

PARTH SARTHI SHARMA

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EDUCATION

Cornell University

MEng (Electrical and Computer Engineering)

Jan 2021 - Dec 2021

Cumulative GPA: 4.04

Masters program with a specialisation in Embedded Systems programming. Relevant coursework:

- Design with Embedded Operating Systems
- Digital Systems Design Using Microcontrollers
- Power Electronics
- Integrated Micro Sensors and Actuators: Bridging the Physical and Digital Worlds

Ambedkar Institute of Advanced Communication Technologies and Research *2015 - 2019*

B.Tech (Electronics and Communication Engineering)

Overall CGPA: 8.3 / 10

Undergraduate program with first division. Relevant coursework:

- Embedded Systems
- Microprocessors and Microcontrollers
- Computer Organisation and Architecture
- Data Structures and Algorithms

WORK EXPERIENCE

Oculii Corporation

Software Engineer II

Beavercreek, Ohio

Jan 2022 - Present

- Developing and designing embedded C firmware for FMCW radars
- Design, code, and document new and legacy embedded firmware features for ARM based TI microcontrollers
 - Bringup and optimization of Ethernet and Automotive Ethernet stack on AM273X
 - SBL migration for AM273X and AWR2944
 - Development of custom feature for OEMs with a reported 40% time optimization
- Spearheaded the development of end-to-end multi-frame datapath
 - Architect, implement, and test first generation bash scripts for compilation and chaining of datapath modules
 - Responsible for development and validation of increase in number of detections by 6000%.
- Bringup and validation of Valens SerDes technology for CSI2 based data transmission
 - Study and document the feasibility and advantages of said system over existing one
 - Worked closely with a team of internal and external engineers for design requirements and implementation

Collective Embodied Intelligence Lab, Cornell University

Graduate Student Researcher

Ithaca, New York

Jun 2021 - Dec 2021

- Developed a human scale inflatable (HSI) rover called Martha in collaboration with a hardware team
- Redesigned the pre-existing pulley architecture and software to solve the problem of overshooting
- Successfully optimized the preexisting code-base to reduce the memory usage of the rover by 60%

- Worked on Genetic Algorithms for energy conservation in power grids.
- Successfully developed an integrated light automation system (for HVAC) with 4 ambient zones.
- Worked on automation and optimization of a remote HVAC control system achieving upto 35% energy savings.

SKILLS AND ABILITIES

- Experience with: C, RTOS, Version Control, Microsoft Office
- Worked with: Eclipse-based IDEs, Git, Jira, Polarion
- Skilled with various 8-, 16-, & 32- bit microprocessors from TI, Microchip, RaspberryPi foundation
- Working knowledge of Linux and Bash
- Familiar with digital multimeters, oscilloscopes, and logic analyzers

PATENTS

Ashu Verma, B.K. Panigrahi, Sumedha Sharma, Parth Sharma, “Optimal Building Energy Management System” (Indian Patent Application No.: 202011051401)

RESEARCH PUBLICATIONS

“A Cyber-Secure Distributed Control Architecture for Autonomous AC Microgrid,” in IEEE Systems Journal, doi: 10.1109/JSYST.2020.3020968.

“Development of a Cost-effective Color Pattern-based Security System,” 2019 6th International Conference on Computing for Sustainable Global Development (INDIACom), New Delhi, India, 2019, pp. 988-991.

PROJECTS

Working on the RaspberryPi Pico

- As a part of my capstone MEng Project at Cornell University, I worked intensively with the new RaspberryPi Pico microcontroller to explore its capabilities and limitations.

Rescue Robot: Scouting Owl

- For the capstone project for ECE 5725: Design with Embedded Operating Systems, I worked on a rescue robot called ”Scouting Owl” which can be controlled remotely over a local network using TCP/IP protocol.

Voice Controlled Dino Game

- For the final project for ECE 4760: Digital Systems Design Using Microcontrollers, I worked on a voice controlled version of the Google Dino game on the PIC32 microcontroller.

High frequency AC switching using TRIACS

- I developed an easy to install module that can control up-to 4 appliances over the internet for HVAC automation. It used TRIACS, optocouplers and NodeMCU in order to switch the appliances based on user input from an android application and a desktop GUI developed using Processing.

Hand Motion Controlled Quadpod Robot

- This project was a part of my junior thesis during my undergraduate studies.
- During the penultimate semester of my undergraduate studies, I created a Quadpod robot that can be controlled wirelessly using hand gestures.