Rahul Verma

Seeking Co-Op/Internship opportunities starting summer 2024 for CPU/SOC/ASIC/FPGA/RTL Design & Verification.

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Content

Profile at Glance

EDUCATION:

MS in Electrical and Computer Engineering
University of Houston, Houston, TX, USA.

Bachelor's in Electrical and Electronics Engineering
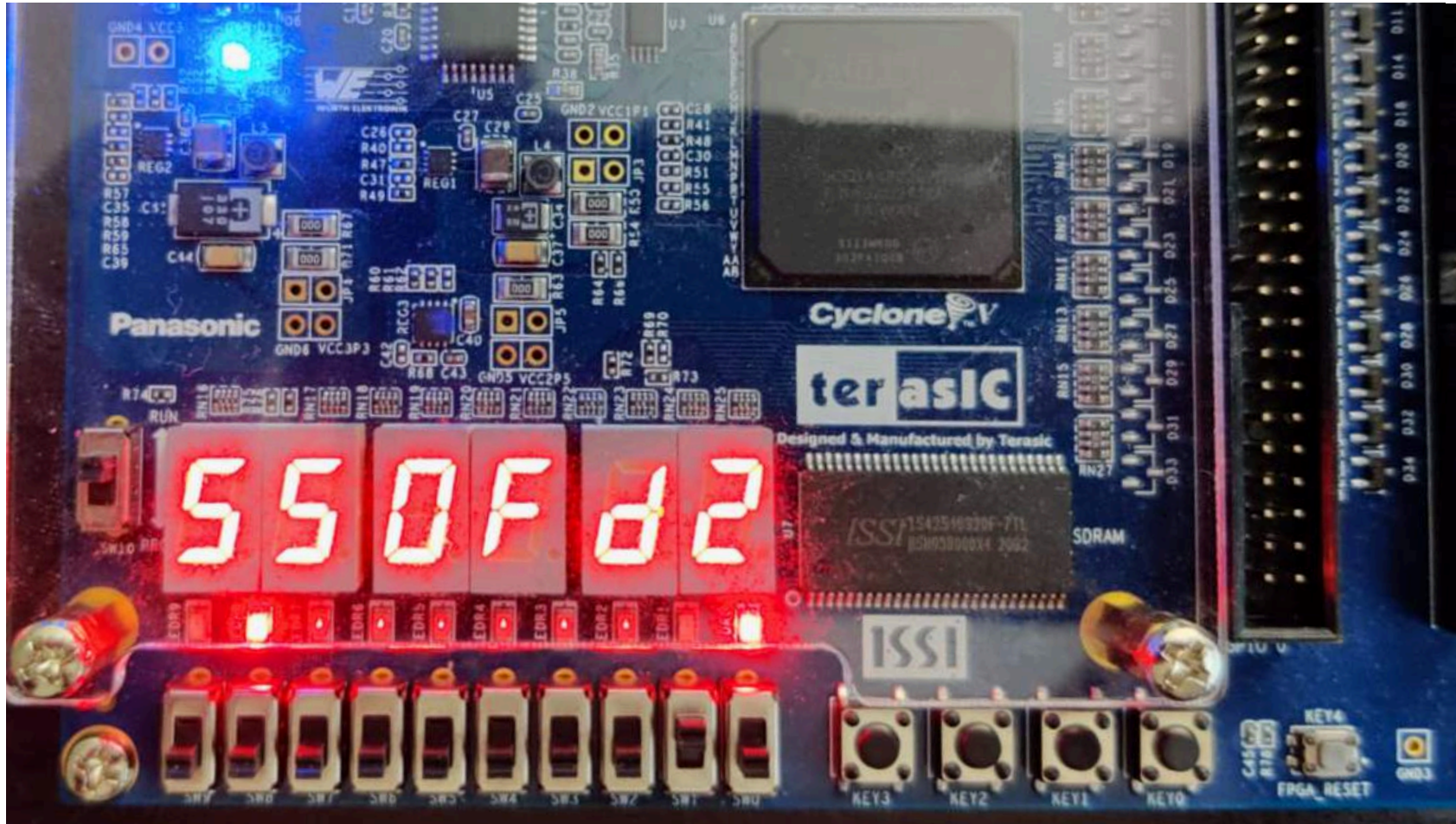**Vardhaman College of Engineering, Hyderabad, India.**

EXPERIENCE:

Research Assistant
Advanced Imaging and Sensing Lab, University of Houston.

