Blood Detection Network: Enhanced CCTV Blood Detection with Multiscale Attention and InceptionV3 for Real-Time Surveillance

This repository contains the source code and documentation for the paper titled "Enhanced CCTV Blood Detection with Multiscale Attention and InceptionV3 for Real-Time Surveillance," submitted to Springer Nature for possible publication. The project introduces an advanced blood detection system using deep learning, specifically incorporating InceptionV3 and multiscale attention mechanisms for improved accuracy and efficiency in real-time surveillance scenarios.

1. Setup and Dependencies

To run this project, install the necessary dependencies. The required libraries include TensorFlow 2.9.0, along with essential modules like Opencv, NumPy, and PIL.

2. Training the Model

The model can be trained using the provided Jupiter notebook. File Name: proposed_model.ipynb

Compressed Version is used in our experimentation:
Attention_mechanism_with_InceptionV3_github_compress_de.ipynb (optimized for efficiency)

Simply run the notebook in a Jupiter environment to train the model using the provided dataset.

3. Dataset

Our training and testing datasets follow similar structures to previous methods. You can download the dataset from the following link: https://drive.google.com/file/d/15C9RU6sqTufVoCLU_ww4-0aSViZzpbn2/view?usp=drive_link. Ensure that the dataset is placed in the appropriate directory before running the training scripts.

4. Contact & Support

For any questions, guidance, or technical issues, feel free to reach out: Email: irshadkhalil@gachon.ac.kr

Your feedback and contributions are welcome to enhance the project further.