# DAYANANDA SAGAR COLLEGE OF ENGINEERING

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

# Left Ventricle Automatic Segmentation Using ELU-Net Architecture


**Batch No :21**

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## ABSTRACT


In cardiac MRI, analysis of left ventricle is an initially quantified method to diagnose cardiac contractile function. A detailed understanding of the cardiac contractility is essential to diagnose, and treat heart-related disorders. Therefore, segmentation of LV plays a crucial role in the prevention of the heart attacks, which is a common cause of death. Manual segmentation is a time-consuming job for both cardiologists.Also, it can lead to a high number of false positives due to human errors, such as fatigue and distractions. Therefore, a computer-aided diagnosis system is needed, which can assist to accurately segment LV boundaries in cardiac MRI.


## PROPOSED SOLUTION

Our innovative solution leverages the power of ELU-Net architecture for accurate segmentation of the left ventricle in medical images. By training the network on a large dataset of annotated cardiac images, we can teach it to accurately identify and delineate the left ventricle, even in the presence of noise and variations in image quality. This innovative approach not only enhances the efficiency and accuracy of left ventricle segmentation but also holds great potential for aiding in the diagnosis and treatment of cardiovascular diseases. With further research and validation, this innovative approach could contribute to advancing medical imaging technologies and improving patient care.

## SYSTEM ARCHITECTURE

1.Pre-Processing

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2.Feature Extraction

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3.ELU-Net Architecture

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4.Evaluation

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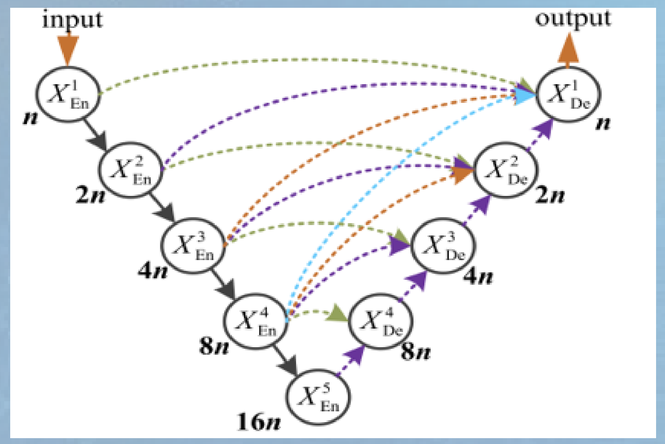
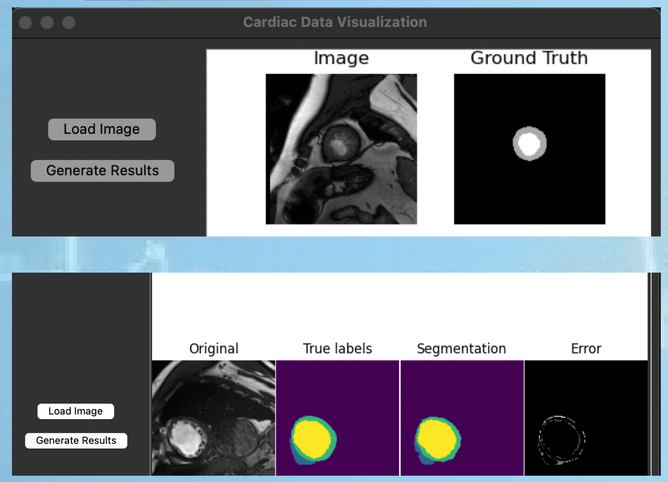
5.Post-Processing




## RESULTS




## CONCLUSION

In conclusion, an optimized approach for automatic left ventricle detection and segmentation can improve the accuracy and efficiency of cardiac imaging analysis. Such an approach should be able to accurately detect and segment the left ventricle, be fully automated, generalize to different patient populations and imaging modalities, and be thoroughly validated. Achieving these objectives can provide clinicians with reliable and consistent measurements of left ventricular function, which can be used for diagnosis, treatment planning, and monitoring of cardiac diseases.