Academic Projects

FPGA- Based Arithmetic Math Game.

Project Link:
https://github.com/rahulverma00/FPGA--Based-Arithmetic-Math-Game

Skills

- Verilog,
- Combinational logic and sequential logic,
- System architecture designs,
- High-Level One-Procedure FSM,
- Timing diagrams,
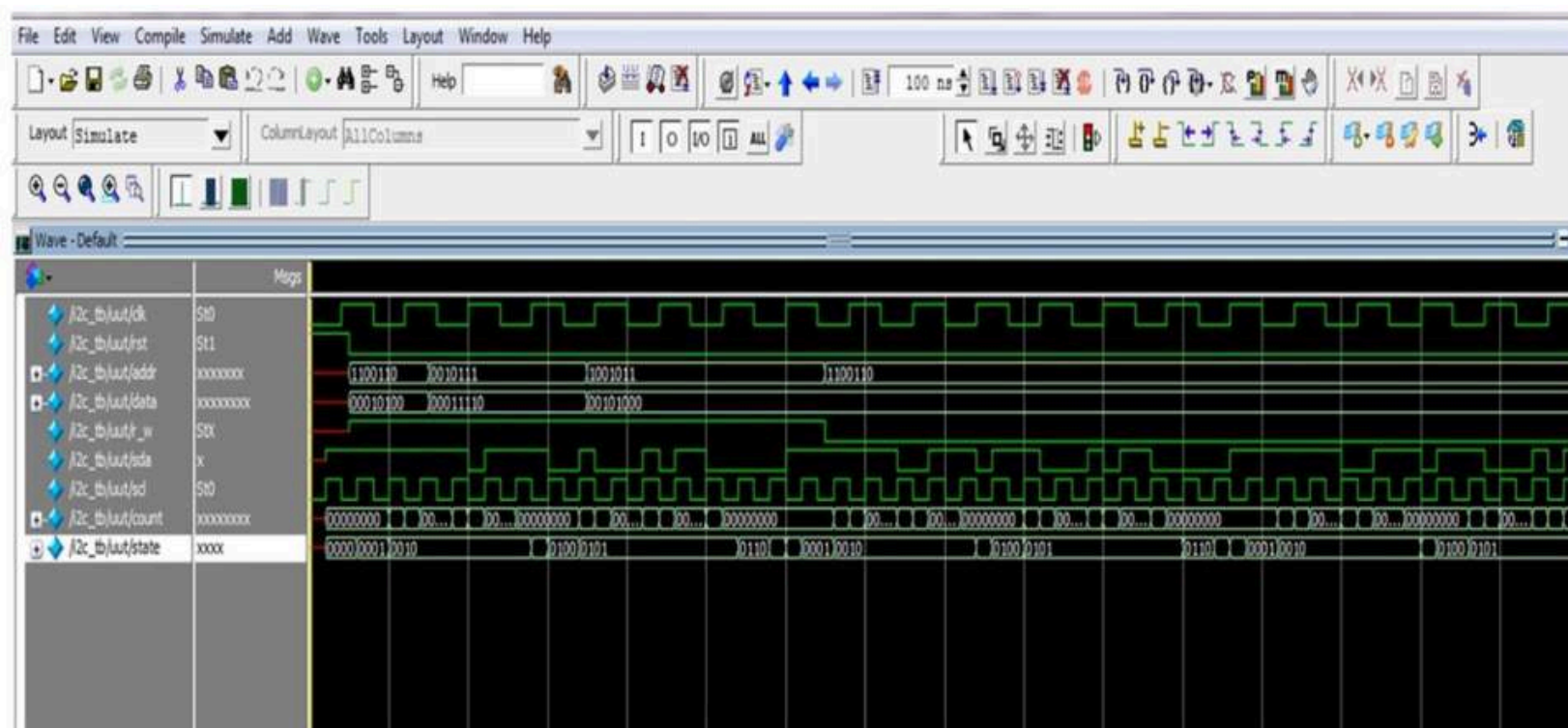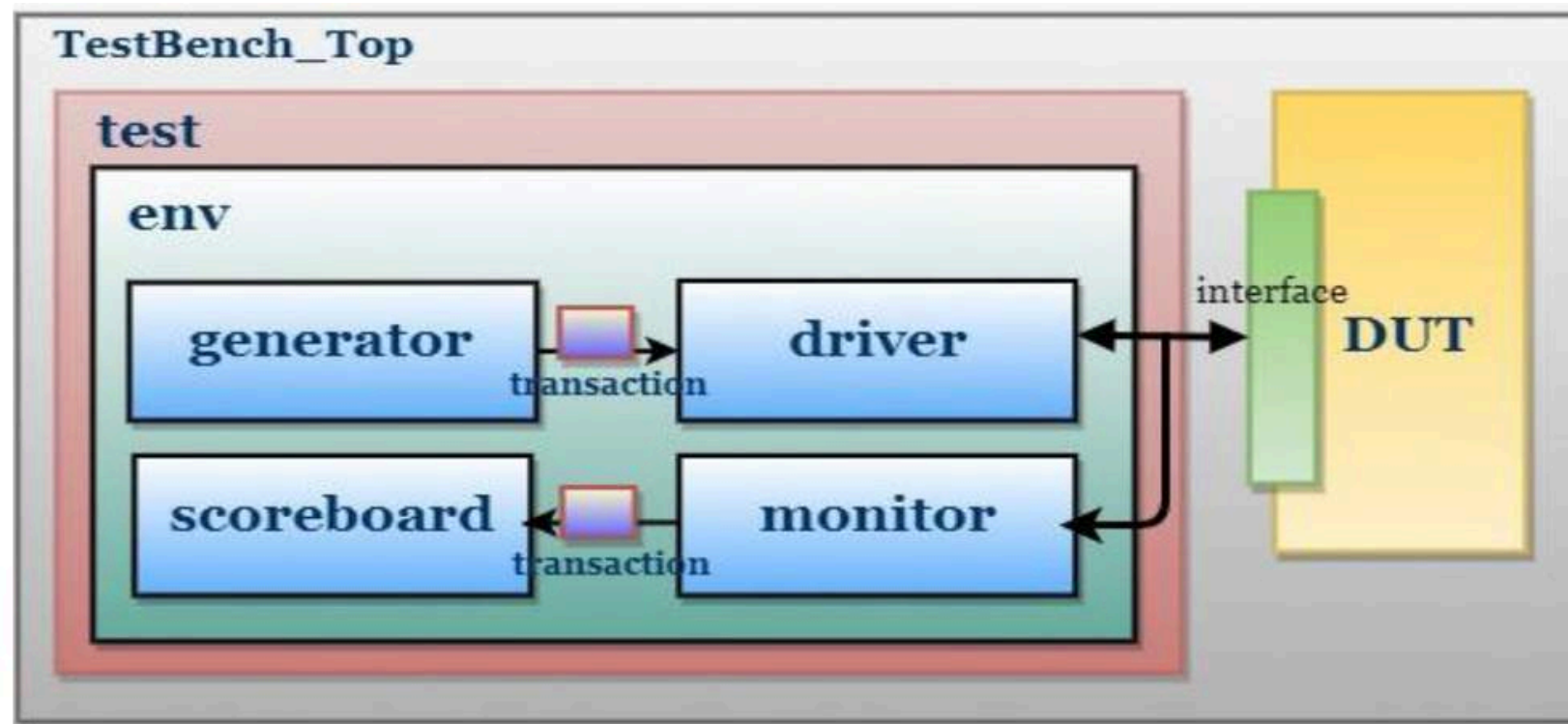- Timing analysis

