RFID Attack Detection

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This project develops a software tool designed to enhance the detection and visualization of network security breaches. It leverages common, cost-effective technologies, including Raspberry Pi and the Proxmark 3, to monitor network traffic for anomalies and visualize these threats through a user-friendly graphical user interface (GUI). The emphasis is on simplifying the interface to ensure that individuals with minimal technical knowledge can effectively manage and respond to potential security risks.

The system architecture incorporates multiple layers of analysis to filter and categorize incoming data streams, identifying patterns that deviate from established baselines. These deviations are then classified according to their potential threat level and displayed using intuitive visual cues that enable rapid interpretation and response.

The system's efficacy in recognizing and categorizing network anomalies was rigorously tested using RFID technology, among other methods, to simulate diverse attack scenarios, validating its robustness and reliability in a controlled environment.

By providing real-time alerts and actionable insights into threat levels, the software substantially reduces the latency between the identification of a network attack and the response. This capability is critical for maintaining the security integrity of network-dependent systems. Additionally, the automated logging functionality creates comprehensive records that facilitate post-incident analysis and system refinement.

The project illustrates the potential of integrating advanced network security technologies into everyday operational practices, enhancing the proactive security measures essential for protecting sensitive data and infrastructures.

**Keywords**: Network security, visualization software, user-friendly GUI, RFID technology