

# Samanyu Okade



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## ABOUT

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I create modular and scalable solutions to make a real impact. I bring a critical and analytical mindset to learn and deliver quickly and efficiently. As a result-oriented engineer with a growth mindset, I aim to solve complex problems using digital logic and FPGA technology to create scalable and intelligent hardware solutions for real-world challenges.

## EDUCATION

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### Delft University of Technology

Delft, Netherlands

2023-2025

*MSc in Electrical Engineering – Microelectronics track, specialisation in Digital Systems*

### Vellore Institute of Technology

Vellore, India

2019-2023

*B.Tech in Electronics and Communication Engineering*

## TOP TECHNICAL SKILLS

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Python scripting; Verilog HDL; Digital and RTL Design; Vivado; git; Digital CMOS Design; CDC awareness; Sensor Technology

## WORK EXPERIENCE AND INTERNSHIPS

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### MKB Data Studio

*ML engineer for client, Koninklijke van Twist (KVT)*

*July 2025- Aug 2025*

- Built a **Python pipeline** to parse the power generator issues and multi-template service-report PDFs into normalised CSVs.
- Delivered a **multilabel learning model** with rule checks to flag incomplete fields.

### Lunar Zebro

*Comms Subsystem Lead*

*Oct 2024- June 2025*

- **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 a device that converts **MODBUS and DALI** communication protocols from the base **design of the PCB** to its integration on **KiCAD**.

### Students for the Exploration and Development of Space (SEDS India)

*Aug 2020- Nov 2022*

- As the **Chapter Affairs and Expansions Manager**, I oversaw the **expansion of SEDS as a chapter to 2 more university teams to join our community** of students for Space Development.
- As the **Executive Director** in the following term, I successfully led and organised a cross-functional team of 8 SEDS India Staff members to improve efficiency and communication.
- **Ideated and mentored projects**, including CubeSats, and participated in competitions such as the International Rover Competition and International Rover Design Competition, to support all 14 sub-chapters as needed.

## The Institution of Engineering and Technology (IET-VIT Vellore)

### Hardware Head

Dec 2020- Dec 2021

- **Managed, taught, and guided 12** freshers and sophomores in learning hardware skills in **embedded systems, fundamentals of communication, CMOS, and digital designs**.
- **Mentored three teams to victory** in hardware tracks and open categories in **hackathons**, Equinox, and Hack4cause.

### ACADEMIC PROJECTS

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#### TIENOS: A Tool for Intensive Exploration of Neuromorphic Workloads for Outer Space

Jan 2024 – Aug 2025

- **Master's thesis:** designed a tool to map **training-layer protection** and **tinyODIN hardening targets**, via intensive sweeps to **improve robustness** with zero to **minimal overhead** (vs 3x logic replication in TMR).
- Using **Python+Vivado**, TIENOS produces **+15% accuracy** in realistic **outer space bit-flip noise conditions** with **minimal changes** to a simplistic resource-constrained CubeSat system, with suggestions for further hardening.

#### FPGA-based (hardware) decision-making for efficient satellite orientation and propulsion

Oct 2022 – Apr 2023

(Published in IEEE Xplore in June 2023)

- **Undergrad thesis:** 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.
- Designed an amplified **LDR network** to drive actuation through **servos** using a **Cyclone IV FPGA** with **Xilinx Vivado**.

#### A Robotic Solution for Internal Imperfection Detection in Industrial Machinery

Sept 2021 – Nov 2021

(Published in the AIP Conference Proceedings in March 2024)

- Prototyped “SensoRobot”, a small, automated mobile robot by integrating flame, DHT-11, MO-26, and ultrasonic sensors to **detect anomalies and conditions within tight industrial equipment spaces**.

### OTHER TECHNICAL SKILLS

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TCL; PCB designing; Cadence Genus and Innovus; MATLAB; Embedded Systems; VHDL; Assembly Level Language; Linux; Internet of Things; RISC-V familiarity; Robotics.

### CERTIFICATIONS

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- Bosch Spring School on AI in industry in 2025.
- 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

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- Core Committee member at the Institution of Engineering and Technology (IET) 2019-2023
- 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

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

### EXTRA-CURRICULARS

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- 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.