Figures Collection

I. Figures

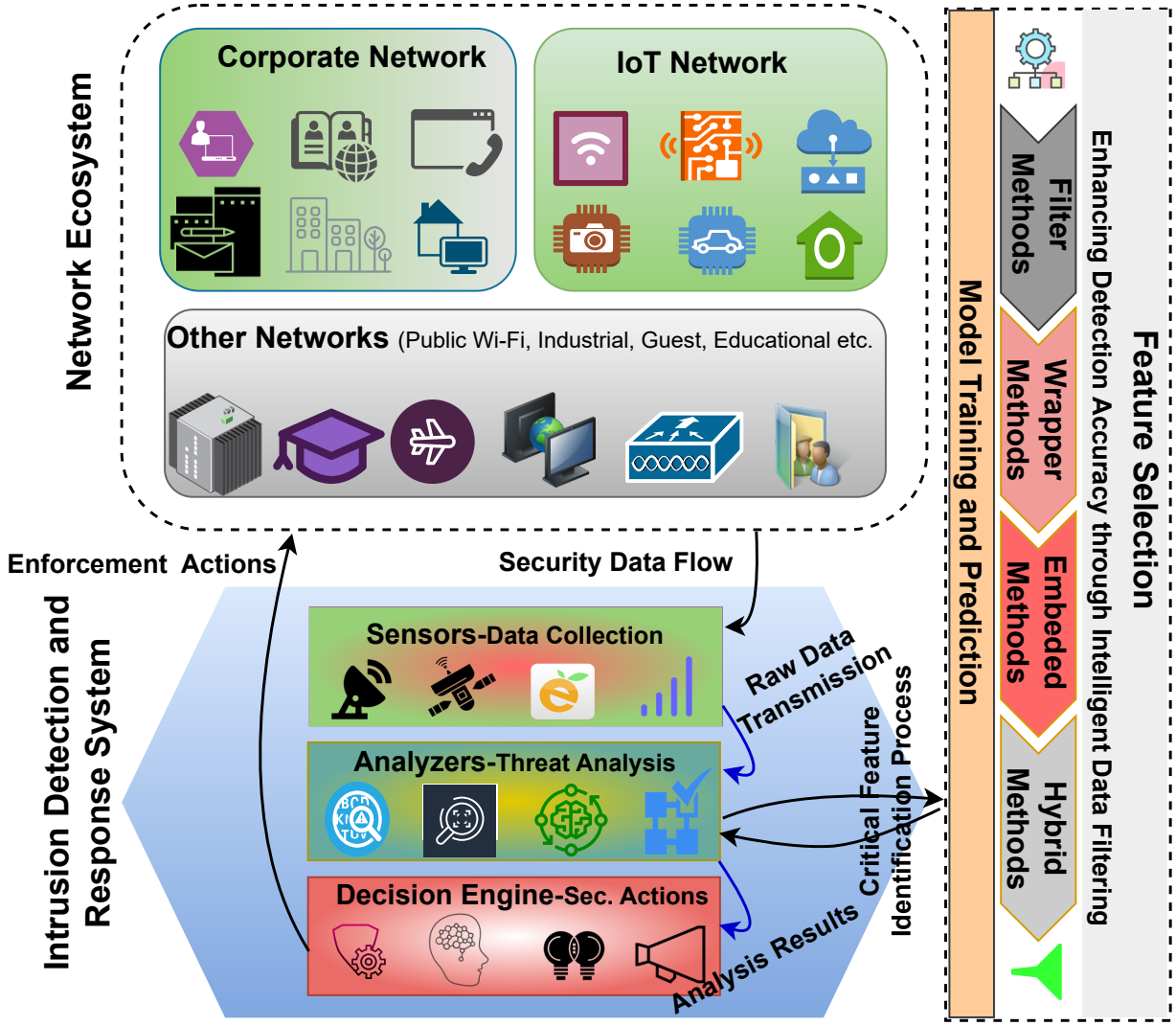

Fig. 1: Interaction map between network(s) & IDS, with machine learning integration and deployment of feature selection techniques.

