Akash Kumar

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Experience

- **Research Intern - NIT Patna** Onsite
  Plasma Antenna Design and Simulation *June 2024 - August 2024*
  - **Disc**: Developed and analyzed plasma antenna designs for enhanced stealth and radar applications.
  - **CST Software for Plasma Antennas**: Conducted electromagnetic analysis and optimization.
  - **Drude Model Simulation**: Evaluated antenna parameters (gain, bandwidth, etc.).
  - **Stealth and Radar Systems**: Optimized plasma antenna designs for stealth applications in radar and communication systems.

Education

- **Central University of Rajasthan** Ajmer
  Bachelor of Technology - Electronic and Communication *2021 - 2025*
  Courses: *Electronic Device and Circuit, Data Structures and Algorithms, Antenna and Wave Propagation, Controll System, Digital System Design, 8051 Microcontroller*
- **P N Anglo Sanskrit High School** Patna
  Senior Secondary *2017 - 2019*

Skills Summary

- **Languages**: C/C+, Python, DSA, HTML, CSS, JAVA Script, VHDL
- **Tools**: CST Studio Suit, KICAD, LTSpice, Multisim, Xilinx ISE, Cadence Tools, Keli, VS code
- **Others**: Advance Excel, Power-Point, Photoshop, Designing

Projects

- **Plasma Antenna Design and Analysis -**: Conducted simulations in CST software to compare the performance of traditional metal dipole antennas with plasma antennas, utilizing the Drude model for conductivity analysis. Focused on evaluating parameters such as return loss, gain, and impedance for enhanced antenna design.
- **Metasurface Antenna Design and Analysis -**: Developed a metasurface antenna capable of converting incident linear waves into circular and cross-polarized waves, analyzing key performance metrics such as Polarization Conversion Ratio (PCR), Axial Ratio (AR), and gain.
- **8051 Development Board Project -**: Developed an 8051 Development Board with temperature sensing, arithmetic operations, and display options (7-segment and 16x2 LCD), featuring I/O interfaces and a regulated power supply. Designed circuits in KiCAD and fabricated using screen printing, showcasing embedded systems and circuit design skills.
- **Astable Multivibrator Project -**: Designed an astable multivibrator circuit using KiCAD and fabricated it using the press-n-peel method, demonstrating skills in circuit design and PCB manufacturing techniques.

Honors and Awards

- Certificate of Research Internship
- One-day Workshop on "Design and Simulation of integrated Circuit Using Cadence EDA Tool" 13 sept. 2023
- Innovative Project Idea Presentation Competition 15 sept. 2022
- Third-Generation Metasurface Antenna Workshop
- Volunteered in a one-week Faculty Development Program (FDP) on MATLAB

Volunteer Experience

- Volunteered in a one-week Faculty Development Program (FDP) on MATLAB
- Volunteered at National Startup and Innovation 2.0, CURAJ. Assisted with logistics, participant support for 50 teams, and 200 participants.