MedVault: A Privacy-First Web Application for Secure and Patient-Controlled Medical History Management

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Abstract: *The digitalization of healthcare has improved efficiency but also introduced critical concerns regarding the privacy and control of patient data. Traditional systems often lack adequate security measures, centralized privacy controls, and patient-centric authorization. This paper presents MedVault, a privacy-first web application for secure medical history management. MedVault enables patients to securely store and control access to their medical records using end-to-end encryption, OTP-based authentication, and role-based access control. Doctors can request access, but only upon explicit patient approval, ensuring transparency through audit logs and secure cloud storage.*

Keywords: Medical data privacy, role-based access, end-to-end encryption, secure health records, patient data control