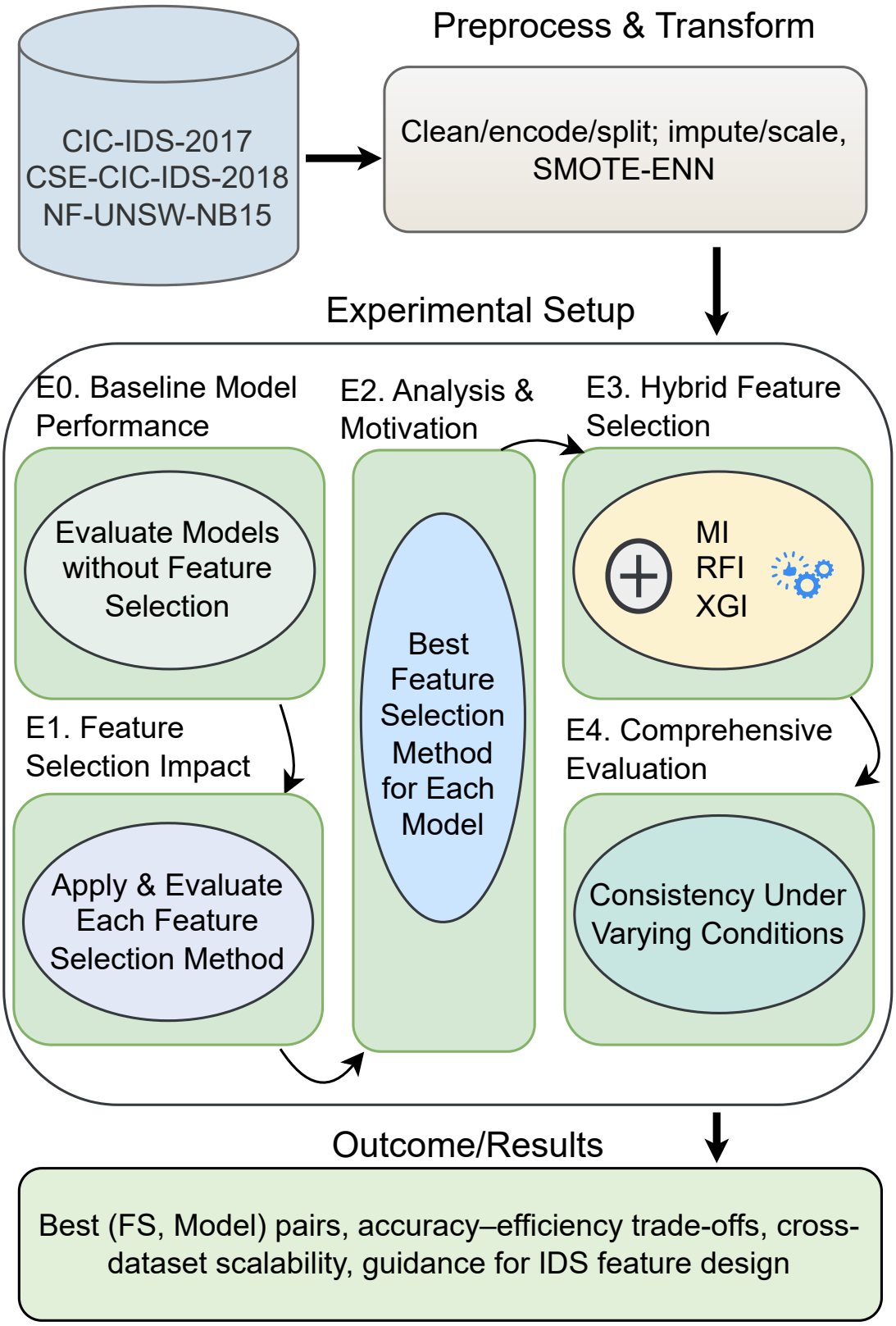

Fig. 2: Methodological Overview of Feature Selection for Ensemble Machine Learning Models: From Evaluation to Integration.

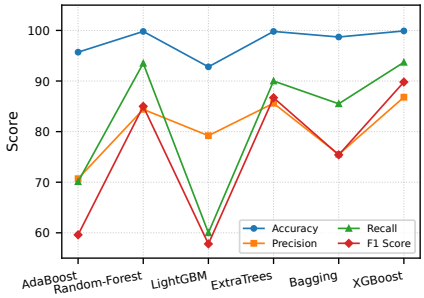

Fig. 3: Comparative overview of performance metrics for ensemble models.

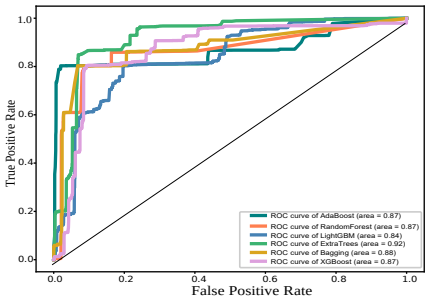

Fig. 4: Comparative ROC curves of ensemble models.

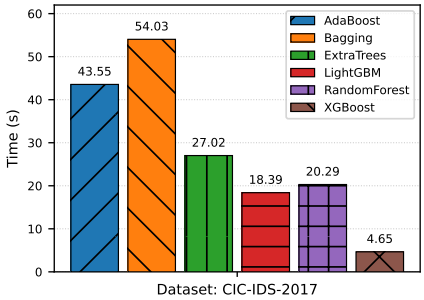

Fig. 5: Prediction time for 1,000 flows on RTX 3080 (CIC-IDS-2017 test set).

