

Postgraduate Seminar Series

Venue: Graduate Seminar Room

Date & Time: August 01, 2026 at 2:30 PM

Speaker Information

Mosaddek Hossain (Std No. 1018052104) is a part time M.Sc. student in the department of CSE, BUET. He completed his undergraduate studies from Military Institute of Science and Technology (MIST) in 2018. His research interest lies in the fields of Information Security, Machine Learning, and Deep Learning. He is currently doing his postgraduate thesis under the supervision of Professor Dr. Md. Shohrab Hossain. He will be speaking about his ongoing research in this M. Sc. Engineering Thesis Pre-defense Seminar.



Enhancing Android Malware Detection Using Feature Fusion: A Two-Stage Approach

In the field of Android malware detection, developing efficient strategies to identify both common and emerging malware remains a significant challenge. This work introduces a two-stage classification approach that utilizes feature fusion to improve malware detection performance. Our method combines the classification strength of a deep neural network and a tree-based classifier in a two-stage framework. In the first stage, the deep neural network is trained to generate deep learned features and prediction probabilities, which are fused with domain specific raw features to construct the input for the second-stage classifier. A key strategy in our feature engineering technique is the incorporation of prediction probabilities from the deep neural network into the feature vector. These probabilities serve a dual purpose: as a class prior to provide additional context for classification and as a quality metric to assess the reliability of the generated deep features. We evaluate the proposed approach on contemporary and legacy Android malware datasets. Our results demonstrate that proposed feature fusion produces a robust feature set enhancing Android malware detection performance. Using the Random Forest classifier in the second stage, the proposed two-stage method outperforms the single stage baseline methods. Our proposed approach achieves high F-scores of 0.989 and 0.998 in two different datasets respectively utilizing significantly lower number of features.