Tools

- Intel Cyclone 5 FPGA
- Quartus Prime
- Modelsim

Learnings

- System Integration
- Finite State Machine (FSM) Design
- Register Transfer Level Hands-On
- Timing Analysis and Simulation
- Error Handling and Recovery

Academic Projects

Design and verification of I2C communication protocol using System Verilog.

Skills

- System verilog,
- Verification methodologies
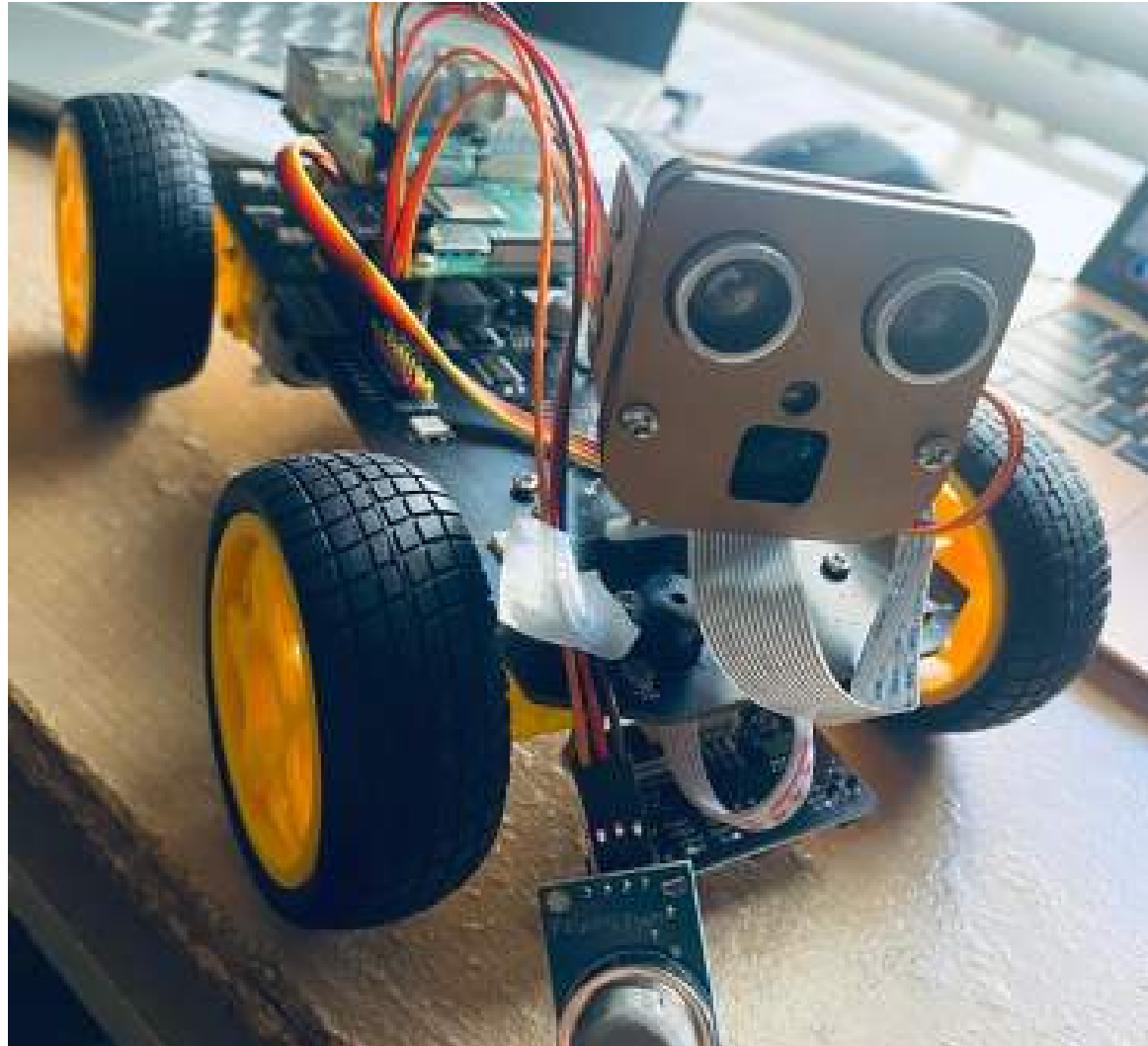- Understanding I2C Protocol
- Simulation and testing

Tools

- Mentor graphics tool
- Modelsim

Learnings

- Synthesis techniques
- Test bench development.
- Protocol functionality verification.
- Timing analysis

Academic Projects

Raspberry Pi- Based Monitoring & Leakage Detection Engineering Robot.

Project Link:
https://github.com/rahulverma00/Raspberry-Pi-based-monitoring-leakage-detection-engineering-robot/blob/main/termProjectDesignDocument_%20PiCrafter.pdf