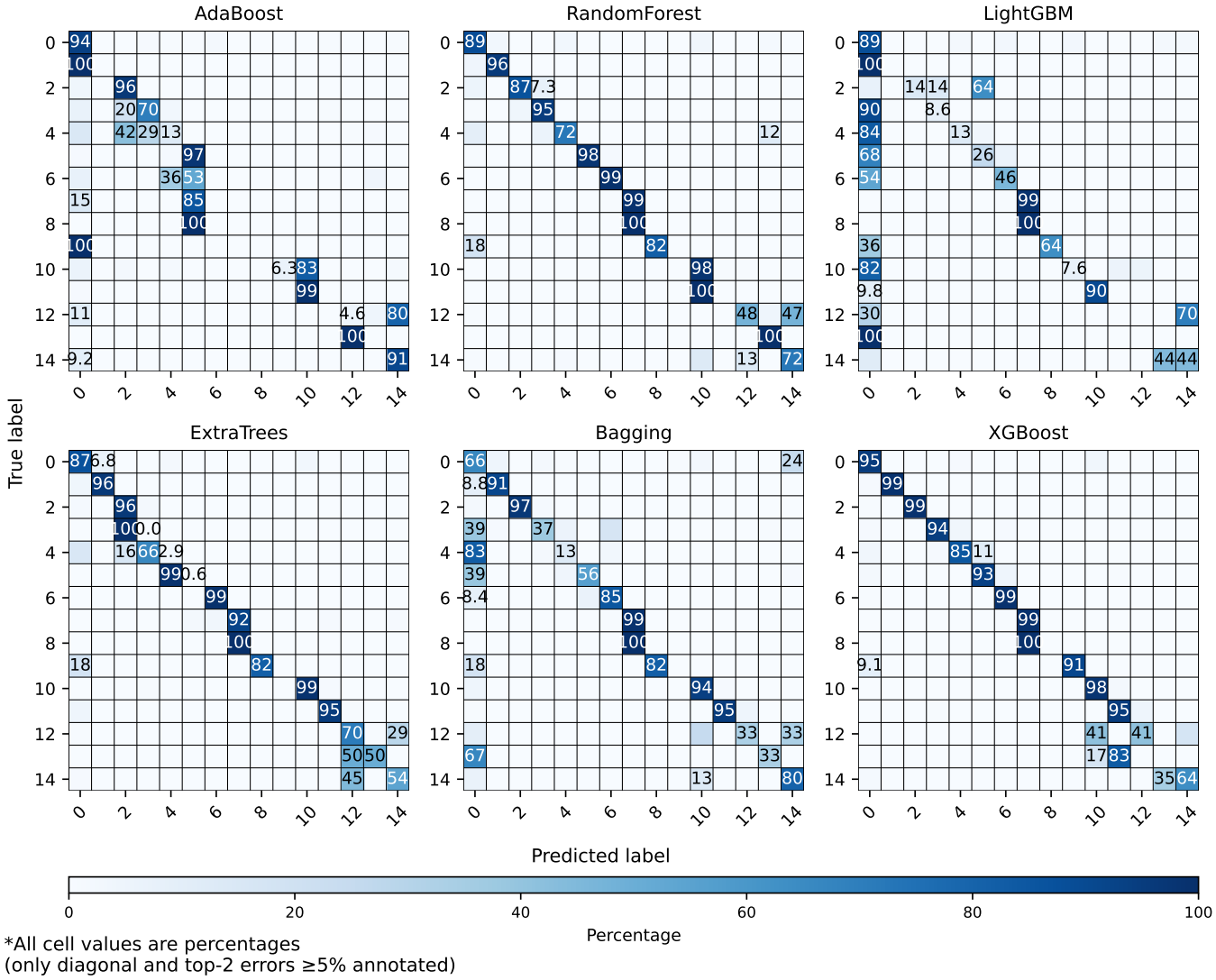

Fig. 6: Confusion matrices for ensemble classification.

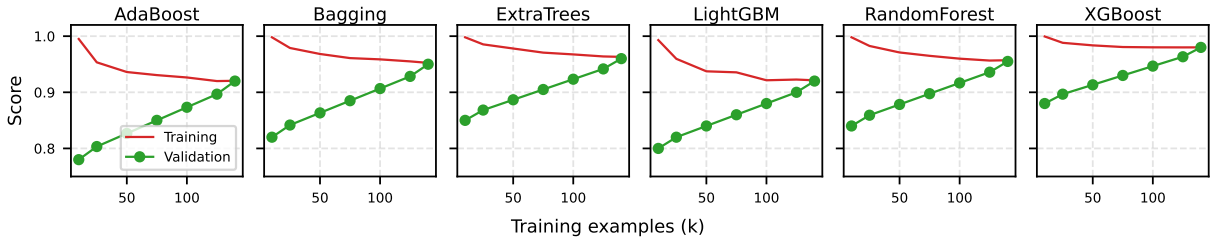

Fig. 7: Learning curves for six ensembles: training (red) and validation (green) scores vs. sample size (12k–125k flows).

