INDIAN INSTITUTE OF TECHNOLOGY PALAKKAD

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EDUCATION

Degree/Certificate	Institute/Board	CGPA / Percentage	Year
B.Tech (Electrical Engineering)	IIT, Palakkad	9.10 (Current)	2023-Present
Class XII	KURIAKOSE ELIAS ENGLISH MEDIUM SCHOOL MANNANAM	99%	2023
Class X	URSULINE ENGLISH MEDIUM SCHOOL PARIYARAM	96%	2021

PROJECTS

- **MATHEMATICAL MODELING AND AUTONOMOUS CONTROL OF GLIDER IN MATLAB** **Jan 2025 to May 2025**
  Modeled a 2D glider system with aerodynamic forces, wind effects, and propeller thrust. Simulated flight dynamics using MATLABs ODE45 and validated steady-state behavior via open-loop control. Linearized the system near equilibrium and formulated a state-space model. Designed and implemented a state-feedback controller using pole placement to stabilize the glider under disturbances. Verified controllability, observability, and evaluated performance under varying wind conditions to ensure stable flight. *Link*

- **Traffic Light Controller using Verilog** **Nov 2024 to Dec 2024**
  Course project
  Designed and implemented a traffic light controller for both highway and crossroad intersections using Verilog. A finite state machine (FSM) was developed in Verilog to manage the transitions between traffic light states. The functionality of the system was verified through simulation, waveform analysis, and testbench validation. *Link*

- **5 DOF ROBOTIC ARM** **Jul 2024 to Dec 2024**
  Developed a 5-DOF robotic arm for pick-and-place tasks, capable of lifting up to 400g. Performed torque calculations to select optimal servo motors. Modeled the arm in Fusion360 and fabricated it using 3D printing and acrylic. Controlled the arm via Bluetooth using an ESP32 microcontroller. Created a custom mobile app in MIT App Inventor with sliders for servo control. Simulated the arms kinematics and workspace in MATLAB, then implemented and validated the design in hardware. *Link*

TRAINING AND WORKSHOP

- **Build Your Technical Edge (BYTE) workshop Analog** **May 2025**
  Texas Instruments *Link*

EXTRA CURRICULAR ACTIVITIES

- **INTER IIT TECH MEET 13.0, IIT BOMBAY**
  Participated in Inter IIT Tech Meet 13.0 in IdeaForge Drone Problem Statement