Pujith Sai Eswar Allam

www.linkedin.com/in/pujithallam| pujithallam@gmail.com| (480) 942-4991 | Tempe, AZ

SUMMARY

Mechanical engineering graduate with expertise in manufacturing processes, CAD modeling, and industrial safety. Skilled in optimizing production workflows, improving machine utilization, and implementing process improvements using ANSYS, SolidWorks, and MATLAB. Passionate about product design, rapid prototyping, and mechanical innovation, with a proven ability to drive process improvement and enhance efficiency in manufacturing environments.

EDUCATION

Ira Fulton School of Engineering at Arizona State University, Tempe, Arizona GPA:3.50/4.0 **August 2023 - May 2025**
Master of Science in Mechanical Engineering

Sathyabama Institute of Science and Technology, India GPA:8.25/10 **July 2019 - May 2023**
Bachelor of Engineering (B.E), Concentration: Mechanical Engineering

TECHNICAL SKILLS

- **Design and Modeling Tools**: AutoCAD, SolidWorks, Fusion360, CATIA, Tinkercad (Circuit Simulation).
- **Programming Languages:** Basic Python, MATLAB, Arduino.
- **Analysis:** ANSYS (Fluent, Structural, Thermal), Ls Dyna, COMSOL (Multiphysics, Thermal, Structural, CFD).
- **Data Handling and Documentation:** Microsoft Excel, Word, PowerPoint, Outlook, SAP (Manufacturing Operations, BOM Management).
- **Technical Skills:** Lean Manufacturing, Finite element analysis (FEA), Fitting Models, Supervised Learning, Bill of materials (BOM), Computational Fluid Dynamics (CFD), GD&T, Root cause analysis, Semiconductor manufacturing Processes, Applied statistical process control (SPC), Mechanical Design, Project Management, and Mechanical Testing and Validation, Arduino Programming (UNO & Nano), Closed-Loop Control Systems, Mechanical Assembly and Structural Alignment, Tensile and Fatigue Testing, Force calibration.
- **Soft skills:** Project Management, Interpersonal skills, Strong Communication, Problem Solving, Teamwork, Technical Leadership, Task Delegation.

PROJECTS

Advanced Computational Fluid Dynamics (CFD) Simulation and Analysis of Complex Geometries **November 2024**
- Designed and modeled geometries in SolidWorks for CFD simulations in ANSYS Fluent, analyzing thermal convection under Earth and Mars gravity with optimized mesh and transient settings.
- Modeled multiphase flow dynamics of glycerin and mercury blobs, refining velocity and temperature analysis.
- Enhanced lift force oscillation by 41.3% through aerodynamic studies of different cylinder shapes, optimizing design with CFD.

Design and Development of Tensile Testing Machine **May 2025**
- Led the design and mechanical integration of a low-cost tensile testing system using Arduino, load cell, stepper motor, and HX711 amplifier.
- Developed closed-loop control for automated tensile and fatigue testing with real-time force feedback and bidirectional motion.
- Managed project execution across a 5-member team, overseeing procurement, system calibration, and successful demonstration of industrial grade functionality.

Plant and process layout for Production Systems (AMPL, AutoCAD) **November 2023**
- Optimized production scheduling using a binary ordering algorithm, improving machine utilization and reducing labor costs.
- Designed an efficient group cellular layout with a single-pass heuristic, streamlining workflow.
- Increased machine utilization and boosted profits by 12% through strategic facility optimization.

Thermal and Structural Analysis of Additive Manufacturing Processes using ANSYS **April 2024**
- Optimized 3D-printed polymer quality by performing thermal analysis of FDM in ANSYS, refining nozzle temperatures, print speed, and material properties.
- Simulated heat transfer dynamics in LPBF using COMSOL and MATLAB, analyzing melting and solidification processes.
- Enhanced manufacturing efficiency by fine-tuning thermal parameters for improved print quality and material performance.

WORK EXPERIENCE

Engineering Intern
Synergies Casting Limited, Visakhapatnam, (India) **March 2021 – August 2021**
- Analyzed and monitored wheel distortion monitoring in the Foundry department, analyzing causes in casting, gate cutting, and heat treatment.
- Conducted dimensional analysis to ensure compliance with tolerance limits and improve production quality.
- Gained hands-on experience with die casting, NDT (X-ray), and heat treatment for alloy wheel manufacturing.
- Suggested process optimizations to reduce distortion and enhance manufacturing efficiency. Collaborated on data-driven quality improvements, contributing to significant reductions in scrap and rework.
- Collaborated with engineers to identify and implement quality control measures for defect reduction.

CERTIFICATIONS

Certifications: Certified Lean Six Sigma Green Belt | Additive Manufacturing Specialization | The Complete AutoCAD 2018-21 Course |MATLAB Onramp | Semiconductor Fabrication | Supply chain management |Introduction to Geometric Dimensioning and Tolerance | International Automotive Industry 4.0 Training | Virtual Assessment Program on Alternate Fuels | Engineering Project Management | Inter-personal Skills.