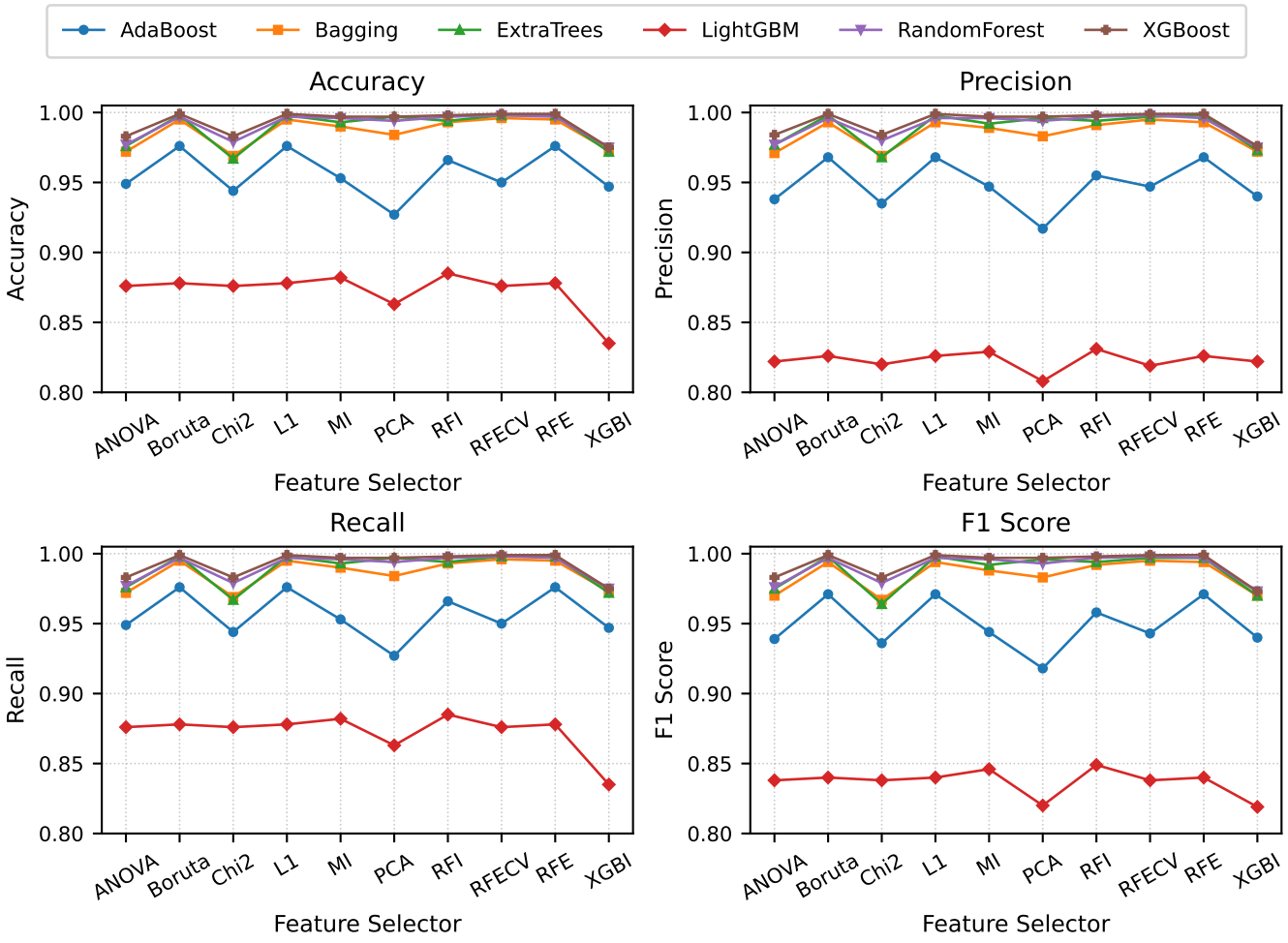

Fig. 8: Performance overview of feature selectors and ensembles.

