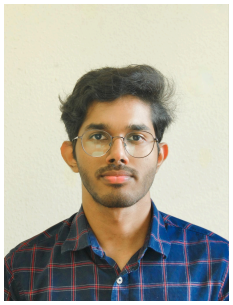

Jithinkrishna V. M.

Electronics Engineer

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Summary

Electrical Engineer with expertise in FPGA design, control systems, and electronics design. Passionate about SOC design and optimization, robotics, control systems, power electronics, and AI-driven hardware optimization.

Skills

Hardware targets : FPGA Zynq 7000, Zybo z7-20, Arduino Uno/Nano, ESP32, TI C2000, Raspberry pi 3B+/pi zero
Design & Simulation platforms : MATLAB Simulink, LTSpice, KiCad, Modelsim, Vivado, Vitis & Cadence virtuoso
Analog electronics : ADCs, DACs, Comparators, SVPWM, PLL, Amplifiers, small signal analysis, Step up/down converters & filters
Digital electronics : ATPG, BIST, Logic minimisation, DFT, Test generation and coverage analysis.
Programming languages : VHDL, Verilog, SystemVerilog, MATLAB, Python & C

Education

Universität Siegen - M. Sc. **2022 -2025**
Electronics Design Technology - Analog & Digital IC design | Fabrication and test | Semiconductor Electronics design | Optoelectronics

College of Engineering Trivandrum - B. Tech **2017 - 2021**
Electrical and Electronics Engineering - Control systems | High/Low voltage systems | Power electronics | Machine design

Work History

Genrobotic Innovations Pvt. Ltd. - Control System Engineer **May 2022 - August 2022**

- Optimised gait-assist FSMs for a pneumatic exoskeleton, significantly improving stability on the long run for paraplegic patients.
- Developed MATLAB Simulink-based finite state machine (FSM) for controlling automated window cleaners with STM32, RaspberryPi 3B+, ESP32, Stepper motor and BLDC motors using I2C and UDP.
- Simulated and analysed a 4-DOF robotic system for precision movements in MATLAB.

Kerala State Electricity Board - Internship **July 2018**

Projects

Imprecise Computing - 2025 - Ongoing
Optimising quantised neural networks on an FPGA-based RISC processor with varied hardware resources.
Technology: Xilinx Zynq 7000, RISC V, AXI4, CNN, Quantization (PTC), RISC-V, Verilog, Vivado & Vitis

Electric Boat Drive - 2020
Designed BLDC motor drivers with field oriented control (FOC) algorithm for Kerala State Forest Department.
Technology: MATLAB Simulink, Ansys, Solidworks, Power Electronics, KiCad & AC machines

Prosthetic arm controlled by EMG sensor - 2019
Developed a robotic arm control system that responds to hand muscle movements using an EMG sensor for motion control.
Technology: Arduino UNO, Raspberry pi, EMG Sensor & Flex sensor.

Sun tracking solar panel - 2018
Designed a solar tracking system using dual LDR sensors for optimised sunlight absorption.
Technology: Arduino, LDR & Stepper motor.

Cell charge monitor with LM3914 - 2017
Developed a charge monitoring system using LM3914 to indicate battery levels.
Technology: IC LM3914

Languages

English - Full working proficiency (C1), German - Limited working proficiency (B1), Malayalam - Mother tongue and Hindi - Limited working proficiency (B1)