

ABHISHEK SHRINIVAS LOGANATHAN

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EDUCATION:

Master of Science in Robotics and Autonomous Systems(Mechanical and Aerospace Engineering)

Arizona State University, Arizona

May 2023

CGPA: 3.57/4.0

Bachelor of Engineering in Mechanical Engineering

Mepco Schlenk Engineering College, Sivakasi, India

April 2020

CGPA: 3.44/4.0

WORK EXPERIENCE:

Mechanical Design Engineer

May 2024 - Present

LSP USA LLC, Niles, OH.

- Worked on the design and fabrication of jigs and fixtures to support the optical parts of the projects in Creo & SolidWorks which are used to measure, detect, analyze the defects on the machines and used for manufacturing EV batteries.
- Performed root cause analysis with respect to customer's problem description, designed models, manufacturing components in the CNC 3-axis milling machine (Haas TM-2P) for the opto-mechanics projects which gained revenue for the company.
- Worked on designing and manufacturing the R & D projects maintaining battery production lines ensuring and minimizing battery defects while reducing production costs for the customer companies such as Ultium Cells, LG Energy Solutions, Peopleworks.
- Led end-to-end development and customer site validation of engineering solutions from concept to prototype, contributing to projected revenue exceeding over \$1M.
- Delivered full-cycle mechanical R&D solutions, personally managing and executing all phases—from concept and design through manufacturing, validation, and mass production—resulting in reliable, production-ready systems tailored to customer needs.
- Documented procedures (SOPs, Design & Analysis reports, technical reviews) and fabrication techniques (BOMs) thereby providing periodic reports, to keep informed about the project progress.

Research Aide

Dec 2021 – Apr 2024

Prognostic Analysis and Reliability Assessment Laboratory, Tempe, AZ

- Developed a part of U.S. DOT Project titled AI-enabled Interactive Threats Detection using a Multi-camera Stereo Vision System. The base and components for movement of the base, for the camera were designed in Solid Works and fabricated in 3D Printing.
- Integrated and interpreted the hardware parts of the robot using Raspberry pi and Arduino and successfully implemented a height adjustment mechanism for the camera to scan different pipeline sizes
- Testing of the integrated prototype was done (movements, scanning frequency & accuracy) in different pipelines to find its compatibility, worked on the electromechanical components (stepper motor, DC motors, linear actuators) of the robot.
- Manipulated the comparison of the failure prediction of transmission pipelines using Finite Element models from ANSYS and standards like ASME B31-g and NG-18 equations.

Production Head Intern Trainee

Aug 2020 – Oct 2020

Sundaram Industries Private Limited, Rubber Factory, Madurai Division, India

- Handled different types of Injection Molding in a highly productive environment, managed projects from initiation to completion ensuring they meet specified objectives on time and within budget constraints.
 - Troubleshooted the injection molding machine which produced defective parts for a prolonged period, worked on the new tooling projects. Learnt development of project scopes based on research, evaluation, design and engineering activities.
 - Learned compiling and analyzing design, test, and research data to establish modified products to avoid wastage of defective products and learnt defect analysis methodologies.
 - As a Production Head Intern trainee, I came up with ideas of preventive maintenance, defect monitoring, analyzed and organized the injection molding machines enhancing growth of the production rate of the goods with reduced wastage.
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ACADEMIC PROJECTS:

Formation Control and Obstacle Avoidance in Second Order Multi-Robot Systems

Dec 2022

- Explored the second-order consensus and path planning for multi-robot systems with different numbers of agents (2, 3, 4 & 5).
- Used Artificial potential field in path planning for avoiding collisions in different multi-agent formations like triangular, square, pentagon to reach their common goal.

Control using Different Inverse Kinematics Methods for Different Trajectories

Dec 2021

- Explored how the accuracy of different inverse kinematic and direct kinematics methods is affected by different shaped trajectories with 4DOF and 5DOF manipulators and designed the trajectory paths.
- Tested the 4 DOF along 3 different trajectories (spiral, bent circle and expanding spiral) using the analytical Jacobian method for solving inverse kinematics.

Design and Fabrication of Automatic Shifting Machine using Linear Geneva Mechanism

Jan – Mar 2018

- The project (mechanical model) was intended to provide a linear geneva mechanism-based assembly line automation that produces intermittent motion at regular intervals.
 - The mechanical components of the machine were designed in AutoCAD, modeled in Solid Works and were fabricated in aluminum using CNC machining, lathe machine, and prototype were also prepared using wood.
 - Developed project management skills through Microsoft Project like design plans, weekly meetings scheduling, design reviews, cost estimations, report generation, performance testing.
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PROFESSIONAL SKILLS:

CAD/CAM software:

SolidWorks, PTC Creo, ANSYS, AutoCAD 2D & 3D, Catia V5, Autodesk Fusion 360.

Operating Systems:

Windows, MacOS, Linux

Fabrication Technologies:

Machining (Turning, Milling, Drilling, Tapping, Boring), CNC Machining/Programming (e.g., G-code, CAM), Grinding / Surface Finishing, Aluminum Anodizing, Sheet Metal Fabrication (Cutting, Bending, Rolling), Welding (MIG, Arc welding)

Others:

Microsoft Office Tools (Word, Excel, PowerPoint, Outlook, Teams, OneDrive, OneNote), MATLAB, Python Programming, Raspberry Pi, Arduino, Ramco ERP system.