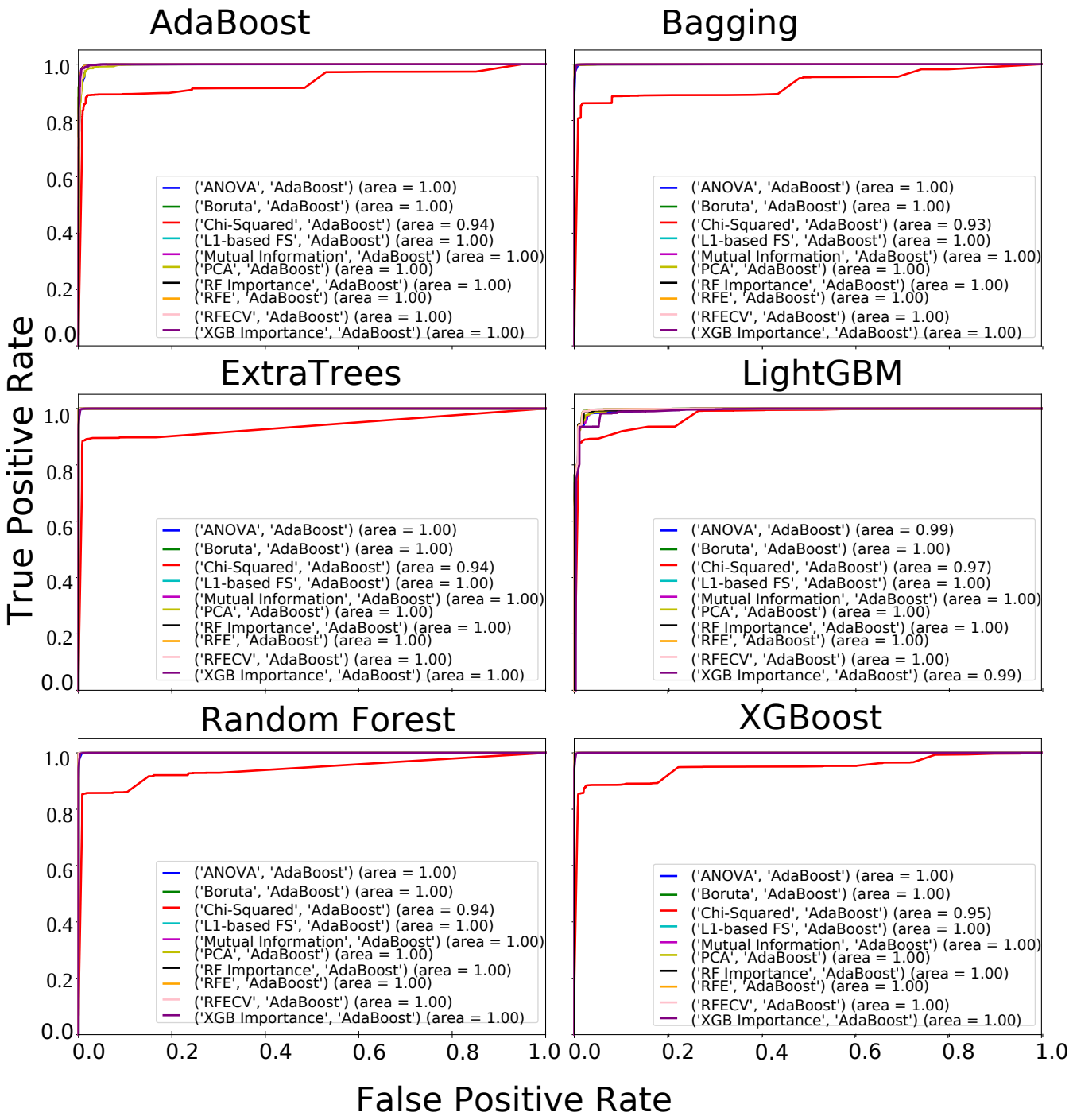

Fig. 9: ROC curves of feature selectors and each ensemble model.

