Notice for the PhD Viva-Voce Examination

Ms Mino George (Registration Number: 1840071), PhD scholar at the School of Sciences, CHRIST (Deemed to be University), Bangalore will defend her PhD thesis at the public viva-voce examination on Friday, 14 June 2024 at 12.00 pm in Room No. 044, Ground Floor, R & D Block, CHRIST (Deemed to be University), Bengaluru - 560029.

Title of the Thesis	:	**Prognosis of Kidney Disease on Ultrasound Images Using Machine Learning**
Discipline	:	**Computer Science**
External Examiner (Outside Karnataka)	:	**Dr C Shoba Bindu** Professor Department of Computer Science and Engineering JNTUA College of Engineering Ananthapuramu Andhra Pradesh - 515002
External Examiner (Within Karnataka)	:	**Dr S M Dilip Kumar** Professor Department of Computer Science and Engineering University Visvesvaraya College of Engineering K R Circle, Bengaluru - 560001 Karnataka
Supervisor	:	**Dr Anita H B** Associate Professor Department of Computer Science School of Sciences CHRIST (Deemed to be University) Bengaluru – 560029 Karnataka

The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva-voce examination.

Place: Bengaluru

Date: 06 June 2024

Registrar

ABSTRACT

Kidney diseases can affect the ability to clean the blood, filter extra water out of your blood. The kidneys failure will affect the control over blood pressure and sugar level. When your kidneys are damaged, waste products and fluid can build up in the body. This damages the kidney function, can get worse over time. The detection of kidney abnormalities at their early stages helps to avoid the impairment of kidney. The US imaging is considered as preliminary diagnostic tool in finding various kidney diseases in the clinical imaging field. This is one of the commonly used imaging modalities due to the inexpensiveness and non-ionization nature. In this research, machine learning techniques are used to detect abnormality in kidney.

The pre-processing phase include cropping and noise removal. Further, the features are extracted for the classification of abnormal kidney images. To segment the stone and cyst, an adaptive gamma correction technique is applied. An enhanced gamma value calculation method is proposed in this research. The mean and standard deviation are used to calculate the gamma value of the image. The results of the segmented cysts and stones are validated by a radiologist. The proposed framework can be used to assist the doctors in diagnosing kidney patients.

Keywords: Image Processing, Kidney diseases, Segmentation, Features Extraction, Convolutional Neural Network, Gamma Correction, SVM.

Publications:
1. **Mino George**, Anita H. B. "Entropy Based Segmentation Model for Kidney Stone and Cyst using Ultrasound Image" International Journal of Computing, 2023.
2. **George, Mino**, and H. B. Anita. "Analysis of kidney ultrasound images using deep learning and machine learning techniques: A review." Pervasive Computing and Social Networking, Springer (2022): 183-199.
3. **Mino George**, Anita H.B, Kidney Abnormality Detection and Classification Using CNN-based Feature Extraction", 2022 4th International Conference on Circuits, Control, Communication and Computing (I4C), IEEE, 2023