



CASE STUDY

Biometric Identity Verification for High-Stakes Exams Aadhaar OTP & Fingerprint Scanning User Validation



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Project Overview

CanWill Athenaworks partnered with a parent company initiative to engineer a secure, scalable online examination platform designed for high-stakes recruitment across District Central Co-operative Banks and similar institutions. The product was purpose-built to eliminate candidate impersonation and ensure audit-ready, Aadhaar-compliant identity verification at scale.

The system integrates dual-layered user validation via Aadhaar OTP during registration and biometric fingerprint scanning during on-site examination, providing end-to-end verification assurance.

The Challenge

Recruitment fraud—particularly candidate impersonation—posed a significant threat to credibility and operational integrity. Organizations lacked the infrastructure to verify user identity securely and consistently across dispersed exam centers.

Key Pain Points:

- No initial BRD or UI/UX framework.
- Identity fraud through impersonation.
- Unpredictable UIDAI API response times.
- Non-compliance risk due to lack of AUA/KUA registration.
- Manual candidate attendance tracking creating delays and inefficiencies.



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What made this project especially challenging—and equally rewarding—was starting from a blank slate. With no initial documentation, no UI/UX inputs, and no clear scope, we had to build everything ground up. The breakthrough came not just in solving a technical problem, but in crafting a real-world solution that addressed a deep-rooted issue of impersonation in examinations. Today, knowing that our system is trusted to verify identities and secure recruitment processes at scale is a deeply fulfilling milestone for me and the entire team.

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— Sumedh Sirsat, Project & Product Management Lead

The Solution

CanWill Athenaworks' Application Engineering team delivered a robust, modular product that combined security-first architecture with user-centric design.

Key Components:

- **Candidate Registration Portal:** Uses Aadhaar OTP via UIDAI's secure API for registration-time validation.
- **Examination Portal:** LAN-based, offline-capable system with real-time biometric authentication using Mantra MFS110 fingerprint devices.
- **Admin Console:** Dynamic attendance sheet generator reduced manual collation from days to hours.

Data Handling & Privacy Compliance:

In line with UIDAI regulations, the system performs all Aadhaar OTP and biometric validations as ephemeral, runtime operations. Biometric and personally identifiable information is never stored—locally or in the cloud. The system receives real-time identity validation data strictly for cross-verification against registration details, without persisting any sensitive user data. This approach ensures full compliance with UIDAI's stringent data privacy standards and reinforces the product's integrity in high-stakes environments.



Strategic Takeaways

- **Secure design without a BRD:** Required agile thinking and deep domain knowledge.
- **Partnerships matter:** Working with trusted UIDAI API providers enabled faster compliance.
- **User training drives adoption:** Empowering exam center staff minimized biometric onboarding issues.
- **Real-world feedback fuels evolution:** Deployment under pressure drove rapid iteration and continuous improvement.

Results and Impact

Quantifiable Wins:

- 50% faster identity verification process.
- Near-zero impersonation incidents.
- 60% increase in inbound demo requests.
- Drastic reduction in manual operations (attendance prep time cut by 80%).
- Successfully shortlisted as 1 of 7 empanelled vendors by the Commissioner for Cooperation.

Scalability:

Hosted on Azure with auto-scaling capabilities to handle exam-day traffic surges and concurrent sessions without performance degradation.

Client Feedback

Stakeholders praised the product's adaptability, intuitive UX, and seamless API integrations. Special mention was given to the team's responsiveness and ability to integrate last-minute requests from exam authorities with minimal downtime.

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