

PRAJJWAL PRADEEP GARAG, MS

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Education

Master of Science in Advanced Manufacturing: Work Design and Sustainability Engineering	Oct 2025
<ul style="list-style-type: none">Technische Universität Chemnitz, Sachsen, DeutschlandRelevant Coursework: Life Cycle Impact and Assessment, Sustainability, Material Process flow, Management Accounting Instrumentation, Joining Technologies, Deep passion in Python Programming and Database Mgmt.	GPA: 1,82
Bachelor of Technology Mechanical Engineering: Materials Science minor	Aug 2021
<ul style="list-style-type: none">Manipal Institute of Technology, Manipal, Karnataka, India.	GPA: 1,92

Skills

CAD/CAE	SolidWorks, Catia V5 & 3DX, Fusion360, Creo, AutoCAD, ANSYS, Siemens NX.
Fabrication/Prototyping	3D printing (FDM/SLA/SLS), CNC Lathe/Mill, GD&T, Laser Cutter, electric circuits design.
Computer Skills	Python, PostgreSQL, Linux, MATLAB/Simulink, Git, Arduino, RaspberryPi, C++, OpenCV, Umberto LCA, MS Office, CSS, HTML, JavaScript, Matplotlib, Pandas, Seaborn, TensorFlow, Keras, Numpy, Flask

Professional Experience

Research Assistant, Fraunhofer IWU, Chemnitz DE	July 2024 – Present
<ul style="list-style-type: none">Developed a two-pronged predictive model for tool life in hard turning operations, achieving 86% accuracy in detecting tool failure during the penultimate cut using Isolation Forests in the frequency domain.100%Designed a time-domain model using moving averages, standard deviation differences, and KNN to predict tool wear progression from cutting forces.100%Collaborated with Prof. Dr.-Ing. Martin Dix on a publication for the CIRP Society, combining signal processing and machine learning to provide a comprehensive solution for tool life prediction.25%	
Student Assistant, iKAT TU Chemnitz, Chemnitz DE	Jan 2025 – Present
<ul style="list-style-type: none">Collaborated on life cycle assessment for hybrid H2 fuel cell drives, integrating environmental and techno-economic factors, 50%.Developed a MATLAB socket script to process and analyze JSON-based Umberto raw data for system modeling, 100%.Documented MBSE process with SysML modeling and test protocols, supporting TRL advancement from 6 to 7.	
Technical Consultant, Vaude GmbH, Baden-Württemberg DE	Dec 2024 - Present
<ul style="list-style-type: none">Working in a team of 5 to optimize manual die placement in manufacturing using projection mapping.Implemented projector-guided die alignment, improving accuracy by 20% and reducing material waste by 15%.25%Integrated real-time feedback with computer vision, shortening setup times by 25% and boosting productivity.25%	
Assistant Manager, JSW Steel LTD, Bellary IN	Aug 2021 - Oct 2023
<ul style="list-style-type: none">Oversaw processing of 450 tons of Galvanized steel coils daily while leading a team of 25 subordinates.100%Collaborated to commission Continuous Galvanizing Lines 2 & 3, optimizing CAPEX/OPEX budgets and automation readiness working alongside the Danieli Group.Reduced rejection rates by 20% and increased OEE by 4.5% through process optimization.100%Trained Graduate Engineer Trainees and established CAPA with statistical tools, ensuring ISO compliance and quality.	

Projects

Smart Posture Monitoring and Feedback System(Python, Micro:bit, Blender)	Nov 2024 – Jan 2025
Mechanical Engineer, Technische Universität Chemnitz	
<ul style="list-style-type: none">Led a team of 5 to develop PostureAware, a system leveraging 6 Micro:bit sensors to monitor ergonomic risks and address chronic back pain in logistics manual load handling.100%Designed a GUI processing 33 Hz sensor data to classify posture into 3 risk zones, enhancing safety.100%Implemented 81 posture scenarios with feedback mechanisms, reducing high-risk occurrences by over 40%. This lead to “Best Project ” award in the course Insurmentation.100%.	
Nischelangelo GmbH – Modelling with Umberto®	Jan 2024 - May 2024
<ul style="list-style-type: none">Evaluated 3 manufacturing processes (CNC Milling, Waterjet Cutting, 3D Printing) for Nischelangelo GmbH’s souvenir busts using Umberto® Software.20%Conducted Life Cycle Impact Assessment (LCA), Material Cost Flow Accounting, Functional Assessment achieving 96% functional efficiency for CNC Milling using Eco-Indicator 99.100%.	
SAS Employee Leave Management System	Jan 2023 - May 2024
<ul style="list-style-type: none">Designed a Employee Leave Management windows app for Seeh Al Sarya Engineering LLC, Oman streamlining workforce scheduling for middle level management increasing productivity and saving time by 20% (reviewed).100%	
Sink-Roll Defect & Failure Analysis	Aug 2023 - Dec 2023
<ul style="list-style-type: none">At JSW steel reduced rejection rates by 20% and improved OEE by 4.5% through sink roll optimization efforts. 100%.	
Life Cycle Analysis of Pressure Cooker Lid	Aug 2023 - Dec 2023
<ul style="list-style-type: none">Compared steel and aluminum for pressure cooker lid, highlighting steel's economic and environmental advantages.50%	

Additional Skills

- IELTS C1 proficiency in English, B1 proficiency in Deutsch.
- Hands on experience with fabrication, test equipment, test and validation processes and data analysis (TU Chemnitz).