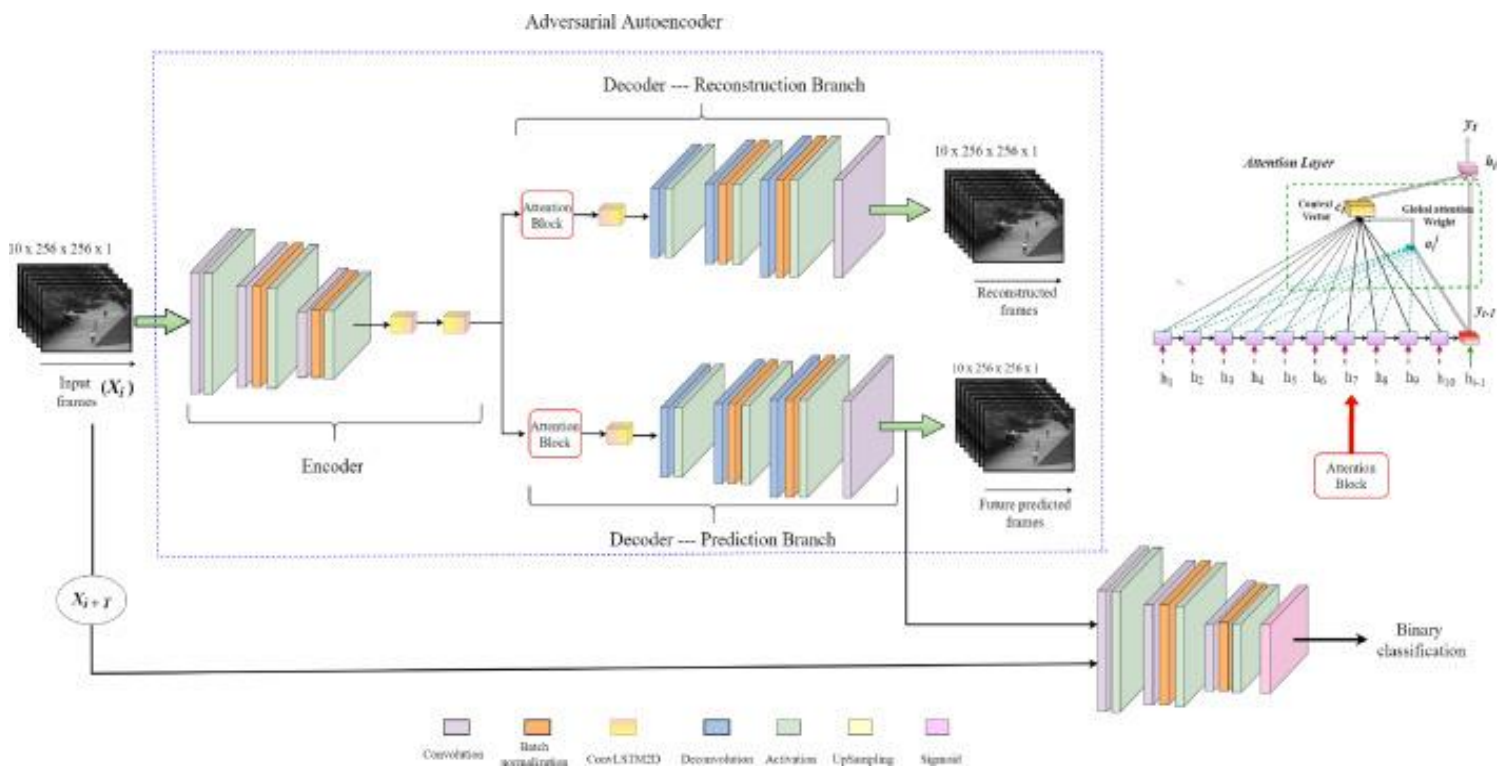


A3N: Attention-based adversarial autoencoder network for detecting anomalies in video sequence

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This paper presents a novel attention-based adversarial autoencoder network (A3N) that consists of a two-stream decoder to detect abnormal events in video sequences. The first stream of the decoder is a reconstructive model responsible for recreating the input frame sequence. However, the second stream is a future predictive model used to predict the future frame sequence through adversarial learning. A global attention mechanism is employed at the decoder side that helps to decode the encoded sequences effectively. The training of A3N is carried out on normal video data. The attention-based reconstructive model is used during the inference stage to compute the anomaly score. A3N delivers a considerable average speed of 0.0227 s (44 fps) for detecting anomalies in the testing phase on used datasets. Several experiments and ablation analyses have been performed on UCSD Pedestrian, CUHK Avenue and ShanghaiTech datasets to validate the efficiency of the proposed model.



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