

Ritul Agarwal

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EDUCATION

Amazon ML Summer School

Jul'24-Present

Cleared **AMLSS'24**, Machine Learning Sessions taken by Amazon Scientists

Netaji Subhas University Of Technology (CGPA : 8.35)

Jan'22-May'25

Secured **99.4 %ile(JEE Mains)**, B.Tech in Computer Science with Data Science

Ryan International School, New Delhi

2009-2021

XII - 95% , X - 97.5%

SKILLS

Programming Languages: C++ (Data Structures & Algorithms), Python, MATLAB

Core Subjects: DSA, Machine Learning, Data Science, OOPS, Operating Systems, DBMS, Computer Networks

Python Modules: TensorFlow, PyTorch, Keras, Django (BackEnd), OpenCV, TorchAudio, Pandas, Numpy

Others: Linux, Git, Docker, Tableau, Power BI, HTML, CSS, SQL

Soft Skills: Teamwork, Presentation, Documentation, Communication

INTERNSHIPS & TRAINING

Project Developer (University Of Oxford) (ML, NLP, LLMs, Fine Tuning)

May'24-Jul'24

- Worked on Parameter efficient Fine Tuning of LLMs(like GPTs) using heavy models like Transformers.
- Used it for text generation on smaller datasets through Low Rank Adaptation Matrices & different networks.

Research Intern (Cross Caps Laboratory) (DL, ML, Generative AI, Audio)

May'23 - Sep'23

- Generated parallel audio corpus dataset, built the Diffusion model pipeline for training using Torch, Worked on cross lingual audio translation through speech, and explored variations in diffusion models for better Speech2Speech performance.

Undergraduate RA (NSUT - CSE Dept.) (Image Processing, Optimisation Algorithms)

Mar'23 - May'23

- Achieved 3% accuracy improvement in face deblurring techniques in Matlab. Researching on better optimising versions of Nature Inspired Optimisation Algorithms like GROM and SCSO.

PROJECTS

Match Player Analyser (OpenCV, Keras, Video analysis)

Source Code

- Analyzing sports matches on a player-by-player basis to provide insights on player performance.
- Coded the complete pipeline from player and shuttle/ball keypoints, human pose extraction, concatenating the feature vectors, to provide it as input to segmentation models that indicate the vicinal areas of shuttle/ball, and assessing player's position with respect to that.

Neural Audio Compression (TorchAudio, Keras, Librosa)

Source Code

- Converting human speech into numbers that can be interpreted by the deaf through an actuator-embedded band.
- Developed a custom deep learning Convolutional Autoencoder model using Keras, using spectrograms of the input and extract numbers that can act as signals for the motors, guiding the process from data preprocessing to testing.

ACHIEVEMENTS

Team Leader of Team Seahawks, won internal Hackathon for SIH-2023

2023

Submitted Research paper at IEEE Link

2023

Reinforcement Learning (IIT-M course) Among the top 15 students enrolled all over India

2023

99.4 percentile (All India Rank 6452 out of 1.2 Million candidates)

JEE Mains 2021

Excellence in Academics Award (for 5 consecutive years) awarded by Ryan International School

2021

Prabhakar Degree B.A in Indian Classical Music & Bharatanatyam dance from Sanheet Samiti

2020

POSITION OF RESPONSIBILITY

Software/AI Lead At Team Kalpana (The Space Society of NSUT) for ISC-2024

2023