Shreyas Narasimhiah Ramesh

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Education

San Diego State University **Expected Graduation - May 2023**

Master of Science in Electrical Engineering. *San Diego, CA, USA*

Dayananda Sagar College of Engineering **Aug. 2014 – Jul. 2017**

Bachelor of Engineering in Electronics and Communication Engineering. *Bengaluru, KA, INDIA*

Experience

CPDM, Indian Institute of Science **Jul. 2020 – Aug. 2021**

Project Associate - Embedded Systems Engineer. *Bengaluru, India.*

- Developed and architected firmware for closed-loop control of a system that extends preservation time of the heart through active cooling and intermittent perfusion on an STM32(Cortex M4) based microcontroller.
- Designed and developed a GUI for accepting User inputs and monitoring active temperature, pH, inline pressure, and strain gauge sensors using the Qt framework and Python (pyqt5) on RaspberryPi 4 hardware.
- Designed and brought up a customized PCB to interconnect all the submodules of the complete system to a central control board.
- Procured necessary components with appropriate certifications suitable for medical devices.

Panacea Medical Technologies Pvt. Ltd. **Jan 2018 – Oct 2019**

Design Engineer - Embedded Systems Engineer. *Bengaluru, India.*

- RTL / Logic development in Verilog for Xilinx Spartan 6 FPGA.
- Low-Level Peripheral driver development on SPI, I2C, CAN, GPIO, Timer, PWM, and UART for LPC1788 microcontroller.
- Board schematic design using Orcad, and Board bring up with necessary test plan.
- Hardware Level Debugging using tools such as Multimeter, Oscilloscope, and Logic analyzer.
- Participation with interdisciplinary teams to design a module of the product.
- Experience in building backend Windows Application using C# on Visual Studio IDE.
- Version control using Git with Microsoft Team Foundation Server.

SOCDV Technologies Pvt. Ltd. **Jul. 2017 – Dec. 2017**

Physical Design Engineer Intern. *Bengaluru, India.*

- Die area and Core area creation, Design of Different Floorplan, Multi-Voltage Design using different Scenarios MCMM(multi-corner multi-mode).
- Placement of Standard cell and Legalizing cells, Generation of Timing Reports, Analyse Setup and Hold Slack for MET or Violated.
- ECO on individual StdCell and its Nets, Buffer, and inverter cell insertion.

Projects

Robot simulation using ROS | *ROS, Gazebo, RVIZ, Ubuntu 18.04* **Apr. 2020 – May 2020**

- Visualization and creation of a custom environment with a robot with necessary ROS communication tools.
- Mapped the robot environment and navigation with a mobile robot.
- Implemented a pick-and-place function with industrial robot arms and state machines for the overall application.

360' Surveillance Self-Balanced Rover | *Embedded C++, Arduino, Gyroscope, nRF24L01* **Jan. 2017 – Jul. 2017**

- Built a prototype of a two-wheeled robot that can balance using the principle of the gyroscope.
- Implemented a closed-loop control system to maintain the orientation of the rover using a PID controller.
- Developed a joystick-based wireless remote to control the rover using nRF24l01 transceivers modules.

Advanced Railway Management System | *LPC2148, Keil µVision, GSM-GPS, Relay* **Jan. 2014 – May 2014**

- Built a prototype of a railway system consisting of a metro train model with a track and a station integrated with all the electronics for the automation of the system.
- Developed an automated system firmware for both the railway staff and the passenger's comfort and safety on LPC 2148, microcontroller interfacing DC motor, GPS & GSM module, Temperature & smoke sensor, RFID modules, and 32x4 LCD.

Technical Skills

Languages: Embedded-C, Verilog, C Programming, Python, C#, and basics of TCL.
Developer Tools: VS Code, Eclipse, Keil µVision, STM32Cube, PyCharm, MATLAB, Xilinx ISE.
Programming Platforms: ARM cortex M3&M4, NXP LPC1768/1788, STM32F4/L4, LPC2148, 89C51.
Hardware Design: Schematic design and BOM generation using Orcad Capture, PCB layout using Eagle, Machine Wiring diagram.
Technologies/Frameworks: Linux, GitHub, PyQt.