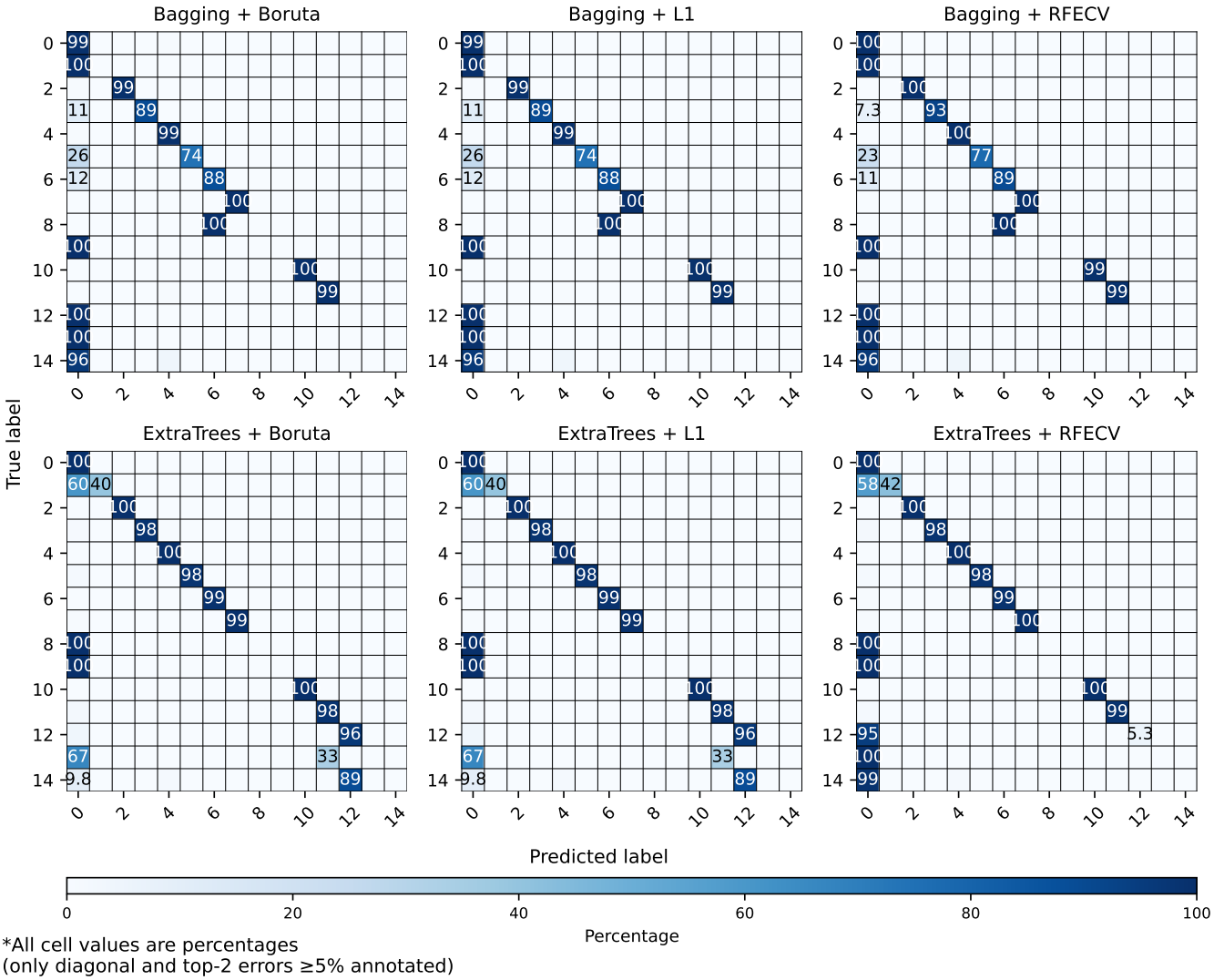

Fig. 10: Confusion metrics of best performing combination of ensemble models and feature selection techniques.

