Prashant Gandhi

San Jose, CA 95126, USA | +1-(408)-614-6060 | prashantgandhi7979@gmail.com
linkedin.com/in/prashantgandhi27 | github.com/prashantgandhi27

OBJECTIVE:

To secure internship as a Software Engineer and contribute in projects that leverage deep C/C++ and embedded programming skills.

EDUCATION:

M.S. Computer Engineering, Specialization in Embedded Systems, (Est. May 2020)

San Jose State University, San Jose, CA, GPA: 3.85 (1st Semester August – Dec 2018)

B.Tech Electronics and Communication, June 2017

Nirma Institute of Technology, Nirma University, Ahmedabad, India.

Relevant coursework: Operating Systems Design, Data Structures and Algorithms in C++, Embedded Software Design, Embedded Software Application, Computer Architecture

SKILLS:

- **Computer Languages**: C, C++, Algorithms and Data structures, Python (Beginner), Embedded C
- **Software**: Multisim, Proteus, Keil uVersion, IAR Embedded Workbench, Eclipse, PyCharm, Diptrace (PCB Design), MCUxpresso IDE, EAGLE
- **Hardware:** Arduino, SJ-One board, Raspberry pi 3 b+, LPC1769 module, ez430-RF2500 module
- **Operating Systems**: Windows, Linux, FreeRTOS
- **Distributed version control tool**: GitHub, GitLab
- **Unit testing**
- **Communication Protocols:** SPI, UART, CAN, I2C

INTERNSHIP:

GELCO ELECTRONICS PVT. LTD, Gandhinagar, India, October 2017 – April 2018

- **About Company:** Gelco is a manufacturer of quality agricultural electronic controls for motors and submersible pumps, to household electrical equipment's to commercial applications for industries (switch gears).
- Designed **Three Phase Star-Delta Motor Starter Panel** using **PIC microcontroller** and effectively optimized C programming logic.
- Designed Voltage sensing and Current Sensing circuit using **OP-AMP** and simulated on **Proteus.**
- Gained experience from writing **ADC Driver** for PIC microcontroller in **C language**.
- Used implemented ADC driver to detect excessive voltage and current from supply to prevent motor damage.
- **Report:** https://github.com/prashantgandhi27/Internship_report/blob/master/Gelco_Internship_Report.pdf

PROJECTS:

Autonomous RC Car Spring 2019

- **Objective:** In group of 8 students, designed and constructed self-driving RC car which accepts destination coordinates from Android application using SJ-One board which has Cortex-M3 microcontroller.
- Used **CAN** bus protocol for communication between different modules and **FreeRTOS** operating system.
- **Contribution:** Designed PCB for car in **Diptrace** software and made it 90 percent wireless.
- Implemented **C++** and **C language** code in FreeRTOS for Adafruit ultimate GPS module to do parsing, to calculate Heading angle and bearing angle of car with help of **Compass11** data. Wrote **DBC file** for the same.
- Implemented algorithm to calculate shortest distance between destination and current position of RC car.
- **Outcome:** From this project we learned CAN communication protocol, how to write DBC file, how to write C++ code with FreeRTOS periodic schedular, how to create C wrapper to access C++ files, write test cases for code in **unit testing** framework.
- **Report**: http://socialledge.com/sjsu/index.php/S19:_Tech_Savy

Drive stepper motor using Raspberry pi 3 B+, Spring 2019

- **Objective**: In group 2 students, use ADC IC to convert potentiometer analog reading to digital and based on that reading, Raspberry pi generates PWM signal and sends it to motor driver to drive stepper motor.
- **Contribution:** Wrote compenstation function in **C language** for ADC reading to remove error and for ADC data validation wrote fft (Fast Fourier Transformation) algorithm in C.
- Wrote PID controller algorithem for stepper motor and used that data to generate PWM signal. Used LSM303 accelerometer to for feedback loop.

- **Outcome:** learned about ADC driver for Raspberry pi, Proportional-Integral-derivative(PID) control loop to drive motor without noise, how to generate PWM signal using Raspberry pi.
- **Report**: https://github.com/prashantgandhi27/Graduate_Project_Report

Wireless Sensor Networks Fall 2018
- **Objective**: In group of 4 students, construct wireless network using **SJ-One board** which measures temperature, humidity, pressure and air quality of room.
- **Contribution:** Designed circuit schematic and PCB in **EAGLE**. Wrote ADC Driver in **C++ language** for **Cortex-M3** to read gas sensor (MQ135) output and used implemented **SPI Driver** to read BME280 temperature, pressure sensor output in **Eclipse** and used **FreeRTOS** operating system.
- **Outcome:** At the end of this project we were able to write SPI, UART drivers to integrate sensors with SJ-One board using FreeRTOS operating system.
- **Report**: http://socialledge.com/sjsu/index.php/F18:_Wireless_sensor_network

Internet of Things (IOT) based baggage tracking Fall 2016
- **Objective**: In group of 3 students, create wireless network using ez430-RF2500 module which can track moving baggage and show location on computer.
- **Contribution:** Implemented C language program to construct hopping scheme which sends location of moving module to main master computer and this implementation was done in IAR embedded workbench IDE.
- **Outcome:** we successfully created networking using hoping algorithm to detect moving module in C language.
- **Report**:https://github.com/prashantgandhi27/Undergrade_Project_reports/blob/master/IOT_Baggage_tracking_report.pdf

EXTRA CURRICULUM ACTIVITIES/ACHIVEMENTS:
- Won first prize in Analogism in NU-Tech 2016.
- Active member of Rotary Club of Nirma University.
- Collected paper waste from neighborhood, raised fund from selling it and bought text books for poor children with the help of NGO -Make a Difference.
- Worked as a tutor in Ahmedabad Municipal School as a part of NGO (YUVA Unstoppable).

INTERESTS:
- Reading, Travelling, Swimming