The Invisible Shield: How Artificial Intelligence is Securing the Identities of over a Billion Indians

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The Unique Identification Authority of India (UIDAI) has launched landmark initiatives in India's digital security framework. It has deployed next-generation AI enabled biometric deduplication and document verification platform. This platform will improve the deduplication accuracy of the Enrolment or Update transaction being undertaken by UIDAI.

This "Invisible Shield" marks a new chapter in India's digital safety mission — a multi-layered AI defence system that performs crores of computations, harnessing accelerated computing to protect citizens' trust and data integrity.

Population-Scale Data Deduplication

To uphold the principle of one unique identity per resident, UIDAI operates one of the world's largest biometric deduplication systems. Every new Aadhaar enrolment is cross-checked against the entire enrolled Aadhaar database to guarantee uniqueness.

UIDAI has indigenously developed advanced AI models for all the biometric modalities — fingerprint, face, and iris — in collaboration with International Institute of Information Technology, Hyderabad. These models run on NVIDIA DGX high-performance inference infrastructure, enabling secure and efficient processing at population scale.

Each deduplication transaction involves billions of computations. With the latest AI inference technologies, UIDAI has already completed enhanced deduplication rollouts for several states and is on track to complete this exercise nationwide in the coming months.

Smart Document Verification: Stopping Fraud at the Source

To curb enrolment fraud, UIDAI now employs AI-based document metadata extraction and verification against the source of truth. This infrastructure uses the APIs of Digilocker for verification of the document. For semantic analysis and extraction of the metadata, UIDAI uses NVIDIA AI inferencing infrastructure.

This platform would help UIDAI to ensure authenticity of the document, reduce the turn around time of the enrolment and update process and enhance quality of service being provided to the Aadhaar number holders.

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