

# NILOTPAL SARKAR

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**Summary** — Seeking to contribute to projects by applying my expertise to solve complex problems and drive technological advancements.

## Skills

**Tools/Software** Vivado, Spice, FPGA

**Hardware** FPGA, Arduino, Raspberry Pi

**Languages** Python, C/C++ , HTML, CSS, MATLAB

**OS** Windows, Linux, Mac

**Development** Keil, Eclipse, VS Code, Flask, Git/Github

**Documentation** MS Office, LaTeX, Sublime Text

**Others** Pandas, NumPy, Scikit-learn, Seaborn, Plotly, Tableau, Keras

## Experience

**Indian Institute of Technology, Roorkee**

**Jun 2024 – Present**

*Project Intern*

### Synthesis and Design of RFID Antennas

- Analyze and optimize antenna parameters such as impedance matching, radiation pattern, gain, and bandwidth.
- Perform theoretical calculations to support antenna design and ensure alignment with project specifications.
- Analyze test data to evaluate antenna performance and identify areas for improvement.
- Document test procedures, results, and analyses to support project documentation and reporting.
- Assist in the preparation of research papers, presentations, and technical reports.

**National Institute of Technology, Silchar**

**Dec 2023 – April 2024**

*Wintern Research Intern (WRI)*

### Design and Simulation of High-Frequency Semiconductor Devices for 5G Applications

- Utilize software tools such as TCAD and HFSS to design and model high-frequency semiconductor devices.
- Analyze device parameters such as cutoff frequency, power handling, linearity, and noise figure to ensure compliance with 5G standards.
- Use of ANSYS HFSS (High-Frequency Structure Simulator) to model the electromagnetic behavior of the device packaging and interconnects.
- Assist in the preparation of technical presentations and documentation for internal and external stakeholders.

## Education

**Indian Institute of Information Technology**

*Bachelor of Technology in Electronics and Communications; GPA: 7.15*

*Courses: Statistical Signal Processing ; Information Theory and Coding ; Wireless Communications*

**Dr. Radhakrishnan School of Arts, Commerce and Science**

*Assam Higher Secondary Education Council*

*Science: Physics, Chemistry, Maths, Biology*

## Projects

**Sanzeevni/Health Web Application**

**Nov 2022 – Jan2023**

- Designing a user-friendly interface tailored to the target audience and enhance data through preprocessing and augmentation.
- Development and deploy predictive models to meet user needs and optimize performance in production.

**Distance Sensor**

**Sept 2023 – Nov 2023**

- Roles include hardware design, firmware development, and embedded systems engineering to create and optimize the distance sensor, along with data analysis and software development for accurate measurement and user interface.
- Integration, testing, quality assurance, and project management ensure the sensor's performance, reliability, and compliance with standards.

## Achievements

**Google Cloud — AMD**

**Apr 2023**

*Worked on a project and developed a web application. Won the institute level of Solving for Indian Hackathon.*

**IRCTC Essay Competition**

**Sept 2017**

*Won the Best Essay Award at State Level from Indian Railways at High School.*