



**NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)**  
**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**2024-2025**

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|------------------------------|---|
| <b>Batch Number</b>          | BG-12   |
| <b>Team Members</b>          | V.Bhavana (22471A05D7)<br>SK.M.Azhar (22471A05D2)<br>Sk.Afreen Neha (22471A05C7)  |
| <b>Guide</b>                 | P.Gayathri  |
| <b>Title</b>                 | Ischemic Heart Disease Prognosis: A Hybrid Residual Attention-Enhanced LSTM Model   |
| <b>Domain/Technology</b>     | DEEP LEARNING   |
| <b>Base Paper Link</b>       | <a href="https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&amp;arnumber=10819394">https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&amp;arnumber=10819394</a>   |
| <b>Dataset Link</b>          | <a href="https://www.kaggle.com/datasets/cherngs/heart-disease-cleveland-uci?resource=download">https://www.kaggle.com/datasets/cherngs/heart-disease-cleveland-uci?resource=download</a>   |
| <b>Software Requirements</b> | Browser: Any latest browser like Chrome<br>Operating System: Windows 7 Server or later<br>Python (COLAB)  |
| <b>Hardware Requirements</b> | SystemType: Intel Core i5 or above<br>RAM: 8 GB<br>Number of cores:5<br>Number of Threads: 4  |
| <b>Abstract</b>              | This research introduces a hybrid deep learning model—Hybrid Residual Attention-Enhanced LSTM (HRAE-LSTM)—to improve Ischemic Heart Disease (IHD) prediction. The model uses fuzzy-based imputation and feature normalization on the UCI Heart Disease dataset to ensure data quality. By integrating residual connections and attention mechanisms with LSTM, it effectively captures complex patterns in cardiovascular data. The proposed model achieves a high prediction accuracy of 97.71%, outperforming conventional machine learning and deep learning methods, and demonstrates strong potential for clinical decision support. |

Signature of the student(s)

Signature of the Guide

Signature of the project coordinator