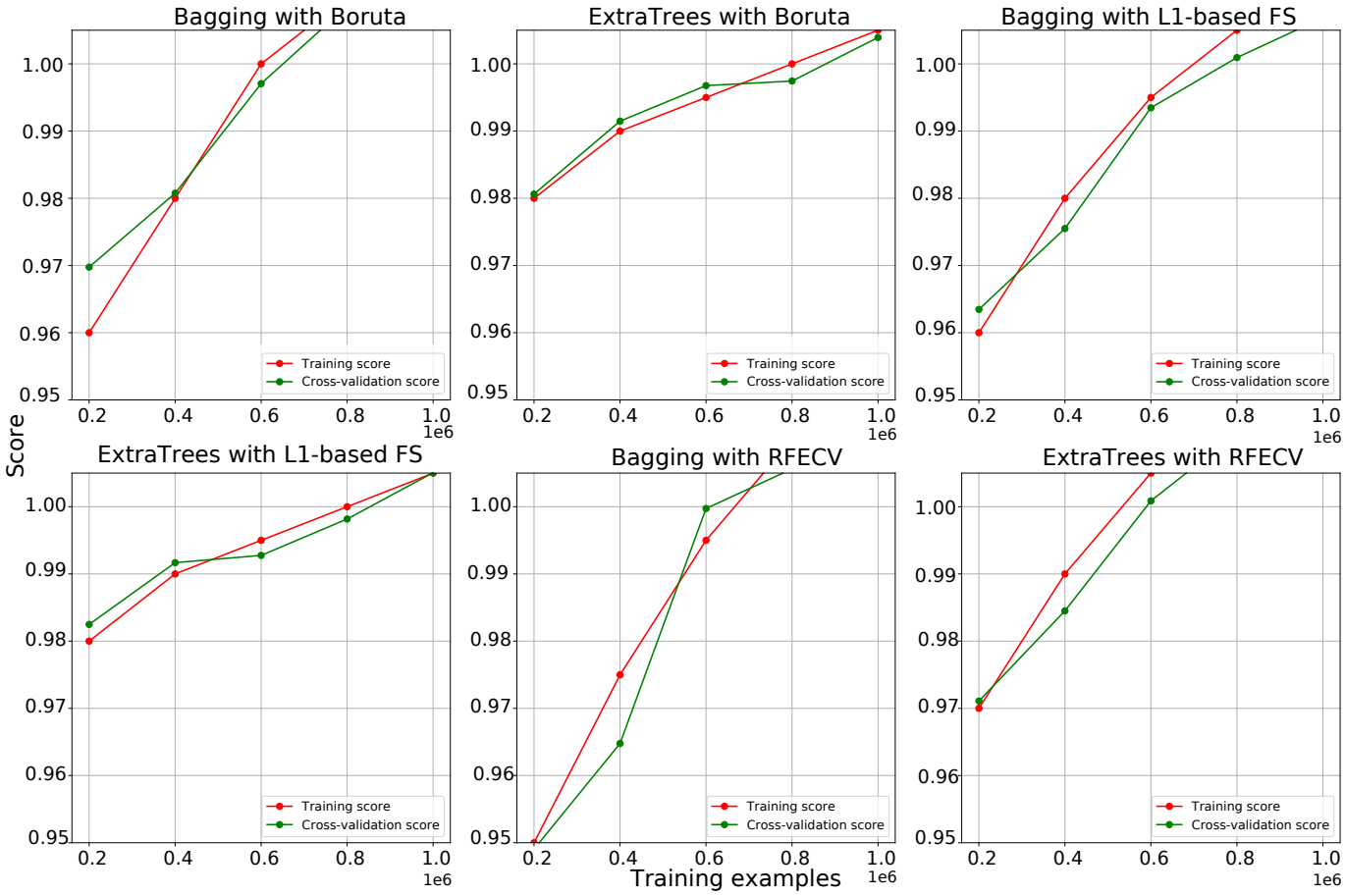

Fig. 11: Learning curves of best performing combinations.

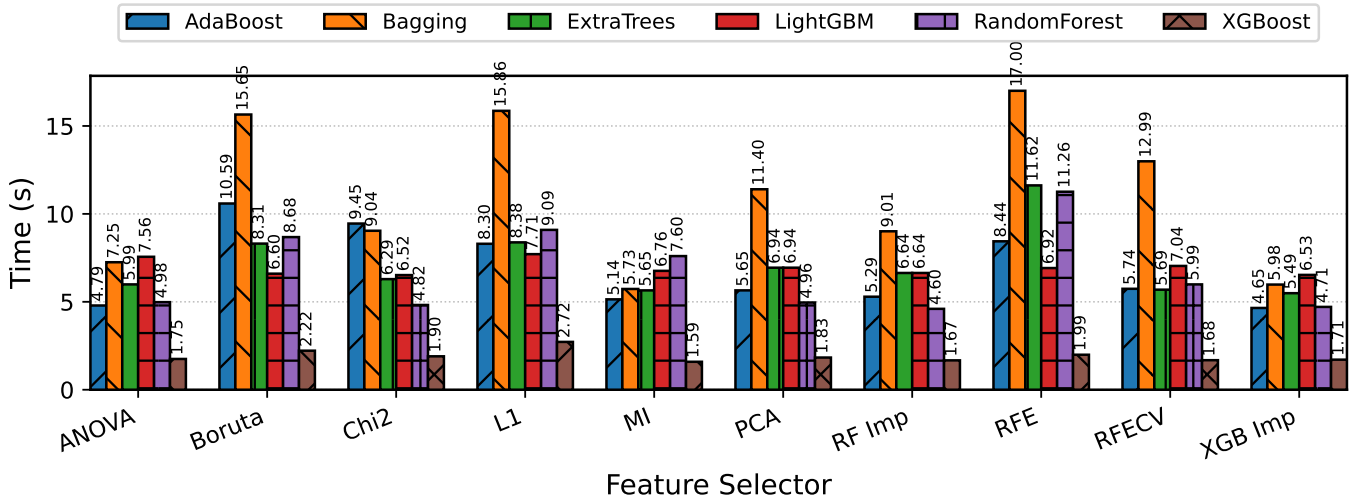

Fig. 12: Prediction time per 1,000 flows (RTX 3080) for six ensembles and ten selectors.

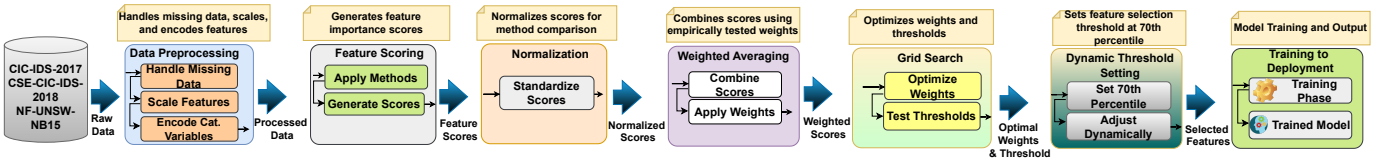

Fig. 13: Data preprocessing and feature selection pipeline.

