Samanyu Okade

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EDUCATION

Delft University of Technology
Delft, Netherlands 2023-2025
MSc in Electrical Engineering – Microelectronics track, specialization in Digital Systems

Vellore Institute of Technology
Vellore, India 2019-2023
BTech in Electronics and Communication Engineering: 8.25CGPA

TOP TECHNICAL SKILLS

Python; Verilog HDL; RTL Design; Digital CMOS Design; MATLAB; PCB designing; Sensor Technology

WORK EXPERIENCE AND INTERNSHIPS

Lunar Zebro
Comms Subsystem Lead ***Oct 2024- Present***
- **Design and critical assessment** of the digital **communications board** (requirements → schematic upgrade → PCB design → radiation-aware parts list → bring-up).
- **Mentor & review** the work of 2 undergraduate engineers, coaching them on **Altium schematics**.

RTips Technologies
Hardware intern ***Oct 2022- May 2023***
- Researched and improved on a device to convert between **MODBUS and DALI** communication protocols from base **design of the PCB** to its integration.

Students for the Exploration and Development of Space (SEDS India)
Executive Director ***Nov 2021- Nov 2022***
- Successfully led and organized a cross-functional team of 8 SEDS India Staff members to **improve efficiency and communication**.
- Responsible for **maintaining all projects and relations** within SEDS India and its **14 sub-chapters**.

Chapter Affairs and Expansions Manager ***Aug 2020- Oct 2021***
- Oversaw the **expansion of SEDS as a chapter to 2 more university teams to join our community** of students for Space Development.
- **Ideating for projects** like CubeSats, **and competitions** like the International Rover Competition and International Rover Design Competition to help all the 14 sub-chapters that required it.

The Institution of Engineering and Technology (IET-VIT Vellore)
Hardware Head ***Dec 2020- Dec 2021***
- **Managed, taught, and guided a team of 12** in learning hardware skills in **embedded systems, fundamentals of communication, CMOS, and digital designs**.
- **Mentored 3 teams to victory** in hardware tracks and open categories **in hackathons** Equinox, and Hack4cause.

ACADEMIC PROJECTS

Radiation-Tolerant Digital Design Implementations of Neuromorphic Computers ***Jan 2024 – Present***
- Designing, implementing and testing a **radiation-tolerant digital design** of **Neuromorphic computers** with minimal overhead.

- **Master's Thesis project** utilizing the concept of comparatively **energy-efficient SNN** processes to rival the power-intensive **ANN-based hardware** today.
- Compared the error tolerance results of a CNN's predictions on an MNIST dataset with a Spiking CNN on an NMNIST dataset to **prove the error-tolerant abilities of the SNN**.

FPGA based (hardware) decision-making for efficient satellite orientation and propulsion ***Oct 2022 – Apr 2023***
(Published in IEEE Xplore in June 2023)

- Devised a method for **rockets and propulsion engines** to orient and **align** the solar panels and themselves using **FPGAs** to make the **most efficient positioning decisions** using sensor-based information.

A Robotic Solution for Internal Imperfection Detection in Industrial Machinery ***Sept 2021 – Nov 2021***
(Published in the AIP Conference Proceedings in March 2024)

- Prototyped a small, mobile robot with flame, DHT-11, MO-26, and ultrasonic sensors to **detect anomalies and conditions within tight industrial equipment spaces**.
- The distance sensor-mounted servo motor automates steering within tight industrial machine spaces.

Goniometry- Visual Aid ***Oct 2021***

- Extending the use of a **flex sensor incorporated glove** to operate a **feedback system for the visually impaired** while walking, **omitting the use of a walking stick**.
- Using a rotating servo motor mounted with a distance sensor atop a cap would require the user to merely move a finger in the glove.

OTHER TECHNICAL SKILLS

Cadence Genus; Cadence Innovus; Embedded Systems; Assembly Level Language; Internet of Things (IoT); Robotics; basics of C/C++

CERTIFICATIONS

- Provisional discovery of the Main Belt asteroid 2021EM17.
- CMOS Digital VLSI Design-course certification offered by IIT Roorkee. (NPTEL)
- Linear Circuits 2:AC Analysis-course certification offered by Georgia Institute of Technology. (Coursera)
- Introduction to Electronics-course certification offered by Georgia Institute of Technology. (Coursera)
- Introduction and Programming with IoT Boards-course certification offered by POSTECH. (Coursera)
- National Science Olympiad (NSO) Zonal Gold medalist in 2015.
- Academic proficiency awards in 2013, 2015, and 2017.

CAMPUS & COMMUNITY INVOLVEMENT

- Core Committee member at the Institution of Engineering and Technology (IET) 2019-2023
- Core Committee member of SEDS-VIT 2019-2023
- SEDS India Staff and Board member 2020-2023
- Alpha team member of VIT Dance club 2020-2023
- Flautist and musician in VIT Community Radio 2019-2023
- VIT Swim team 2019-2023

KEY SKILLS

Leadership; Public-speaking; Effective Communication; Team-management; Writing; Creative thinking; Adaptability

EXTRA-CURRICULARS

- Participated in and won art and painting competitions, both national and International (Japan, India, and Malaysia).
- Poom Belt in Taekwondo.
- Participated in and won competitions of various levels as a Flautist, keyboardist, Vocalist, and Dancer.