ANIRUDH ASHRIT

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SUMMARY – Graduate Student at San Jose State University, Master of Science in Electrical Engineering.
Languages: C, Python, Embedded C, Verilog.
Protocols: CAN, SPI, I2C, UART.
OS & Boards: FreeRTOS, FPGA, ARM, and NXP.
Specialization: Embedded Systems.

WORK EXPERIENCE

Amazon Development Centre, Hyderabad, India   **Sep 2017 – Sep 2018**
Transportation Specialist, Network Operation Centre
- The role ensures a smooth flow in the work chain between warehouse and consumer along with cost management in the entire N.A. network. Supported different processes across multiple teams. Engaged with clients to reduce Accessorial costs to save $5 million in 4 months.

Awards: Two appreciation awards for quick learning and efficient performance. One recognition award for work done in the Accessorial project.

Electronics Corporation of India Limited, Hyderabad, India   **Apr 2016 – May 2016**
Intern
- Assistance and learning of operation of U/VHF Digital Radio used for communication in defense.
- Learning and exploring UV technology involved in PCB Board manufacturing, Radiation testing of defense products, and other works in ECIL.

EDUCATION

M.S. Electrical Engineering (Embedded Systems)   **Aug 2019 – May 2021**
San Jose State University, California.

Relevant Coursework- Embedded Software Design, Embedded Hardware Design, Advanced Computer Architecture, Digital System Design through Verilog, Internetworking

B. Tech Electronics and Communication Engineering   **Sep 2013 – Apr 2017**
Anurag Group of Institutions, Hyderabad, India.

TECHNICAL SKILLS

- **Programming Language:** C, Embedded C, Python, Verilog.
- **Protocols / Technologies:** SPI, I2C UART, CAN, PWM, ADC, GPIO, Interrupts
- **OS Concepts:** Tasks, Queues, Semaphores, Mutex, Scheduling
- **Operating System:** FreeRTOS, Linux (Ubuntu), Windows
- **Tools:** Visual Studio, Synopsis VCS, GitHub, MATLAB, Xilinx, Eagle CAD, Arduino IDE
- **Debugging:** Git, Logic Analyzer, Digital Oscilloscope, Digital Multimeter
- **Processors/Boards:** Arduino, Raspberry Pi 4, ARM-M family, AVR family, STM32
- **Network Protocols**: HTTP, SMTP, UDP, TCP/IP

PROJECTS

Smart Walking Cane for Visually Impaired *(C/C++ |* **Project Link***)*   **Feb 2020 – May 2021**
- The cane assists the person in detecting obstacles in the path, locating the cane, and sending alerts with the user's location during emergencies.

FreeRTOS – Bubble Shooter *(C language |* **Project Link***)*   **Aug 2020 – Dec 2020**
- A game using ARM cortex – M4 based NXP LPC4078 development board, 32x64 LED Matrix, VS1053B Audio Decoder, and 2-axis joystick was developed. SPI, PWM, GPIO protocols were deployed. PCB is designed using Eagle software. The game has been designed in FreeRTOS.

LSM Sensor Integration with ADC and Motor Drive Testing on Pie 4 *(Python |* **Project Link***)*   **Jan 2020 – May 2020**
- A stepper motor was controlled by a 12-bit ADC using a sampling technique on the analog values. The code also detects angular error feedback between actual and calculated values using an accelerometer.

MIPS ISA Dot Product - Forward Chaining *(Python |* **Project Link***)*   **Jan 2020 – May 2020**
- Developed Python code for a 5-stage pipeline with forward chaining. Data Hazards and Control Hazards were reduced to 19 from 75 stalls leading to less code execution time and better performance and throughput.

Vending Machine *(Verilog |* **Project Link***)*   **Oct 2019 – Dec 2019**
- The design was implemented in Verilog using Quartus Prime Software and Teraisc DE 10 Lite FPGA Board. It accepts three currencies as inputs and dispenses five products as outputs.

Real-time Weather Based Smart Sprinkler System *(Embedded C)*   **Dec 2016 – Mar 2017**
- Project was implemented on an Arduino Board and ESP Micro-Controller Board using sensors to display real-time temperature, humidity, and moisture values and allow the user to turn a motor ON or OFF through a mobile app.