

Sai Pavan Tadem

Portfolio

Github

Google Scholar

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EDUCATION

- **Indian Institute Of Technology-IIT Kharagpur** Kharagpur, India
Master of Technology -Medical Imaging and Informatics ; GPA: 8.00 July 2021 - June 2023
Courses: Biostatistics,Neural Networks and applications,Digital Image Processing,Computer Vision,Pattern recognition and Machine Intelligence,Design and Analysis of Algorithms
- **Malla Reddy Engineering College-Jawaharlal Nehru Technological University** Hyderabad, India
Bachelor of Technology - Electronics and communications Engineering; GPA: 8.23 July 2015 - June 2019
Courses: Probability and Statistics,Data Structures, Digital signal processing,Communication Systems

SKILLS SUMMARY

- **Languages:** : Python , MATLAB , R
- **Frameworks:** : PyTorch, OpenCV, scikit-learn, MONAI , Flask ,Gradio
- **Tools:** : GIT, Docker, Flask, Postman
- **Platforms:** : Windows, Ubuntu, AWS Cloud, Heroku

EXPERIENCE

- **Teaching Assistant** IIT Kharagpur
MM61511-Biostatistics | [Proof document](#) | [GitHub](#) (Autumn 22-23)
 - Responsible for taking tutorials and assignments in Python programming for a Lab of 45 students
- **Teaching Assistant** IIT Kharagpur
CS60013-Programming and Datastructures | [Proof document](#) | [GitHub](#) (Autumn 22-23)
 - Responsible for taking class tutorials and creating assignments in Python programming

PUBLICATIONS

- **[Sai Pavan Tadem] Traditional methods in Edge, Corner and Boundary detection** | [Paper](#) arXiv Aug'2022:
This review paper explains the edge, corner, and boundary detection algorithms, applications, and their limitations. It was submitted under the course subject of **Computer Vision** taught by **Prof.Debashis Sen** at IIT Kharagpur.
- **[Sai Pavan Tadem] Analysis of CycleGAN with three different datasets** | [Paper](#) arXiv Aug'2022:
The original publication, "Unpaired Image-to-Image Translation using Cycle-Consistent Adversarial Networks," served as the inspiration for this paper. Developed, trained, performance evaluated with three datasets and submitted this term project paper under the course subject **Neural Networks and Applications** taught by **Prof.Debashis Sen** at IIT Kharagpur.

RESEARCH PROJECTS

- **Accelerating MR Imaging with AI based Reconstruction** |May'22-Ongoing :
The aim of this project is to make MRI scans faster with AI-based reconstruction from undersampled data.Currently working with **Transformers** on the Facebook fastMRI dataset with the [Vision, Image, and Perception Group](#) at IIT Kharagpur under the joint supervision of [Prof. Debashis Sen](#) dept.EECE and [Prof.Subhamoy Mandal](#) dept.SMST.

ACADAMIC PROJECTS

- **White Blood Cell Classification using Image Processing** | [To Know More:](#)
 - Using image processing with MATLAB, developed an algorithm to classify the four classes of white blood cells.
 - The WBC dataset is collected from kaggle. class: monocytes, lymphocytes, neutrophils, and eosinophils.
 - Extracted features using local binary patterns and a cosine similarity rule are used to classify these features.
 - The algorithm classified lymphocytes with 88.5 percent accuracy and monocytes with 81 percent accuracy.

Tech Stack: Local Binary Patterns,MATLAB

- **AI based pneumonia detection using adaptive contrast enhancement and data augmentation** |[To Know More:](#)
 - Invastigated the effect of data preprocessing(augumentation & adaptive contrast enhancement) for pnemonia detection.
 - The VGG16 deep learning model is trained with and without data preprocessing using the Chest X-ray Kaggle dataset.
 - Proved that AI models can do better feature learning even with small-sized datasets with preprocessing.

Tech Stack : Python, PyTorch ,OpenCV

- **AI based Tele-Pathology** | [YouTube](#):

- Designed, developed, and deployed a fully functional web application for AI based pathology classification and segmentation.
- Features: Registration, login, pathology sample submission, Emergency alert section from pathologist, Report generation.

Tech Stack :Python, PyTorch, Git, Heroku Cloud , Azure, Flask , Gradio

COURSEWORK INFORMATION

- [Computer Vision](#) Pattern Recognition and Machine Intelligence in Medicine [Neural Networks and Applications](#)
- Bio Statistics Digital Image Processing and Applications [Design and Analysis of Algorithms](#) Data Analytics

EXTRA CURRICULAR ACTIVITIES

- **Indian Symposium on Machine Learning-IndoML-2022 (Attending)** IIT Gandhinagar
My research work is appreciated and provided an opportunity to do the [poster presentation](#). December-2022
- **Cambridge Center for AI in Medicine-CCAIM | Summer School** Online
The panel discussed a wide range of healthcare issues and how AI is assisting in achieving state-of-the-art. Sep'23