

BHARGAV DHARMENDRA CHAUHAN

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Education:

Master of Science in Embedded Systems Engineering

August 2021 - May 2023

University of Colorado Boulder, Boulder, CO

GPA 4.00/4.00

- Relevant Coursework: Embedded System Design, Principles of Embedded Software, Practical PCB Design and Manufacture, Embedded Sensors and Motors.

Bachelor of Engineering in Electronics and Telecommunication Engineering

August 2015 - May 2019

Dwarkadas J. Sanghvi College of Engineering, University of Mumbai, India

GPA 8.73/10.00

- Relevant Coursework: Analog and Digital Electronics, Microprocessors and Microcontrollers, Integrated Circuits.

Technical Skills:

- **Programming Languages:** C, C++, Assembly, Python, JAVA, DBMS, Git, Makefile.
- **Design and Simulation Software:** MATLAB, Altium, CAD Eagle, Keil, Proteus, Arduino IDE, Selenium, Jupyter, Eclipse.
- **Microprocessors and Microcontrollers:** Intel 8085, Intel 8086, Microchip 89C51, ATmega328P, ATmega32A, ATtiny2313.
- **Embedded Platforms:** Arduino series, Cypress PSoC 5LP (Cortex M3), PCB routing, Bluetooth module, ESP8266 Wi-Fi module, MSP432 (Cortex M4F), FRDM KLZ25 (Cortex M0), Bare-metal.
- **Debugging:** Oscilloscope, Digital Multimeter, Logic Analyzer, Unit test, Disassembly, GDB.
- **Protocols:** I2C, UART, SPI, TCP/IP, HTTP, Memory Mapping.

Experience:

System Engineer, Infosys LTD., Mysore

August 2019 - May 2020

- Learned new programming languages and software such as Python, Java, Database Management, and Selenium to build an understanding of software industry.
- Coordinated with team of 4 on Selenium Webdriver, formulated browser-based regression automation suites and tests, completing the script prior to deadline and testing the client's website.
- Experienced the insights into the operations of an established, professional firm, while further allowing to devise ability to work in teams, communicate and manage time and resources to complete tasks optimally.

Research Lab Assistant, Value Plus Enterprises Private Limited, Mumbai

August 2020 – December 2020

- Researched with 1 other intern about the various areas and facets of LED testing such as selection of timer and counter, variac transformer and contactors.
- Analysed and tested various models of constant current LED drivers to output current of 300 and 1500 mA for desired level of lumen output.
- Played a key role in designing newer 50- and 100-watt models of LED lighting in line with market requirements.

Academic Projects:

BUFFAHITI SMART TRAFFIC LIGHT [CU Boulder Project]

January 2022 – February 2022

- Implemented a finite state machine which configures the SysTick device inside the FRDM KLZ25 to cause timing interrupts.
- Integrated the traffic light with user interface using a capacitive slider by polling it at regular timing intervals.

GOLDEN ARDUINO AND SENSOR SHIELD [CU Boulder Project]

August 2021 – December 2021

- Designed and manufactured a better version of commercial Arduino in terms of overall system noise. Achieved a 50% improvement on noise and 20% less near field emissions compared to the commercial Arduino UNO.
- Accomplished the designing of the 4-layer sensor shield circuit which lines up onto the commercial Arduino and uses different sensors including MQ-7 sensor, DRV5053, DHT11, buzzer, microphone, ambient light sensor etc.

HAND GESTURE VOCALIZER FOR THE SPEECH-IMPAIRED [Undergrad Project]

August 2018 – May 2019

- Developed a speech synthesizer leveraging the microcontroller ATmega32A, translating the gestures to audio and visual output. The prototype model included flex sensors giving signals to the microcontroller selecting from pre-coded 9 inputs.
- Accomplished the designing of the circuit on the software and modeling the hardware components on the PCB board, programming the system employing Atmel studio, and converting the program to assembly language.

HOME AUTOMATION USING SENSORS [Undergrad Project]

January 2018 – May 2018

- Prototyped a development board integrated with sensors, 8-bit AVR microcontroller ATmega328p and 6V relays to control the appliances based on the sensor outputs.
- Combined various sensors such as PIR sensor, IR sensor, LM35 temperature sensor and LDR sensor and interfaced into a PCB board while programming the components in C language to function synchronously with each other.

WIRE CUTTING MACHINE [Undergrad Project]

August 2017 – December 2017

- Designed a project one automatically cuts copper wires based on the given input length and quantity.
- Implemented the prototyping of PCB with Eagle software, and hardware assembling with electric components. Studied and utilized the concepts of Stepper and Servo motor and analyzed various designs to implement the mechanical model.

PLOTTER USING COMPUTER NUMERICAL CONTROL [Freelance Project]

March 2017 – December 2017

- Modelled a CNC plotter machine, writes text or draws images by using a pen on the provided solid surface.
- Build a model with extensions incorporating lazer module and 555 motor to route 2D designs on various surfaces.