Rajat Chaple

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Education

UNIVERSITY OF COLORADO, BOULDER, CO | JAN 2021 – DEC 2022 | GPA: 3.96 (TILL DATE)

- Master's in electrical and Computer Engineering (Major: Embedded Systems Engineering)
- Related coursework:
  - Principles of Embedded software, IOT Embedded Firmware, Embedded system design, Low Power Embedded Design, Real Time Embedded Systems, Practical PCB Design

MIT COLLEGE OF ENGINEERING, PUNE, MAHARASHTRA |AUG 2011 – MAY 2015 | GPA: 3.31

- Bachelor of Engineering in Electronics and Telecommunication
  - Related coursework: Embedded systems, Microcontrollers and Applications

Skills

PROGRAMMING: Proficient in C, Bare metal, MATLAB, Python, Kernel Device drivers, Buildroot, DMA, Assembly, RTOS
PROTOCOLS: CAN J1939, UART, SPI, I2C, NMEA-0183
HARDWARE SKILLS: Schematic design, PCB layout design using Autodesk Eagle and Altium Designer
MICROCONTROLLERS/KITS: FRDM KL25Z, AT89C51, Arm Cortex M4 based TM4C123GH6PM, MSP432, Raspberry Pi

- Proficient in finding efficient solutions and doing intense debugging of hardware, firmware, and software

Work Experience

INTERNSHIP AT ANALOG DEVICES INC. | MAY 2022 – AUG 2022

- Implemented embedded software on STM32 for closed loop power transfer unit and automation scripts in python
- Tools used: Jama, Jira, Confluence, Git

GRADUATE TEACHING ASSISTANT | COURSE: IOT EMBEDDED FIRMWARE | AUG 2021 – MAY 2022

- Assisted batch of 35 students in setting up low power management in Blue Gecko, debugging application software, setting up Bluetooth connection., etc.

JOHN DEERE INDIA PVT LTD | EMBEDDED SOFTWARE ENGINEER | JULY 2015 – DEC 2020

- Project: Smart Spraying System
  - Implemented live spraying tracker with the help of GNSS to assist customers to monitor their spraying operations in Vineyards/orchards. MATLAB generated C code was integrated into Android App. This reduced Proof-of-concept development time from 4.5 months (average) to 2 months.
- Project: Dashboard Digitization and Telematics
  - Collaborated with cross-functional teams to develop a low-cost, feature-rich product to help farmers/ contractors receive alerts, status, and activities of their vehicles along with tracing and geofencing using an android app. JDLink: https://www.deere.co.in/en/tractors/
- Patent approved: US11363753B2 - Mower implement guidance system - Google Patents

Academic Projects

- CUBIT – solar panel and USB rechargeable, multi-mode smart measuring tape (Link)
  - For this battery-operated device, power supply was designed. microcontroller+ BLE, LCD and sensors including magnetic encoder were interfaced using I2C, ABI, SPI and UART. Low energy mode software was written to enhance battery life. This device was configured to send measurements to android application over BLE.
- Work-life health assist using SiLabs EFR32 (Link)
  - Configured Blue geckos in server and client mode. Server communicated with 9DoF to detect a bad posture for a specified time. This was then reset using the proximity sensor at the client's end.
- Remotely programming AT89C51 (Link)
  - Developed a module using ESP32 and MSP432 which can be connected to 8051 u-controller to program it wirelessly.