Vedant Paithankar

(+49) 15213213922 | vedantpaithankar@gmail.com |

88250, Weingarten, Germany | linkedin.com/in/vedant-paithankar-388a82167 |

GitHub: https://github.com/VedantPaithankar/ |

Profile Summary
An inquisitive Master's student with 2 years of professional experience as Embedded Software Engineer with a relentless drive to deliver and relish for a challenging work environment.

WORK EXPERIENCE

EMBEDDED SOFTWARE ENGINEER – TATA ELXSI   15/09/2019 - 08/2021

- Developed a USB Gadget File System Driver for managing IN and OUT data transfer on all enabled endpoints on NVIDIA Jetson Tx2.
- Engaged in developing USB Plug and Play feature to add the hot plug functionality.
- Developed a firmware update bash script to store the new and old firmware with the possibility of going back to the previous version in case of corrupt firmware.
- Worked extensively on multi-threading application development in C++ on a Linux environment.
- Developed the Power-On-Self-Test algorithm to test all the peripherals at the device startup.
- Reverse Engineered the GPIO pins of Jetson TX2 from Linux user space using sysfs interface.
- Contributed in designing the Firmware Requirement Specifications and Firmware Design Document.
- Managed the source code using GIT version control.

EDUCATION AND TRAINING

MASTER OF ENGINEERING - ELECTRICAL AND EMBEDDED SYSTEMS – Ravensburg Weingarten University of Applied Sciences   09/2021 - Present

Embedded Computing, Computer Architecture, Software Hardware, System on Chip.

POST GRADUATE DIPLOMA - EMBEDDED SYSTEMS AND DESIGN – Centre for Development of Advanced Computing   02/2019- 08/2019

Microcontroller Programming & Interfaces, Embedded OS, RTOS, Internet of Things.

BACHELOR OF ENGINEERING - ELECTRONICS & TELECOMMUNICATION – Savitribai Phule Pune University   08/2014- 06/2018

PROJECTS

Custom Bootloader for STM33F446RE Nucleo Board   **03/2022 – Present**

- Designed a custom bootloader in C for Cortex M4 based STM32F446RE Nucleo board using In-Application Programming to flash an application binary.
- Implemented various functionalities of bootloader application on flash memory such read, write and reading option bytes.
- Implemented functions to jump to user application and perform various erase operations such as sector erase and mass erase.
- Developed a host application in Python to communicate with Nucleo Board using custom command packets based on UART protocol.

IOT Based Tracking System   **11/2021 – 12/2021**

- Simulated the inter-process communication through FIFO between GSM and processor using Transaction level Modelling (TLM) in System C.
- Implemented POSIX thread synchronization to read Power Data and Cell ID from the GSM text file and transfer it to the processor using synchronization techniques such as mutex and conditional variable.
- Worked on a make-file to build the application code efficiently.

Driver Assistance System using CAN protocol
04/2019 – 05/2019

- Implemented CAN protocol for communication between two AVR controller nodes to send and receive data packets.
- Interfaced Ultrasonic, Temperature, speed sensors with AVR Micro-controller.
- Integrated CAN Transceiver's MCP2515 with AVR Boards through SPI protocol for communication.
- Verified the sensor readings using minicom through UART.

Drowsiness Alert System in OpenCV
08/2017 – 02/2018

- Developed a system to detect the face tilt movement, eye blinking rate of the person using Haar-Cascade algorithm and alerting through the alarm in case of driver drowsiness.
- Designed PCB using Express PCB software.

TECHNICAL SKILLS

Interfacing and Network Protocol

USB, CAN, SPI, I2C, UART

Operating Systems

Windows 10, Linux, Free RTOS

Hardware Platforms

Nvidia Jetson Tx2, Raspberry Pi, LPC1768 (ARM Cortex-M3), STM32F446RE (ARM Cortex- M4), AVR

Programming Languages

C/Embedded C, C++, Bash Scripting (Basics)

Version Control

GIT

FOREIGN LANGUAGES

English - Fluent | German - A2 Level

CERTIFICATIONS

- Master Microcontroller and Embedded Driver Development offered by Udemy.
- STM32Fx Microcontroller Custom Bootloader Development offered by Udemy.

ACHIEVEMENTS & AWARDS

- Subject Topper - Software & Hardware   **Sept 21 – Feb 22**
- Recognized by the client for providing technical support regarding the device calibration firmware issues.
- Received appreciation from Senior Manager for fixing USB plug and play functionality and delivering the code within the critical deadline.
- Successfully achieved synchronization to optimize the device processing time to 6 seconds to meet the client's requirement.
- Received a merit-based scholarship for achieving a distinction in 10th and 12th grade.

Weingarten, 01.04.2022