The State of FIDO2 Passkey Implementations: Challenges, Inconsistencies, and Opportunities

Dr. Emin Huseynov

Azerbaijan Technical University, Baku, Azerbaijan

Abstract:

Passkeys, based on the FIDO2/WebAuthn standards, are often hailed as the successor to passwords—offering stronger phishing resistance and improved usability. However, real-world implementations across platforms reveal inconsistencies, poor developer decisions, and significant UX obstacles. This paper documents empirical evidence from multiple platforms, highlights common implementation mistakes, and analyzes the root causes. We propose several best practices for service providers, drawing attention to the critical role of precise authenticator attachment handling, recovery strategies, and user communication.

Keywords:

FIDO2, Passkeys, WebAuthn, Passwordless authentication, User experience.