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International Conference on

"Intelligent Computing and Communication Technology (ICCT - 2024)"

September 27, 2024

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This is to Certify that Prof. / Dr. / Mr. / Ms. JAYAPRAKASH .R

has presented a paper titled A Hybrid Bidirectional LSTM with Enhanced Vision Transformer Approach for glaucoma disease Pre

written by author (s)

..... REKATHY .P , Dr. JAYAPRAKASH .R

in the International Conference on "Intelligent Computing and Communication Technology (ICCT - 2024)"

jointly organized by PG & Research Department of Computer Science and ICT Academy held on September 27, 2024.

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A HYBRID BIDIRECTIONAL LSTM WITH ENHANCED VISION TRANSFORMER APPROACH FOR GLAUCOMA DISEASE PREDICTION

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Abstract

Glaucoma, a leading cause of permanent vision loss globally, can be effectively managed with early detection, making timely diagnosis crucial for preserving sight. The paper proposed a hybrid model combining Bidirectional Long Short-Term Memory (BiLSTM) and Enhanced Vision Transformer (EViT) for automated glaucoma detection in fundus images. The BiLSTM captures temporal dependencies, while the EViT leverages spatial relationships, improving performance. The specific methodology consists of the following steps: (1) Image Acquisition; (2) Image preprocessing with data augmentation; (3) Hybrid BiLSTM with Enhanced Vision Transformer Learning for Glaucoma Disease Prediction; (4) experimental evaluations and comparisons with conventional deep learning models to validate the efficacy and utility of the proposed hybrid model for Glaucoma prediction. The experimental results are evaluated on tested on the real-world RIM-ONE DL image dataset, achieving [accuracy, precision, recall, F1-score] measures.

Key words: *Data augmentation, Glaucoma prediction, LSTM, BiLSTM, Vision Transform.*