ANANT KUMAR JAISWAL

2021uee0130@iitjammu.ac.in anant-kumar-jaiswal-akj9821

.

Education

Indian Institute of Technology, Jammu **December 2021 – Present**
Bachelor of Technology in Electrical Engineering *CGPA: 8.19/10*

Kendriya Vidyalaya, Ghaziabad **April 2009 – March 2021**
Class 10 Percentage: 97.20% *Class 12 Percentage: 95.40%*

Technical Skills

Languages: Python, C, C++, Arduino IDE
Software & Tools: CST Studios Suite, Advanced Design System(ADS), Fractory 3D Printing, ONSHAPE CAD Modelling, Laser Cutting, VHDL

Experience

MAPCON **2023**
Paper Presented

S. Tiwari, A. K. Jaiswal, A. K. Singh and A. Dubey, "Additively Manufactured Dielectric Meta- Lens Antenna for Millimeter-Wave 5G Base-Stations," 2023 IEEE Microwaves, Antennas, and Propagation Conference (MAPCON), Ahmedabad, India, 2023

This research paper presents a novel design and development of a compact 3D-printed Dielectric Meta-Lens (DML) antenna optimized for ultra-wideband operation in the millimeter-wave frequency range, specifically at 28 GHz. The DML structure is constructed using cylindrical dielectric unit cells arranged in a 20 × 20 array to achieve precise phase distribution on the lens aperture. Experimental assessments in an anechoic chamber demonstrate remarkable results, including a substantial 9 dB gain enhancement, a 34.4 percentage 3-dB gain bandwidth, and an impressive maximum aperture efficiency of 92 percentage. These findings highlight the DML antenna's potential for advancing millimeter-wave applications such as 5G communication systems and radar technology.

IEEE AP-MTT SBC IIT-KGP **May 2023 – July 2023**
Research Internship
I conducted an in-depth study of Parallel Series RLC circuits, analysing their magnitude and phase responses using MATLAB. Additionally, I honed my skills in Microstrip Stub analysis, utilising CST Microwave Studio to optimise microstrip stubs for RF applications. Much of my work involved exploring various Parametric Stub configurations and their impact on signal transmission and reflection characteristics. Furthermore, I delved into LC Lumped Matching Circuits, investigating their impedance-matching capabilities for efficient power transfer in RF systems. To expand my knowledge, I led a research analysis on "Bloch Wave Analysis and Dispersion Analysis of a Unit Cell with the Circular Ground," using numerical methods and analytical techniques to examine wave propagation behaviour. Throughout the internship, I actively participated in team meetings and brainstorming sessions, contributing innovative ideas and solutions. The experience enhanced my problem-solving skills, attention to detail, and ability to work effectively in a team-oriented environment, solidifying my passion for electrical engineering and RF analysis.

Tikering Lab IIT Jammu **2022**
Workshop
3D printing and Laser Cutting Workshop
I have participated in a hands-on workshop focused on 3D printing and laser cutting technologies. This immersive experience allowed me to gain practical knowledge in these cutting-edge manufacturing processes. During the workshop, I learned how to create digital designs suitable for 3D printing and laser cutting, optimizing them for precision and efficiency. I also acquired insights into material selection, prototyping, and post-processing techniques. This workshop has expanded my skillset, enabling me to harness the potential of 3D printing and laser cutting for various creative and functional applications.

Invention Factory by Maker Bhavan **2023**
Management Internship
As a Management Intern at Invention Factory by Maker Bhavan Foundation at Tinkering Lab IIT Jammu, I supported various projects, contributed to process improvement initiatives, analyzed data to provide insights, collaborated with cross-functional teams, and actively participated in training programs. I successfully implemented a new experience management system, resulting in increased efficiency and streamlined workflows.

Other Projects

Machine Learning Project **January 2024 - Present**
IIT Jammu
Analysis of EEG data for Motor Imagery Tasks Classification based on Brain Rhythms and Channel Optimization using LDA+PCA and Deep Learning Approach.

VHDL Designing of Washing Machine **December 2023**
IIT Jammu
The "VHDL Designing of Washing Machine" project employs VHDL programming to create a digital model of a washing machine control system. It includes finite state machines, sensor integration, user interface simulation, and fault tolerance mechanisms, providing a comprehensive and efficient representation of the appliance's functionality for educational and practical purposes.

Smart Waste Management **December 2022 - January 2023**
IIT Jammu
The "Smart Waste Management" project focuses on developing an intelligent system using cutting-edge technologies to optimize the collection and monitoring of waste. Incorporating IoT devices, sensors, and data analytics, the project aims to enhance efficiency, reduce environmental impact, and provide real-time insights for sustainable waste management practices.

Extra Curricular Activities

Secretary Of Sports Affairs **August 2023 – Present**
IIT Jammu
As Secretary of Sports Affairs at IIT Jammu for A.Y. 2023- 24, I led the management and promotion of sports activities, nurturing talent and securing funding for major events. My commitment to inclusivity fostered a vibrant sports culture, inspiring individuals of all backgrounds to lead active and healthy lives. Experienced Secretary of Sports Affairs with a proven track record in sports management and talent development. Adept at securing funding and organizing successful events.

Club Coordinator of Football Club **August 2022- July 2023**
IIT Jammu
I have served as Club Coordinator of Football Club of IIT Jammu in F.A. 2022-23 and organised many events. As a Club Coordinator for Football Club IIT Jammu, I successfully planned and executed various events, managed team schedules, coordinated with other clubs for friendly matches, and facilitated effective communication among team members. I actively engaged with club members to ensure their needs were met and provided support in administrative tasks.

NCC Senior Cadet **December 2021- July 2023**
NCC IIT Jammu
As a Senior Cadet in the NCC, I led and inspired fellow cadets, organized training sessions, and facilitated community outreach initiatives. I honed my leadership, teamwork, and communication skills while promoting discipline and service. NCC experience shaped my character and laid the foundation for my personal and professional growth.

Team Head: Security Team **March 2023**
Renao IIT Jammu
I have managed the security and ticketing of the biggest Cultural Fest of Jammu and Kashmir.

Team Head: Security Team **March 2023**
Technunctus IIT Jammu
I have managed the security and ticketing of the biggest Technical Fest of Jammu and Kashmir.

Student Coordinator at Convocation **October 2022**
IIT Jammu
I have organized events in Convocation 2022 of IIT Jammu with the team.

Volunteering

Unity Day **31st October 2022**
IIT Jammu
Student Volunteer on Unity Day 2022 Event

Bio-Science Day **November 2022**
IIT Jammu
Student Volunteer on Bio-Science Day Event