Alli Khadga Jyoth

Roll No.:M23CSA003
Artificial Intelligence
Computer Science and Engineering
Indian Institute Of Technology, Jodhpur

+91-9701369819
m23csa003@iitj.ac.in
khadgajyothalli@gmail.com
github.com/KhadgaA
linkedin.com/in/khadga-a

Education

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
M.Tech. (AI)	Indian Institute of Technology, Jodhpur	8.43	2023-Present
B.S (Data Science & Engg.)	Indian Institute of Science Education and Research, Bhopal	8.59	2019-2023
Senior Secondary	TSBIE Board	98.3%	2019
Secondary	TSBSE Board	10.0	2017

Projects

- **Multilingual Speaker Identification and Verification System**
  Developing Robust Audio Processing Models for Multi-Speaker Recognition Across Indian Languages Github
  – Led a team project developing a multilingual speaker recognition system, achieving up to 98% accuracy in identification and a low Equal Error Rate (EER) of 0.0176 % in verification across English, Hindi, Telugu, Bengali, and Marathi languages.
  – Created and analyzed a diverse multilingual audio dataset from 20 participants, incorporating code-switching scenarios, and implemented classical speech processing techniques with machine learning models to achieve high accuracy in speaker recognition tasks.
  – **Tools & technologies used**: Python, numpy, Jupyter notebook, Scikit-Learn, librosa, spafe
- **VQ-VAE and Transformer-based Image Synthesis for Skin Lesion Analysis**
  Deep Learning Approach for Medical Image Generation and Reconstruction Github
  – Implemented a Vector-Quantized Variational Autoencoder (VQ-VAE) for skin lesion image synthesis, achieving a PSNR value of 12.7 and successfully preserving key features and details in reconstructed images.
  – Developed and trained a Transformer-based Auto Regressive Model for 600,000 iterations, featuring 6 attention heads and 6 layers, to generate diverse and realistic skin lesion images from the learned latent space representations.
  – **Tools & technologies used**: Python, numpy, Jupyter notebook, Pytorch, WandB
- **Advanced Eye Disease Detection using Knowledge Distillation and Masked Vision Transformers**
  Enhancing Model Efficiency and Accuracy with Sample-Wise Distillation Loss Github
  – Developed an advanced eye disease detection system using Knowledge Distillation, achieving 84.4% accuracy with a Resnet18 student model, approaching the 87.5% accuracy of the Resnet50 teacher model on the ODIR dataset of 7,000 images across 8 disease categories.
  – Implemented a novel Sample-Wise Distillation (SWD) loss function and integrated a Masked Vision Transformer (MViT) as a co-teacher, leading to a substantial reduction in model loss from 0.73 to 0.63, highlighting enhanced model confidence and superior performance compared to standard Knowledge Distillation techniques.
  – **Tools & technologies used**: Python, numpy, Jupyter notebook, Pytorch,

Key Courses Taken

- Deep Learning, Computer Vision, Speech Understanding, Dependable AI, ML & DL Ops, Starting New Venture

Technical Skills

- **Programming:** Python, C, SQL
- **Tools & OS:** Jupyter Notebook, Google Colab, Github, Linux, Git, WandB
- **Libraries/Frameworks:** Pandas, Numpy, scikit-learn, Pytorch, Keras, OpenCV

Positions of Responsibility

- **Teaching Assistant:** CSP2020 - Human-Machine Interaction *Jan 2024 - May 2024*
- **Teaching Assistant:** CSL2010 - Intro to Machine Learning *Aug 2023 - Dec 2023*

Achievements

- **Department Topper:** Achieved Departmental Rank 2 in M.Tech AI programme *2024*
- **MHRD Scholarship:** Received Central Government Merit Scholarship in Under Graduation *2019*

Certifications

- HackerRank Certification in SQL(Intermediate).
- freeCodeCamp Data Analysis with Python
- freeCodeCamp Machine Learning with Python