

A Survey on the Security in Cyber Physical System with Multi-Factor Authentication

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Abstract— Cyber-physical Systems can be defined as a complex networked control system, which normally develop by combining several physical components with the cyber space. Cyber Physical System are already a part of our daily life. As its already being a part of everyone life, CPS also have great potential security threats and can be vulnerable to various cyber-attacks without showing any sign directly to component failure. To protect user security and privacy is a fundamental concern of any kind of system; either it's a simple web application or supplicated professional system. Digital Multifactor authentication is one of the best ways to make secure authentication. It covers many different areas of a Cyber-connected world, including online payments, communications, access right management, etc. Most of the time, Multifactor authentication is little complex as it requires extra step from users. This paper will discuss the evolution from single authentication to Multi-Factor Authentication (MFA) starting from Single-Factor Authentication (SFA) and through Two-Factor Authentication (2FA). This paper seeks to analyze and evaluate the most prominent authentication techniques based on accuracy, cost, and feasibility of implementation. We also suggest several authentication schemes which incorporate with Multifactor authentication for CPS.

Keyword— Authentication, Multifactor Authentication, Cyber Physical System, Sensors, Cryptography, Face recognition



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