# Varsha L. Thirumalai

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## OBJECTIVE

To apply my skills in embedded systems, networking, the internet of things and artificial intelligence (AI) to make technological driven products available to all sections of society.

## Education

San Jose State University **(Expected Graduation: 05/24)** August 2022–Present
Master of Science in Electrical Engineering, GPA 3.8
PES University (Graduated: 05/19) August 2015-May 2019
Bachelor of Engineering in Electronics and Communications, GPA 7.56/10 ~ 3.02/4

## Hands on Projects

- SoC Implementation with Cortex M0, AHB-Lite Bus, and AHB-Peripherals on Nexys A7 FPGA Board
  Crafted Verilog code to implement the SoC, using the Cortex M0 processor to control the LEDs on the FPGA board through embedded C programming.
- IoT-based Vending Machine for Lab Equipment Dispensing
  •Engineered an IoT-based cash transaction mechanism using the Arm Cortex M3 microcontroller for a lab equipment vending machine.
  •Implemented UART protocol for communication between the microcontroller board and external hardware, including a keypad, LCD display, DC motors for item dispensing, and an RFID card system.
- VGA Peripheral Interface Integration with Cortex M0
  •Developed a system consisting of a Cortex-M0 processor, AHB-Lite bus, AHB VGA peripherals, and on-chip memory, integrated onto an Artix A7 FPGA board.
  •Created a test program in Assembly code using Keil Software to verify system functionality and evaluate the VGA peripheral and on-chip memory performance according to their specifications.
  •Successfully demonstrated proper hardware and software synchronization within the embedded system through simulation and verification of the VGA peripheral

## Job Experience

**Wipro Technologies- Client: Ford Motors** Jan 2020–May 2022
Project Engineer Bangalore, India

- Project Related Training-Automation: Integration Testing and Unit Testing on the Car Infotainment System, python scripting using OOPs concept.
- Experience on Script development, Test cases Analysis, Making test plans, writing tests, bug fixing, API development using Python and C. Worked in the lab to schedule test runs and perform Regression Testing.
- Hands on experience with building test Automation Scripts for the Comfort and Control Module and Navigation Module of the Infotainment system.
- The Project enabled me to develop a deeper understanding of the automotive industry and gain insights on the broader disciplines in this domain. Developed lean and agile methodology skills working on this project.
- Mentored and guided 3 new joiners in the team in initial work and process.

## Skills

- Proficient in Python and C.
- Familiar with the basics of SoC design
- Good understanding in Computer architecture
- Familiar with and working towards proficiency in C++.
- Experience with Xilinx (Artix) FPGAs.
- Experience using Vivado.
- Utilized tools such as VMSim and ModelSim.
- Experience validating designs using digital simulation testbenches.
- Good understanding of ML algorithms.
- Knowledge of static timing analysis concepts.
- Experience utilizing a command line interface with Bash.
- Familiar with Windows and Linux operating systems for development.
- Familiar with the AXI, AHB, and APD protocol.
- Experience using Git version control system, Confluence and JIRA.
- Good communication skills
- Proactive in taking up tasks and a quick learner.