

Education

International Institute of Information Technology

Master of Science by Research in Computer Science and Engineering — **CGPA: 9.2**

July 2022 – Present

Hyderabad, Telangana

Manipal Institute of Technology

Bachelor of Technology in Computer Science and Engineering

July 2017 – July 2021

Manipal, Karnataka

Experience

International Institute of Information Technology

Research Fellow, Healthcare & Artificial Intelligence (HAI)

June 2021 – Present

Hyderabad, Telangana

- Worked on improving the interpretability of classification models for disease diagnostics using self-supervision within the purview of Chest X-rays. Advised by [Dr. U. Deva Priyakumar](#).
- Achieved downstream multi-label classification scores comparable to current supervised SoTA and superior performance in terms of Grad-CAM localization. **Published and presented at IJCNN 2023.** [\[Publication Link\]](#)
- Ranked 3rd in the X-ray Projectomic Reconstruction Challenge hosted by Harvard Medical School. Developed an Attention-inspired U-Net to predict axon trajectories in volumetric XNH images. **Presented at ISBI 2023.**

BlackRock

Data Engineering Intern

Jan. 2021 – July 2021

Gurgaon, Haryana

- **Developed a real-time ML pipeline** from pre-processing to deployment to predict trade settlement failure
- Experimented with models like XGBoost and SVM and achieved a fail-capture rate of 84% on large, imbalanced datasets

IOP Technologies

Machine Learning Intern

June 2020 – Aug. 2020

Remote

- Trained and integrated an Automatic Speech Recognition model for a video-conferencing platform
- **Improved WER by 30%** over benchmark with custom fine-tuned models for better generalization to the Indian Accent using Indic Speech data. Implemented RESTful APIs as Linux systemd processes, improving TAT by 50%

Projects

Automated Detection and Classification of Renal Lithiasis in Computed Tomography Scans

- Implemented a modified U-Net with dense skip connections to generate localization maps for kidney stones
- Model achieved an AUC of 0.83 and an accuracy of 86% while predicting stone composition using DICOM voxel values
- This work won the [Best Poster Award at USICON 2021](#)

AI Applications in Ophthalmology Influencing Clinical Practice

[\[Publication Link\]](#)

- Evaluated studies related to retinal diseases like Diabetic Retinopathy, Glaucoma, and Macular Degeneration

AutoSub | Python, scikit-learn, Mozilla DeepSpeech

[\[Merged into Mozilla's GitHub\]](#)

- Developed a CLI application to generate subtitles for video files on-device automatically
- Implemented MFCC features to segment audio on non-speech segments and perform speech recognition
- Improved performance using an external scorer (language model) and added support for GPU-based inference

from scratch | Python

- minimal implementations from scratch of the following
- baby86: a minimal x86 "bootloader" to print stuff on screen
- NumPy-only versions of NNs, CNNs, and the torch API

Technical Skills & Certifications

Languages: Python, C/C++, MySQL, Java, Bash

Libraries & Tools: PyTorch, NumPy, scikit-learn, TensorFlow, Git, Linux, VS Code, L^AT_EX, slurm

Certifications: Stanford - ML, CS231n | deeplearning.ai - Neural Networks and Deep Learning, AI for Medicine

Leadership / Extracurricular

- Started a fitness club and coached 50+ students on nutrition and workout routines
- Led the social media team for my university's cultural and technological fests
- Member of Student Parliament at IIIT Hyderabad