- Conducted a ROI assessment to improve network-wide cube utilization of Middle Mile trucks by 4.6% through procurement of 2ft e-tracks trailers and modular cages, projecting $1.1M net annual savings on transportation costs
- Owned and maintained a dashboard using GBQ and Google Data Studio to track improvement in cube utilization of Middle Mile trucks and monitor their position in the supply chain network for reverse logistics
- Analyzed the impact of PO auto-reschedule use cases on WBR metrics, prioritized new Tech deployment projects, and identified potential transportation and labor cost savings of $1.4M annually and a 9.5% reduction in delivery miss rate
- Conducted ad-hoc data analysis using SQL to identify trends in transportation costs, resulting in a recommendation to shift to a different carrier for certain routes and saving $200k annually
- Collaborated with Tech, Field Operations, Finance, and cross-functional stakeholders for deployment of TMS initiatives

Tata Motors LTD - Pune, India   **August 2019 - June 2021**
Engineering Manager - Manufacturing Quality
- Reduced annual rework cost of $250k on Engine cylinder bore scoring issue by using DMAIC lean six sigma methodology
- Maintained the manufacturing process compliance over 95% for IATF standards by conducting audits and Root Cause Analysis for corrective and preventive actions
- Collaborated with Cross-Functional Team in evaluating and implementing 6 Poka-Yoke and Zero-Defect manufacturing stations and contained 90% of the non-conformities in 3.3L and 5L engine assembly lines
- Developed Tracking and Traceability system using MS Excel for over 4800 parts across 5 plants to facilitate vehicle recall

Tata Motors LTD in association with Boston Consulting Group (BCG) - Bangalore, India   **August 2018 - July 2019**
Graduate Engineer Trainee - Associate
- Developed a predictive model for devising Beat plans for Sales Executives, resulting in a 12% increase in customer visibility
- Improved sales win ratio by 7% by analyzing sales potential drop-off reasons and providing stakeholders with insights
- Created a region-wise metrics dashboard using MS Excel and VBA to track new business initiatives at dealerships

ACADEMIC PROJECTS

Real-Time Data Streaming Architecture for Industrial Automation System, *NCSU*   **January 2022 - May 2022**
- Developed color detection model using Python OpenCV and established conveyor control using MachineMotion API
- Enabled real-time data streaming in MQTT & Modbus TCP/IP Publish-Subscribe protocol using Node-Red for control logics and integration of conveyor, Universal Robot, Epic Groov Smart PLC and local computer
- Built a browser-based interface using Groov View Dashboard to visualize the automation system metrics

Agent-based modeling of Warehouse Order-pick Sequencing, *NCSU*   **January 2022 - May 2022**
- Developed an auction-based communication system utilizing virtual currency to optimize order-pick sequencing for warehouse robots using Julia agents.jl framework

Design of Experiments Optical fiber drawing process, *Experimental Statistics, NCSU*   **October 2021 - December 2021**
- Utilized SAS JMP to design a 2^{k-n} fractional factorial experiment and applied ANOVA and response surface analysis to achieve a 43% reduction in signal attenuation

Time series analysis of retail stores data, *Python for Industrial Applications, NCSU*   **November 2021 - December 2021**
- Developed a data pipeline using Python and Plotly Dash to visualize and forecast retail sales trends, utilizing SARIMAX

AWARDS AND RECOGNITIONS

Top Cost Saving Project (2022); Recognition from Wayfair for performing the analytics work for 2ft e-tracks project
Top Performer Award (2020); Recognition from Tata Motors for driving execution in developing Track and Trace system for ILCV and MCV parts and sub-assemblies

ACTIVITIES

Student Council Chairperson (2017-2018); Society of Automotive Engineers (SAE), India Collegiate Club
ISSERV Volunteer (2021-2023); Involved in volunteering activities in the Raleigh community