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Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

School of Computer Science Engineering and Information Systems

Fall Semester 2024-25 MTech (Software Engineering)

SWE1011 – Soft Computing – F1+TF1

Project Based Component

REVIEW - 1

THYROID NODULES ANALYSIS THROUGH ULTRASOUND IMAGES USING DEEP LEARNING

Team Members:

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Abstract:

Thyroid nodules, commonly found in clinical practice, require accurate differentiation between benign and malignant forms for proper treatment. Manual ultrasound interpretation can be error-prone, highlighting the need for an automated, reliable solution. This project develops a deep learning model, specifically a convolutional neural network (CNN), to analyze ultrasound images and classify thyroid nodules as benign or malignant. Utilizing a large, labeled dataset, the model is trained with image preprocessing and augmentation techniques to improve accuracy. The model's performance is assessed using metrics like accuracy, sensitivity, and specificity, aiming to enhance diagnostic efficiency and patient care.