NARASARAOPETA ENGINEERING COLLEGE AUTONOMOUS

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

2025-2026

Batch Number	BG7
Team Members	SK.Sumiya(22471A05C8) P.Karishma(22471A05B7) K.Sowjanya(22471A0577)
Guide	M.Koteswara Rao Mtech
Title	Multi-Class Kidney Abnormalities Detecting Novel System Through Computed Tomography
Domain/Technology	Deep Learning
Base Paper Link	https://ieeexplore.ieee.org/document/10384368
Dataset Link	https://www.kaggle.com/datasets/nazmul0087/ct-kidney-dataset-normal-cyst-tumor-and-stone
Software Requirements	Browser: Any latest browser (e.g., Google Chrome, Mozilla Firefox) Operating System: Windows 7 Server or later / Ubuntu 18.04 or later
Hardware Requirements	SystemType: Intel Core i5 or above RAM: 8 GB Number of cores:4 Number of Threads: 4
Abstract	Accurate kidney abnormality detection via CT imaging faces challenges like visual similarity across conditions and limited annotated data. This study proposes a YOLOv8-based deep learning model to classify kidney CT scans into normal, cyst, tumor, and stone categories. Using a publicly available dataset with 12,446 images, the model achieves 82.52% accuracy. Extensive preprocessing and expert validation ensure data quality, while model design balances speed and precision. Results show significant potential for real-time diagnostic support and improved clinical workflow in kidney abnormality classification.

Signature of the student(s) **Signature of the Guide** **Signature of the project coordinator**