

Sri Renganathan Sivakumar

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Education

Vellore Institute of Technology

Aug 2021 - Jul 2025

B.Tech in Mechanical Engineering with Specialization in Manufacturing

CGPA: 8.31

Relevant Coursework: CAD and FEA, Industrial Robotics, Mechatronics, Control Systems, Kinematics and Dynamics, Engineering Optimization, Design of Machine Elements, Design of Jigs and Fixtures

Experience

Dhasi Hydraulics

Jan 2024 – Present

CAD and Simulation Intern

- Learned hydraulic schematic design for various power packs.
- Designed and developed a Rotary Actuator Endurance Test Rig.

Tamil Nadu Centre of Excellence for Advanced Manufacturing

Jun 2024 – Jul 2024

CAD Intern

- Gained hands-on experience with the 3DEXPERIENCE Platform, specializing in solid part design, surface modeling, drafting, and simulation.

Bonfiglioli Transmissions Pvt Ltd

Aug 2023 – Sep 2023

Process Planning Engineering Intern

- Led a fixture management project to improve operational efficiency by 30% using lean management principles.

Projects

Real-Time Clove Harvesting Robot Using Vision-Guided Actuation

March 2025 – Present

- Designing an autonomous clove harvesting system using Dobot Nova 5, equipped with a cutting actuator and Intel RealSense camera, connected to Jetson Nano for real-time object detection and robotic control.

Design and Development of Active Suspension System for Mobile Robots

Dec 2024 – Apr 2025

- Designed an active suspension system using CAD and integrated an Intel RealSense 3D camera for real-time terrain profiling in mobile robots.
- Developed a dynamic control algorithm that reduced vertical vibrations by up to 55% and overall displacement by 60%, improving stability and reliability in rough terrain.

Human Robot Collaboration for Assembly Operations

Jul 2024 – Nov 2024

- Generated optimal assembly sequences and integrated the robot with an integrated ultrasonic sensor to improve safety and ergonomics.
- Developed a human-robot collaborative assembly process that is 10% more efficient and flexible compared to purely automated systems.

Positions of Responsibility

Actuation Systems Head, Team SOPHOS

Aug 2024 – Jan 2025

- Founded the 11-member robotics team, overseeing the design and integration of motion systems including linear actuators and motor-driven mechanisms for search-and-rescue operations.

Editorial Head, Uddeshya NGO

May 2024 – Jan 2025

- Oversaw official communications, event preparation, and documentation, ensuring smooth cooperation with local orphanages and college administration.
- Boosted social media views and interactions by 170% through efficient content management

Technical Skills

Softwares: SolidWorks, Mastercam, 3DEXPERIENCE Platform, Ansys, Fusion 360, MATLAB, Simulink, LabVIEW, Python - OpenCV, Ultralytics, PFMEA, Lean Six Sigma

Hardwares: 3D Printing, Embedded Systems - Arduino, Raspberry Pi, Jetson Nano, LiDAR, 3D Cameras