Skills

- Python
- Sensor integration
- Data processing
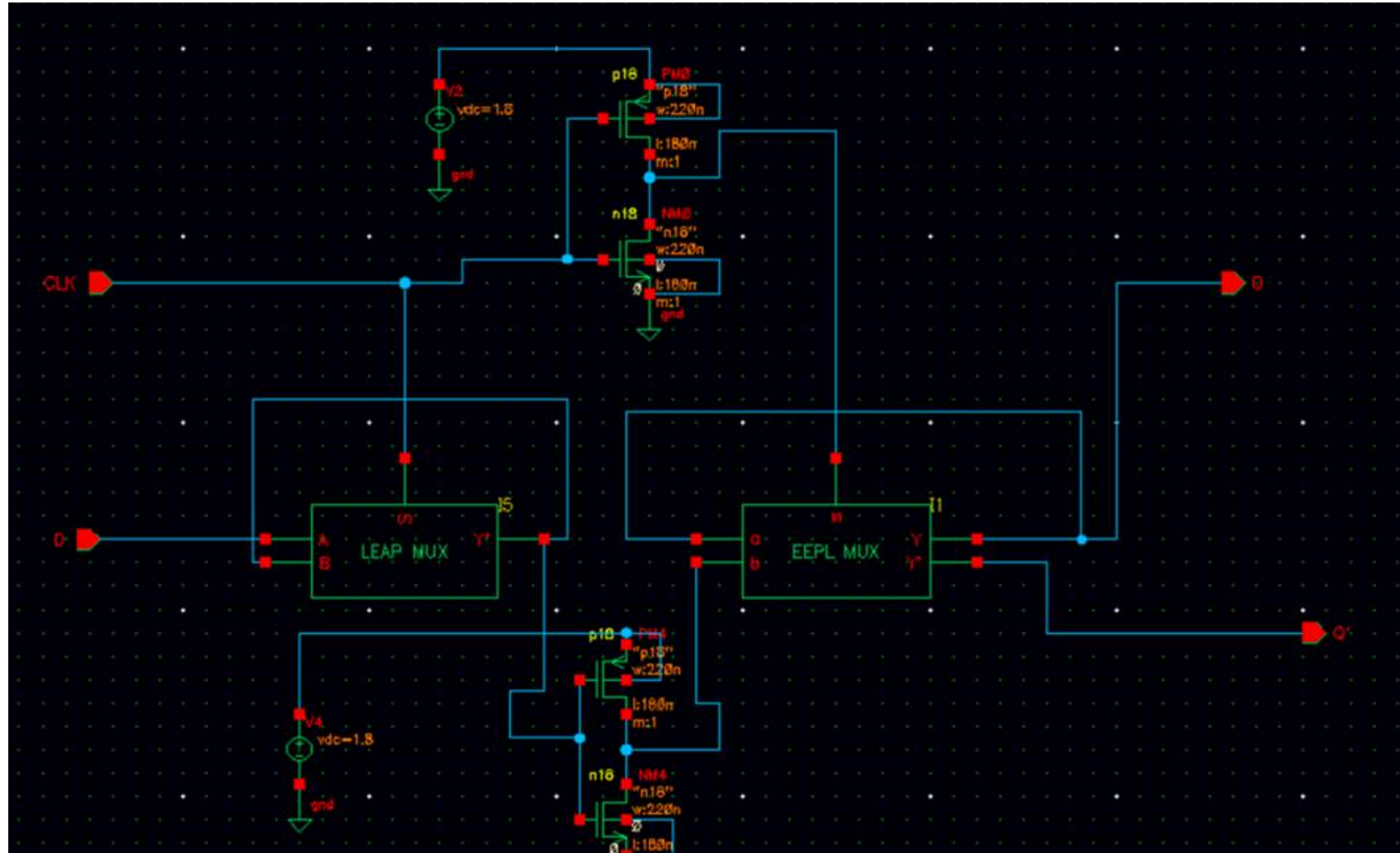- Documentation

Tools

- Raspberry Pi
- Raspbian
- MQ2 sensor, camera, motor module

Learnings

- Wireless communication
- I2C, UART protocol
- Programming skills
- Interdisciplinary collaboration
- Data acquisition

Academic Projects

Design of 180nm EEPL multiplexer and D flip flop.