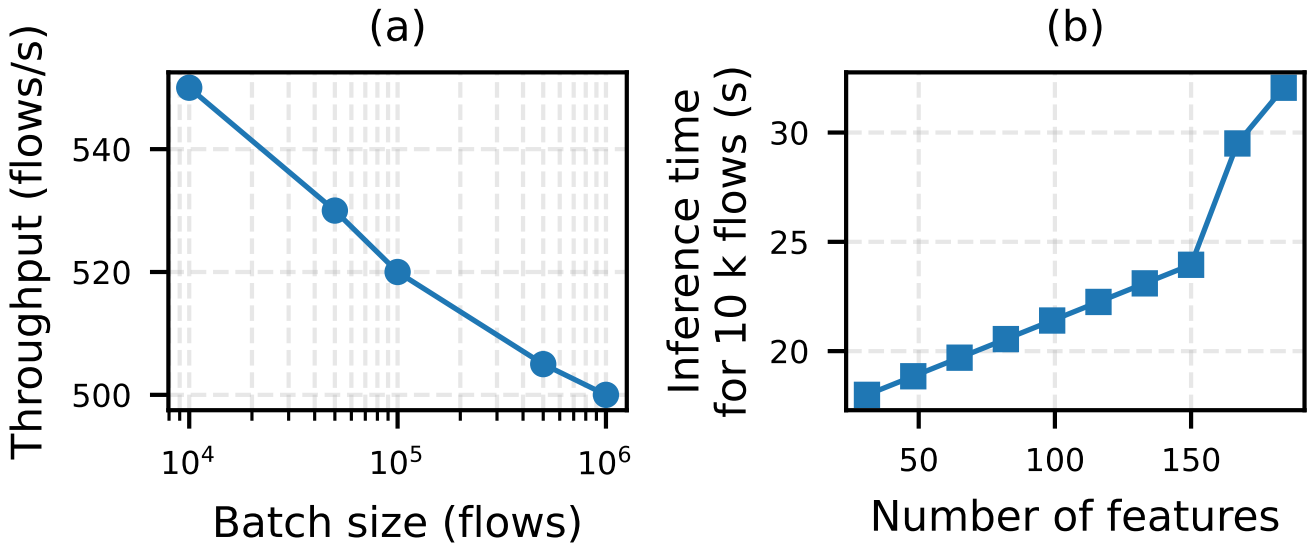

Fig. 14: Scaling characteristics of the IDS pipeline.

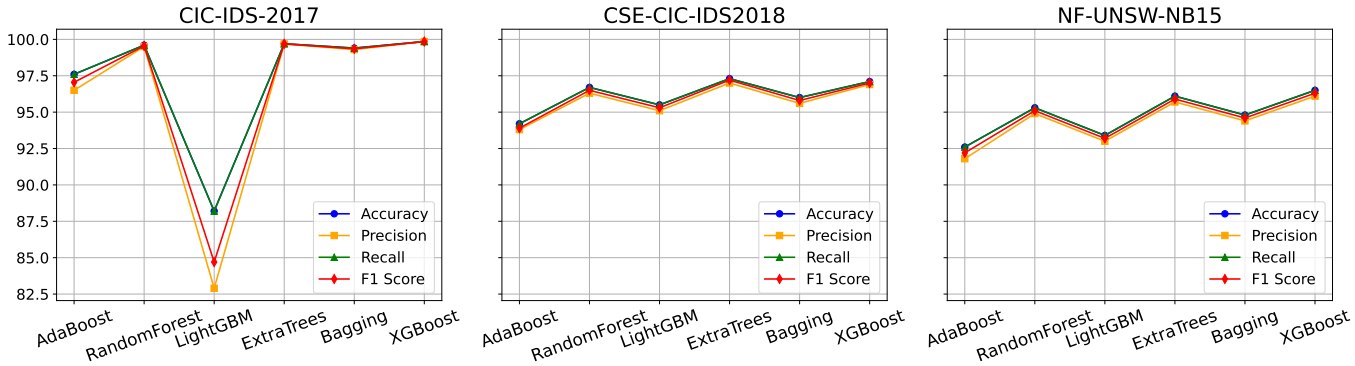

Fig. 15: Hybrid-FS ensemble performance across datasets.

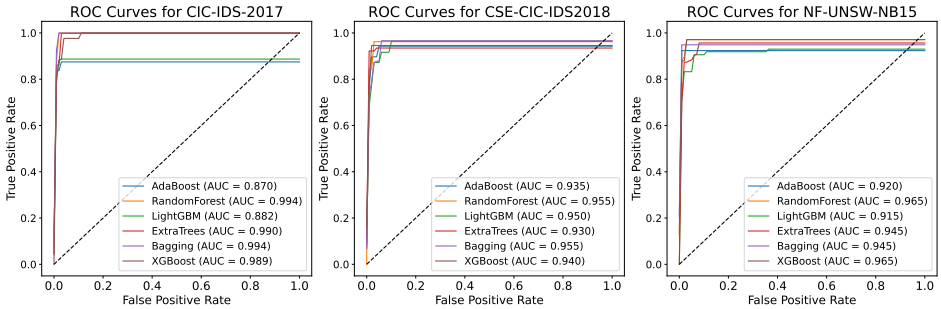

Fig. 16: ROC curves for ensemble models with Hybrid-FS.

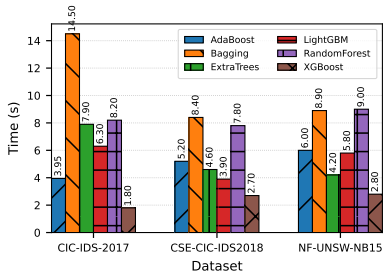

Fig. 17: Prediction time per 1,000 flows (RTX 3080) for Hybrid-FS.