



**RUDRAPRASAD DEBNATH**  
**M.Tech,Electrical Engineering**  
**Indian Institute of Technology Tirupati, India**  
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## Education Details

Program	Institute	Year	%/CGPA
B.Tech in Electronics and Communication Engineering	Kalyani Government Engineering College	2022	9.15
M.Tech RF and Microwave Engineering	Indian Institution of Technology Tirupati	2024	8.66
10th Board	Kalyani University Experimental High School	2016	91.25%
12th Board	Kalyani University Experimental High School	2018	89.4%

## Areas of Interest

- RF Circuit Design, Antennas, Microwave Tools (ADS and HFSS Software), Microwave Engineering, Active and Passive Elements design, Power Dividers, Couplers, PA Design, Matching Circuits, Digital Circuit Design, Analog Electronics
- Verilog Programming Basics, Computer Architecture, CPU Structure, Cache Memory

## Technical Proficiency

<b>Ansys HFSS</b>	: Electromagnetic Simulation Tool
<b>Keysight ADS</b>	: RF Circuit design and simulation software
<b>CST Microwave Studio</b>	: Electromagnetic Simulation Tool
<b>Digital Circuit Design</b>	: Designing various digital logic circuits, CPU Architecture, Cache Memory
<b>Microwave Engineering</b>	: Various microwave techniques and methodologies including Matching and other operations
<b>Programming Languages</b>	: Python, C, C++, Verilog Basics

## Experience

- Intern at IEEE AP-MTT SBC Society IIT Kharagpur Chapter**  
 (Guide : Mr. Manikant Sinha) [2 Months]
  - Worked on several feeding mechanisms of microstrip patch antenna.
- VLSI Training cum Summer Intern at Ardent Computech Pvt. Ltd.**  
 (Guide : Mr. Shouvik Sarkar) [3 Months]
  - Learnt VLSI design techniques and designed a 7 segment LED display in DSCH software.
- Content Development Intern at Sanfoundry**  
 (Guide : Ms. Angelin Sharmila) [6 months]
  - Worked as a MCQ developer

## Projects

- Designing a 2.4 GHz Power Amplifier using CGH40010 GaN HEMT Device**  
 (Guide : Prof. Dr. M V Kartikeyan) [4 Months]
  - Abstract :** A 2.4 GHz Power amplifier was designed using ADS software having a gain of 11 dB at 2.4 GHz.
- Designing a Hairpin Bandpass filter for X-band applications using CST Microwave Studio**  
 (Guide : Prof. Dr. M V Kartikeyan) [4 Months]
  - Abstract :** Designed a Band pass filter was designed in CST Microwave Studio using hairpin methodology for X-band applications.
- Stepped-Impedance Low pass microwave filter with maximally-flat response and cut-off frequency 2.5 GHz with more than -20 dB insertion loss at 4 GHz**  
 (Guide : Prof. Dr. M V Kartikeyan) [4 Months]
  - Abstract :** Designed a Low pass Microwave filter having the mentioned specifications
- Redesigning a 5G mmWave Magnetoelectric Wideband Dipole antenna fed by Substrate Integrated Coaxial Line (SICL)**  
 (Guide : Dr. Abhishek Kumar Jha) [1 Month]
  - Abstract :** Designed an antenna following a research paper and compared the results.

- BTech final year project: 2-bit Flash-type analog to digital converter with 250nm technology node

(Guide : Prof. Dr. Angsuman Ghosh)

[1 Year]

- **Abstract :** Designed a 2 bit ADC with existing 250 nm node in Tanner EDA Software.

- Speed Control of DC Motors using Arduino UNO

(Guide : Prof. Dr. Subhashis Maitra)

[6 Months]

- **Abstract :** Designed a system consisting of Arduino UNO and DC motors to control the speed of the motors according to the input from an IR Remote. This was the part of B.Tech mini project.

- MTech final year project - Designing a Rectenna for Ambient RF Energy Harvesting

(Guide : Dr. Abhishek Kumar Jha)

[Ongoing]

- **Abstract :** Designing a rectenna that contains a antenna followed by a rectifier to produce DC output voltage from ambient rf sources like WiFi, TV signals.

#### Relevant Courses

- ADVANCED ENGINEERING ELECTROMAGNETICS
- ADVANCED MICROWAVE ENGINEERING
- ANTENNA THEORY AND DESIGN
- RF TRANSCEIVER DESIGN
- RF-CAD LAB-BASED PROJECT
- ADVANCED MICROWAVE LABORATORY
- DIGITAL VLSI DESIGN
- ANALOG VLSI DESIGN
- RF-CAD AND CIRCUITS LABORATORY

#### Achievements

- GATE 2022 Qualified (AIR-1765 Score-521)
- NSTSE 2017 AIR-326 State Rank - 3
- WBJEE 2018 GMR - 1861

#### Extra Curricular activities

- Music Mixing and Mastering using FL Studio

#### Hobbies or Interests

- Playing Guitar, Learning Music, Watching Horror Movies, Reading Bengali Storybooks, Bengali Language