

Thinesh Kumar T M

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[Github](#)

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[Portfolio](#)

Proficient in mechatronics systems with strong technical expertise in both hardware and software domains. Motivated to develop and explore new technologies. Experienced in both collaborative teamwork and independent problem-solving. Looking for opportunities to implement new ideas, expand my expertise and skillset.

Education:

Sastra Deemed University, Thanjavur, Tamilnadu

B. Tech Mechatronics

CGPA 7.6/10 | 2024

Coursework:

- Digital Electronics
- Signal Conditioning Systems
- Microprocessors
- Microcontrollers
- Kinematics of Machinery
- Linear Control Systems
- Design of Machine Elements
- PLC and Automation
- Industry 4.0 and IIOT

Campion AIHSS, Tiruchirappalli, Tamilnadu

Higher Secondary Certificate

84.3% | 2020

Secondary School Leaving Certificate

94.4% | 2018

Achievements:

- Britto House Captain.
- Member of *Athletics Club @ Campion*.
- Divisional Level *Gold Medalist* in *100m Hurdles*.
- Participant of State Level Athletic Championship (RDS).
- Represented Tamilnadu in Open Nationals conducted at Visak 2018.

Work Experience:

Senior Engineer @ Larsen and Toubro Pvt Ltd:

Jul'25-Present

- Integrated electro-mechanical systems with welding techniques, achieving project targets for quality, time, and cost with minimal manual intervention.
- Re-programmed old SPM with new modular Fatek PLC programs, providing enhanced functionality, easier troubleshooting, and fail-safe latches.
- Implemented PID-based Arc Voltage Control (AVC) systems to maintain precise arc length under dynamic welding conditions.
- Planned, executed, and prototyped automation solution for flux oven baking systems.

Graduate Engineer Trainee @ Larsen and Toubro Pvt Ltd:

Jul'24-Jun'25

Flow Induced Vibration (FIV) analysis:

- Led and conducted FIV analysis on a critical nuclear project, contributing to the setup and calibration of high-sensitivity sensors and instruments.
- Performed hardware and software integration using NI LabVIEW, DIAdem and FlexLogger; created VIs for sensor data logging and graph generation.
- Automated data processing and analysis of large datasets using VB Script and Python.
- Carried out frequency-domain and time-domain analysis on the acquired data.
- Prepared final FIV report for submission.

Digital Projects:

- Troubleshoot PLC programs in Special Purpose Machines (SPMs) used for production automation.
- Developed user-friendly HMI interfaces for smart SPMs.
- Trained welders on standard operating procedures (SOPs) for SPMs.
- Programmed a pipe-to-tray welding SPM by integrating welding power source (Fronius, SigmaWeld) with PLC and HMI.

Embedded and Hardware Engineer Trainee, Spezar Tech Pvt Ltd:

Feb'24-May'24

- Contributed to IoT and automation projects, developing startup-level experience in robotics and embedded systems.
- Developed a differential-drive Autonomous Mobile Robot (AMR) capable of independent navigation using Intel RealSense D435 depth camera, LIDAR, and wheel odometry.
- Assembled and programmed the robot using C++ and Python to execute 2D autonomous navigation using advanced path planning and navigation algorithms.
- Implemented the TEB local path planning algorithm and tuned its parameters, significantly improving the robot's response time and overall performance.

Projects:

Teleoperated Mobile Robot Base:

- Assembled and tested an industrial differential-drive mobile robot base.
- Simulated the robot's functionality using R-Viz and Gazebo.
- Integrated two 24V BLDC with a Raspberry Pi as the master controller and Arduino Uno as the slave controller, implementing speed control techniques to improve maneuverability.
- Teleoperation implemented and tested.

Self-Balancing Bike (E-Yantra Robotics Competition-IIT Bombay):

- Designed, modeled, and simulated a self-balancing bike for the competition.
- Developed a complete state-space mathematical model and validated it through simulations.
- Applied advanced control strategies, including LQR, to achieve stable dynamic balancing.

Skills:

- Programming and Software Development:
 - C, C++, Python, Embedded C, Lua, Java
 - HTML, CSS, Javascript
 - Git
 - OpenCV
 - Robotics and Simulation Tools:
 - ROS1/ROS2, Gazebo, Rviz, Coppeliasim
 - Matlab/Octave, LabVIEW,
 - Control Systems and Algorithms:
 - PID, LQR
 - Path planning (TEB, DWA)
 - Embedded systems and Hardware:
 - Arduino Uno, ESP32, NodeMCU
 - Raspberry Pi, Nvidia Jetson
 - Industrial automation and integration:
 - PLCs (Fatek, Siemens)
 - HMIs (Fatek, Cermate)
 - Protocols: Ethernet/IP, Modbus (RS485, RS232), I2C
 - Basic 3D Modelling:
 - Creo Parametric
 - Fusion 360
 - Data analysis:
 - NI DIAdem, FlexLogger
 - VBScript, Python (data processing)
 - Linux
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