

MADHUR THAREJA

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EDUCATION

Birla Institute of Technology and Sciences Pilani, Pilani

August 2023 - 2027

B.Sc.(H) Computer Science, CGPA: **9.83**

Indian Institute of Technology, Chennai

September 2023 -2027

B.S. Electronic Systems, CGPA: **8.78**

Central Board of Secondary Education

Class 12: **83.20%**

EXPERIENCE

RaSoR- Ramanujan Society of Research - IIT Madras

October 2024 - Present

Deputy Secretary

Remote

- Exploring and developing the strategies of igniting the spark of research in every youth of India, through various activities, across entire IIT Madras- B.S. degree program, ensuring the quality research habits and innovative mindset are sheltered under an umbrella of the society.

iHub AWaDH, Indian Institute of Technology Ropar

August 2024 - Present

Young Professional

Ropar, Punjab

- Worked for skill training and development at iHub-AWaDH, hosting various workshops for over 1000+ students.
- Successfully completed summer school: **AI Vicharana Shala** by **Prof. Sudarshan Iyengar**
As a part of summer school created the projects given including Recommendation Systems, Estimation (Like German Tank in 2 or 3 Dimensions), PageRank using Power Iteration, Simulated Annealing, Data Compression.
- Developed the understanding of Computer Vision, Supervised Learning, Self Supervised Learning, Natural Language Processing.

Indian Institute of Technology Ropar

August 2024 - Present

Minor in AI - Teaching Assistance and Curriculum Designing

Ropar, Punjab

- Heading the project as a Lead from IIT Ropar
- Contributed as a Teaching Assistant, responsible for developing case study based problems out of concepts like Linear Regression, Markov Chains, Perceptron Learning Algorithm and many more topics aligned with Machine Learning.
- Used Manim like powerful tools to create various animations and presentations.
- Helping **Prof. Sudarshan Iyengar** design the curriculum innovatively as a part of research in the domain of Education Design.

NPTEL

July 2024 - October, 2024

Discrete Mathematics- Teaching Assistant

Remote

- Contributed as a Teaching Assistant, responsible for developing case study based problems, assignments out of various concepts around Discrete Mathematics and helping the students enrolled in the doubts faced by them.

PROJECTS AND LAB ACTIVITIES

Counter using ADALM-1000 kit

- Engineered a counter, using ADALM-1000 kit as a power source and using CD40106BE buffer, converted the input from the ADALM kit to a clock pulse, used a combination of Adder and Multiplexer (74 series ICs) to create a counter on breadboard to display 00-09 ;10-15 using a 7 segment display, as well a counter to count from 20-29 ;80-85

Gesture Detection

- Engineered a sophisticated gesture detection system incorporating hand raise and nod detection for multiple individuals, utilizing YOLOv8n and MediaPipe. This cutting-edge solution demonstrates advanced accuracy and real-time responsiveness.

Recommendation Prediction Model

- Architected a sophisticated friendship prediction model employing Matrix Factorization, attaining exceptional precision and markedly elevating the predictive acumen of social network analysis.

Chatbot for Construction related Questions

- Conceived and developed an intelligent chatbot as part of a collaborative project for a prestigious hackathon organized by the Civil Engineering Department of IIT Madras. This chatbot proficiently answers construction-related queries and meticulously tabulates the responses, demonstrating remarkable utility and efficiency.

TECHNICAL SKILLS

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|-------------------------|---|
| Software | Quartus Prime, LTSpice, MATLAB |
| Languages | C++, Python, Java, Bash Shell Scripting |
| Computer Fundamentals | Data Structures, Algorithms, Database Management System |
| Electronic Fundamentals | Digital Design, Electronic Circuits, Embedded C Programming |
| Machine Learning | Numpy, Pandas, Scikit-learn, Regression, Classification and Clustering Algorithms |
| Relevant Coursework | Electrical and Electronic Circuits, Ordinary Differential Equations |
| Soft Skills | Problem Solving, Self-learning, Presentation, Adaptability |

CO-CURRICULARS AND ACHIEVEMENTS

- Currently participating in eYantra, IIT Bombay, and developing Eco Mender Bot alongside a great team.
- Participated and won with **Rank 3** in the Hackathon organised by IIT Madras for Construction Related Question answering ChatBot.
- Represented Gurugram in Badminton in the State Championship held in Delhi
- Achieved **Bronze Medal** in Delhi region Science Quiz representing my school.