Model Research

Model Type	Dataset(s) Used	Accuracy/F1	AUC-ROC	Main Strengths/Use Cases
Multi-scale CNN	CIC-IDS, UNSW, Edge IIoT	High (≥0.90)	High-90s	Excels in spatial features; often paired with RNN
LSTM, BiGRU RNN	CIC-IDS, Edge IIoT	F1 ≈ 0.90	High	Models sequential flow sessions; dual attention aids focus
Transformer Attention Models	CIC-IDS, Edge IIoT	High precision	High	Long-range dependency modeling, telemetry fusion
Graph/Hypergraph Encoders	CIC-IDS, UNSW, multi-set	Strong generalization	Not always reported	Encodes multi-view relations, boosts robustness
GANs (WGAN-GP, CGAN, hybrids)	CIC-IDS synthetic traffic	Not direct accuracy	Robustness	Traffic augmentation, adversarial robustness
Contrastive Self-Supervised Learning	Phishingweb, CIC-IDS	Improved F1, Proxy AUC		Reduces label dependency, increases domain transferability

Model Research

Model Type	Dataset(s) Used	Accuracy/F1	AUC-ROC	Main Strengths/Use Cases
Autoencoders/Isolation Forest	CIC-IDS, UNSW	High anomaly detection	AUC ≈ 0.95	Unsupervised normal behavior modeling
Ensemble Trees (RF, XGBoost)	Tabular (CIC-IDS, etc.)	Accuracy ≈ 0.90	Moderate	Baseline model, interpretable, useful for risk scoring