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(57) Abstract :

A touchless login authentication device (100) integrates a biometric imaging module (101), gesture sensor array (102), processing unit (103), AI-based authentication engine (104), and secure communication module (105) to enable hygienic, secure, and dual-layered user authentication. The system captures facial or iris data and predefined hand gestures, processes them via AI, and confirms identity locally before transmitting an encrypted access token. Optional voice recognition (106) serves as a fallback, enhancing inclusivity and reliability across varied user and environmental conditions.

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