

Privacy Threats in Facial Recognition-Based Identity Verification

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Abstract: Facial recognition technology has gained significant prominence in identity verification systems, providing convenience and security in various domains. However, the widespread adoption of this technology also raises significant concerns regarding privacy threats. This paper presents a comprehensive privacy threat model specifically designed for identity verification based on facial recognition. The model encompasses potential adversary objectives, such as unauthorized access, identity theft, and profiling, and identifies specific privacy threats, including unauthorized data access, biometric data misuse, tracking and surveillance, re-identification attacks, discrimination and bias, and data retention and sharing. To mitigate these threats, the paper proposes several mitigation measures, such as informed consent, transparent data handling, secure data storage and transmission, minimization of data collection, regular audits and assessments, and ethical considerations. By providing a holistic view of privacy threats in facial recognition-based identity verification, this model aims to guide researchers, practitioners, and policymakers in developing and implementing effective privacy protection mechanisms in this rapidly evolving technological landscape.

Keywords: Facial recognition

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