

# Rahul Lalwani

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Date of Birth: 27<sup>th</sup> March 2003

## EDUCATION

### Madhav Institute of Technology & Science

B. Tech in Artificial Intelligence and Machine Learning, **CPI: 9.0 CGPA**

Gwalior, India

Aug. 2021 – May 2025

### Kendriya Vidyalaya

Physics Chemistry Mathematics, **Percentage: 86%**

Nimach, India

Aug. 2018 – May 2020

## EXPERIENCE

### Linnaeus University

Research intern

Växjö, Sweden

Jan 2024 – Oct 2024

- Developed new architecture for kidney tumor diagnosis, achieved detection accuracy of 98%.
- Implemented nnUNet and DeepLab-UNet architectures, enhancing segmentation efficiency by 2%.
- Analyzed datasets such as Kits 19 for precise diagnosis and recommendations.

### IHUB DivyaSampark, IIT Roorkee

Hackathon Chanakya UG Fellowship

Roorkee, India

June 2023 – Oct 2023

- Created a Heart and Respiratory Sound Expert System using deep learning, for better diagnosis of Heart Patients, achieving 86% accuracy with 1D CNNs
- Trained CNN models on public datasets, reducing diagnostic errors by 5%.

## PROJECTS

### Chord Craft | *Stremlit, librosa*

- Built a convolutional neural network model to identify ukulele chords from songs using Python, Keras, and TensorFlow, achieving 98% accuracy.
- Processed datasets with librosa for audio analysis, implementing techniques to extract relevant features.

### Research Paper Sentence Categorizer | *NLP, TensorFlow Hub, PubMed 200k RCT dataset*

- Developed a machine learning model to classify sentences in medical research abstracts available in PubMed 200k RCT dataset into categories: Objective, Background, Methods, Results, Conclusion.
- Implemented the Universal Sentence Encoder for advanced feature extraction, Improving classification accuracy from a baseline of 72.18% to 80.14%

## PUBLICATIONS

- Contributed a chapter on "Heart and Respiratory Sound Expert System" to the book **Cardio-Respi Signal Processing** published by CRC Press, which is Scopus indexed.
- Published the research paper "Deepfake Detection: A Survey of Methods and Recent Advances" in the book **Innovative Approaches in Engineering and Management** (Proceedings of ISCMCTR-2024).

## ACHIEVEMENTS

- Secured **AIR 418 in GATE 2025 Data Analytics (DA)** and **AIR 421 in GATE 2024 DA Branch**.
- Achieved **2nd position** in India's largest techfest at **IIT Roorkee** in the Cloud Coverage Determination competition.

## TECHNICAL SKILLS

**Languages:** Python, C/C++, SQL, Java, HTML/CSS

**Developer Tools:** Git, Google Cloud Platform, Visual Studio, PyCharm, IntelliJ, Eclipse, Kaggle, Colab

**Libraries:** Tensorflow, librosa, Keras, Pytorch, pandas, NumPy, Matplotlib, Scikit-learn

## CERTIFICATIONS

- Pytorch for deep learning BootCamp, Andréi Neagoine, Udemy
- Tensorflow developer certificate Course, Andréi Neagoine, Udemy
- python to Interact with Operating System, Google, Coursera
- Java (Core) fundamentals SIP, MITS, Gwalior