PRAHARSHITH KASHYAP JAMALAPURAM

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PROFESSIONAL SUMMARY

Early-career engineer with a strong foundation in Mechanical Engineering and graduate training in Industrial & Systems Engineering, specializing in manufacturing decision support, process capability, and data-driven optimization. Experienced in applying statistical process control, lean methods, and analytics automation to real manufacturing and operations problems. Comfortable working across engineering, operations, and leadership teams, with a growing focus on engineering analytics and responsible AI-assisted decision systems.

EDUCATION

University of Wisconsin-Madison - Madison, WI, USA **August 2024 - December 2025**

Master of Science in Industrial Engineering – Systems Engineering and Analytics GPA: 3.60/4.00

Relevant Courses: Manufacturing Systems, Industrial Data Analytics, Decision Analysis, Quality Control & Reliability

Certifications: AI for Engineering Data Analytics

SASTRA University – Tamil Nadu, India **September 2020 – June 2024**

Bachelor of Technology - Mechanical Engineering GPA: 3.16/4.00

Relevant Courses: Design of Machine Elements, Manufacturing Technology, Materials Science, CAD/CAM, Engineering Drawing

SELECTED PROJECTS more here: Portfolio

Manufacturing Process Capability & Quality Analytics Automation Copilot (Azure Project)

- Developed a Python-based analytics workflow to evaluate process stability and capability (I-MR charts, Cp/Cpk)
- Implemented logic to defer capability conclusions when processes are unstable, reducing risk of misinterpretation
- Reduced manual quality reporting effort by approximately 80% in a case-study manufacturing context
- Standardized quality interpretation outputs for repeatable reporting

ZT2 Assembly Workstation Improvement (Doosan Bobcat):

- Analyzed an assembly workstation to identify non-value-added activities and ergonomic strain
- Applied PDCA, SIPOC, spaghetti diagrams, and TIM WOODS waste analysis to evaluate layout inefficiencies
- Achieved 1–2 unit per shift throughput improvement and 12% cycle time reduction

Predictive Breast Cancer Classification (U.S. Dataset)

- Developed and evaluated ML models including Logistic Regression, KNN, Random Forest, and clustering techniques
- Performed feature scaling, hyperparameter tuning, and model comparison using GridSearchCV

Sustainable Spur Gear Design via Topology Optimization:

- Designed a mechanical spur gear using SolidWorks / Fusion 360 and evaluated structural performance using ANSYS FEA
- Applied topology optimization to reduce component mass while maintaining structural integrity under high-torque loading
- Achieved 20% mass reduction while maintaining a factor of safety of 1.5

4-DoF Pick-and-Place Robotic Arm for Assistive Care:

- Performed forward and inverse kinematic analysis for a 4-degree-of-freedom robotic manipulator
- Contributed to mechanical design and documentation of an assistive robotic prototype

WORK EXPERIENCE

SEIL Energy India Limited **AP, India**

Engineering Student Intern July 2022 – August 2022

- Observed and analyzed operations in a supercritical thermal power plant
- Studied coal handling, water treatment, turbine & generator systems, and resource management
- Gained exposure to large-scale industrial systems and plant operations

UW – Madison Housing **Madison, WI**

Student Shift Lead April 2024 – December 2025

- Led and coordinated a rotating team of ~25 student employees during service hours
- Managed real-time operational issues, staffing decisions, and workflow prioritization
- Developed team leadership, performance management, and cross-functional coordination skills

LEADERSHIP & ACTIVITIES

Indian Graduate Student Association (UW - Madison) **Madison, WI**

Board Member February 2025 –January 2026

- Supported planning and execution of large-scale cultural events with 400+ participants
- Coordinated logistics, vendor communication, and event operations

Operations & Control – DAKSH (SASTRA University) **Thanjavur, IND**

Team Lead July 2023 –July 2024

- Led operational planning and coordination across 20+ teams
- Managed logistics, permissions, crisis handling, and execution for a multi-day inter-college technical fest

TECHNICAL SKILLS

Manufacturing & Industrial Engineering: Lean Manufacturing, SPC, Process Capability (Cp/Cpk), PDCA, SIPOC, Workstation Optimization, Facility & Layout Analysis

Data Analytics & Automation: Python, pandas, scikit-learn, Statistical Analysis, Data Cleaning & Preparation, Visualization, Model Evaluation

Engineering Design & Simulation: SolidWorks, AutoCAD, Fusion 360, ANSYS, COMSOL Multiphysics, FEA, Topology Optimization

Tools & Platforms: Azure, Git, Docker, Linux, Jupyter, Excel, PowerPoint, Technical Documentation