

# Sai Pavan Tadem

Portfolio

Github

Google Scholar

LinkedIn

Email: [saipavanthadem@kgpian.iitkgp.ac.in](mailto:saipavanthadem@kgpian.iitkgp.ac.in)

Mobile: +91-996-3134-580

## 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** 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** IIT Gandhinagar  
*Selected to receive a financial grant to attend the IndoML-2022 (about to attend)* 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
- **Sensors and Robotics | Osmania University | Workshop** Hyderabad, India  
*Key topics : Brief discussion about sensors ,cyber-physical systems and applications of drones* November -2019
- **Future of Blockchain Technology| JNTUH | Workshop** Hyderabad, India  
*Key topics : Fundamentals of blockchain, concept of Web 3.0 and integration of blockchain with AI.* July-2019