Project Link:
https://github.com/rahulverma00/VLSI-design_project/blob/main/Final%20VLSI%20project%20%20(1).pdf

Skills

- Transistor-level design
- Schematic circuit design
- Logic gate understanding
- Testing and troubleshooting

Tools
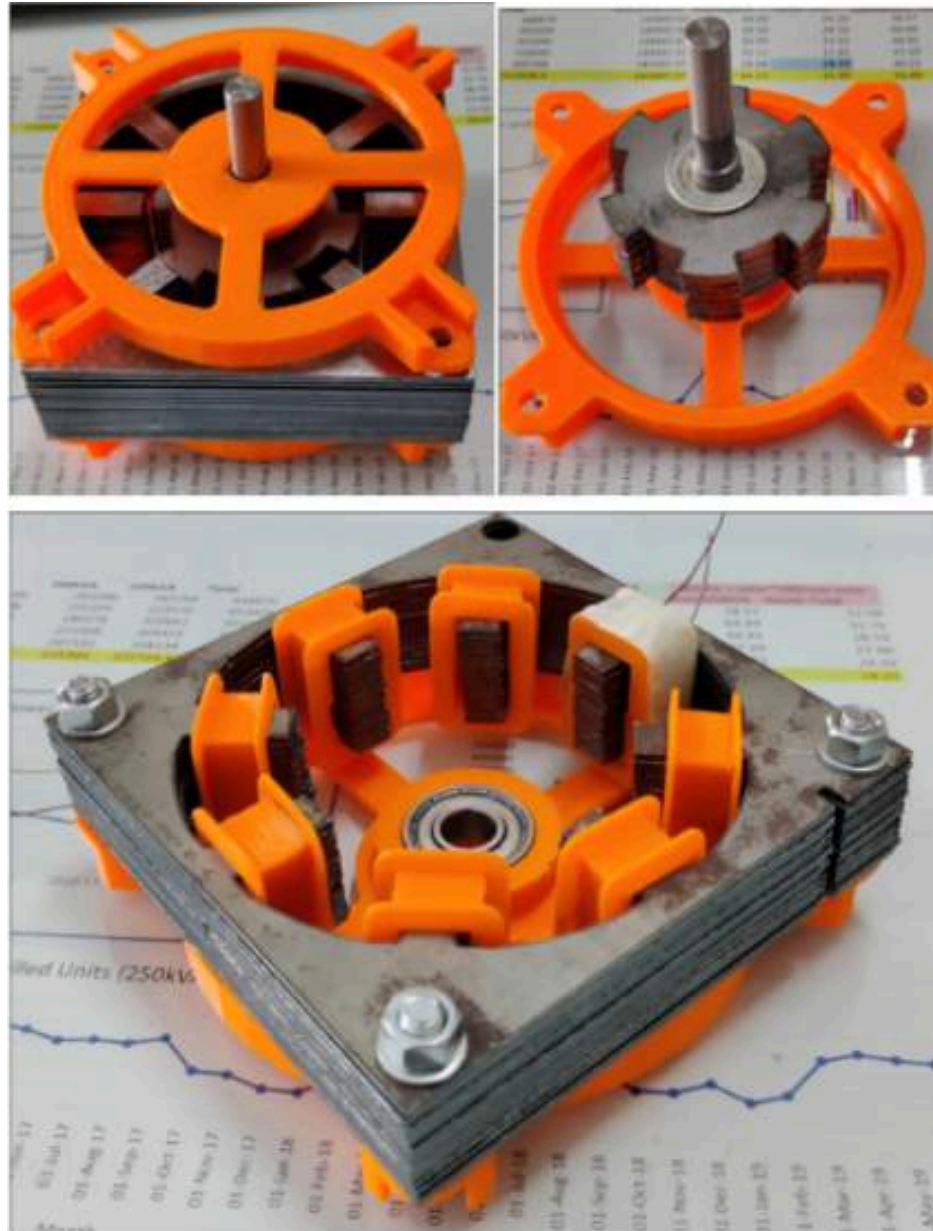
- Cadence virtuoso

Learnings

- VLSI design
- Low-power design techniques
- Component design
- DRC check
- Netlist generation

Academic Projects

Design of model Switched Reluctance Motor.

Project Link:
https://github.com/rahulverma00/Design-of-model-Switched-Reluctance-Motor/blob/main/Technical%20Paper.pdf

