

Explainable and Secure Cyber Attack Detection in Railway Industrial Control Systems using Temporal CNN

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Abstract

In this paper we have proposed a layered framework for Industrial Railway Signal Control System defense against the cyber threats. Using the temporal CNN data and SCADA signal control system real time data we applied various machine learning techniques for knowledge pattern extraction. The adaptive framework also enables us to enforce various industrial standards and policies along with ML methods. Applied several metrics and features for better classification of cyber threats in this work. All the classification algorithms performance evaluation done. In this work we made to explore Cyber Security levels over industrial railway control systems towards security perspective.

Keywords

Cyber attacks, Control systems, temporal, Heat maps, K-mean, DBSCAN, Outliers.