Skills

- Machine design
- CAD design
- Finite element analysis (FEA)
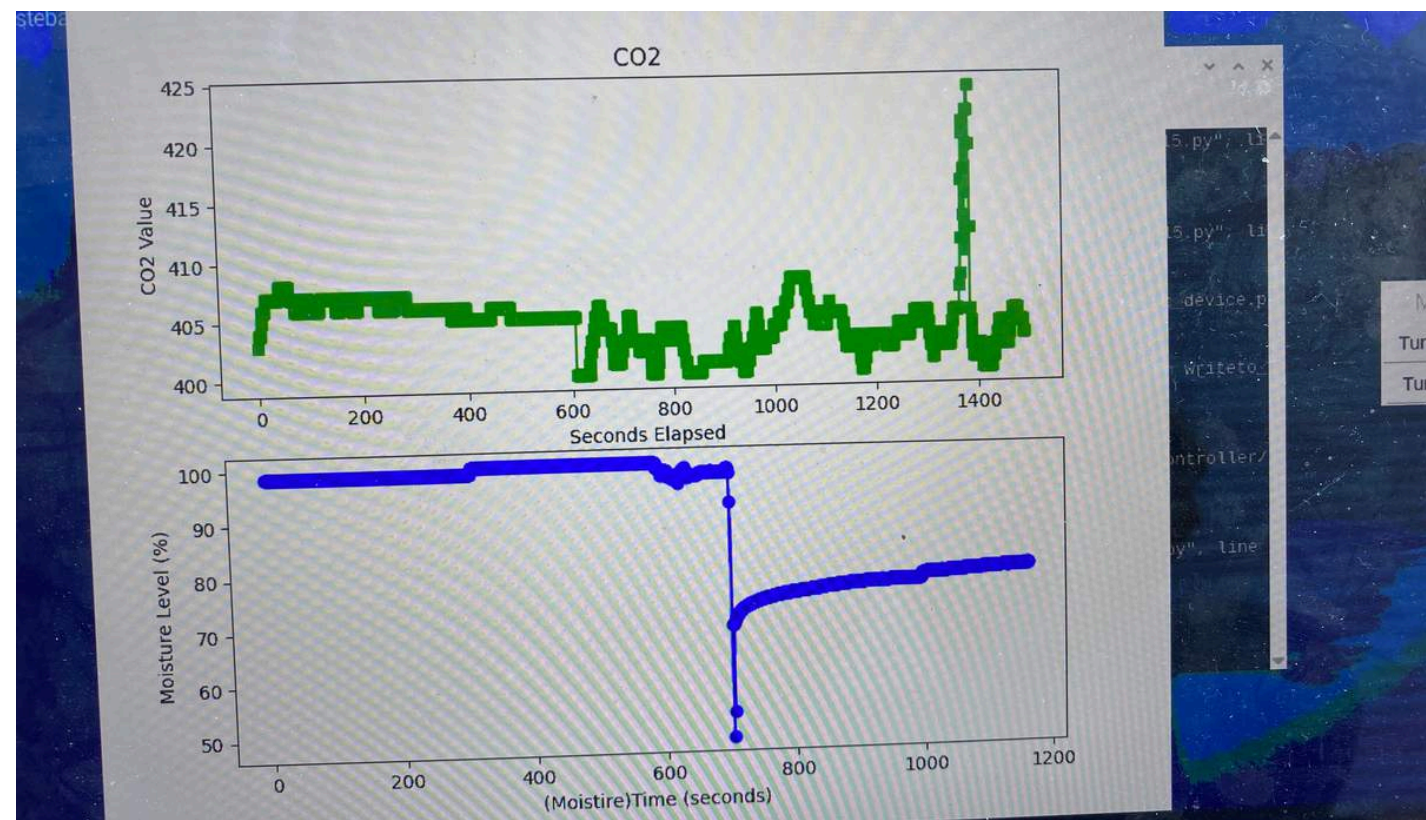- Fabrication techniques

Tools

- AutoCAD
- Finite element method (FEM)
- Laser cutting method

Learnings

- Mathematical modeling
- CAD design skills
- Problem-solving and optimization
- Research and analysis

Professional Projects

Detection of Co2 and moisture from soil.

Skills

- Python

Tools

- Raspberry Pi
- Co2, Moisture sensor
- ADC

Learnings

- Data analysis
- Sensor development
- Problem-solving
- On-time project execution

Professional Projects

Algae test using nitrate, pH, sodium, and ammonium sensors.

Skills

- Python

Tools

- Arduino UNO R3
- Nitrate, pH, sodium, ammonium sensor
- MATLAB

Learnings

- Data analysis
- Sensor development
- Problem-solving
- On-time project execution

Goals

- Secure Co-Op/Internship starting the summer of 2024 in Hardware Development or VLSI Design.

- Continuously enhance skills in programming languages, design tools, and protocols.

- Contribute to meaningful projects to gain hands-on experience and skill development.

- Network with industry professionals, pursue further education, and explore specialization areas for long-term career growth.