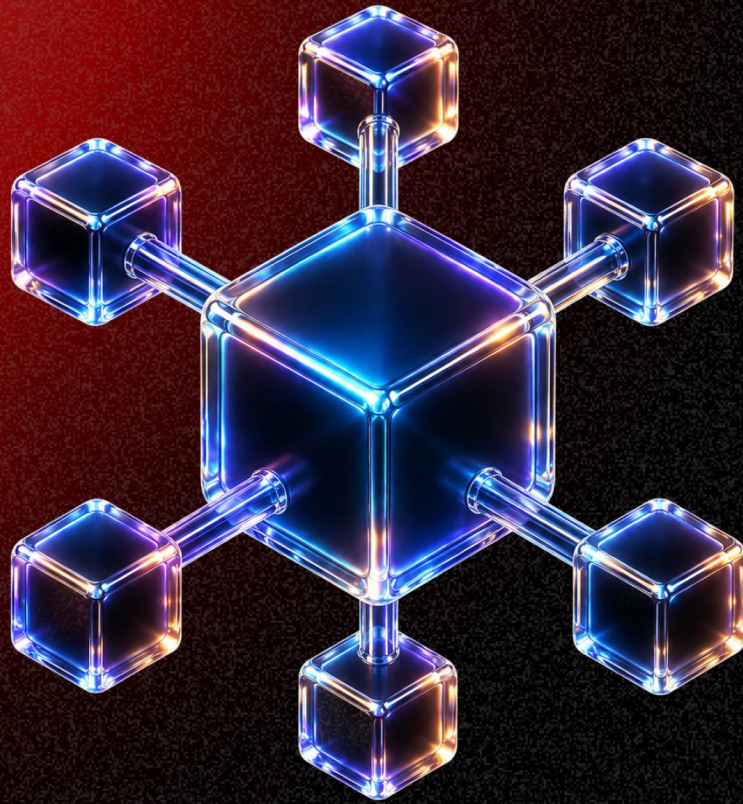




Blockchain-Based Identity and Credential Verification for Recruitment

Transforming HR operations with Ethereum smart contracts to create a decentralized, tamperproof repository of verified candidate skills and employment history.

Overview

We developed a decentralized recruitment platform on the Ethereum blockchain to store and verify candidate credentials, certifications, and employment history.

- Eliminated the need for exhaustive, manual background checks by providing auto-validated, permissioned access to trusted information.
- Achieved swift onboarding and efficient workforce planning through a centralized, incorruptible repository of authenticated talent data.



Client Profile

This US-based global giant operates in 25 countries, providing technology-driven customer engagement expertise. Their domain spans multiple sectors, including healthcare and financial services, requiring a high-integrity workforce to support their 65,000-strong global team.

Challenges: Authenticity and Verification Gaps

The client's massive employee database was vulnerable to data discrepancies, creating significant administrative friction:

- **Lack of Profile Integrity:** No reliable mechanism to identify falsified information or discrepancies in job profiles.
- **Resource-Intensive Validation:** Difficulty in verifying the domain expertise and certifications of shortlisted candidates before onboarding.
- **Ramp-up Lags:** High time and effort invested in rehiring temp staff during peak seasons due to repetitive verification cycles.

QBurst Solution: Decentralized Credentialing with Smart Contracts

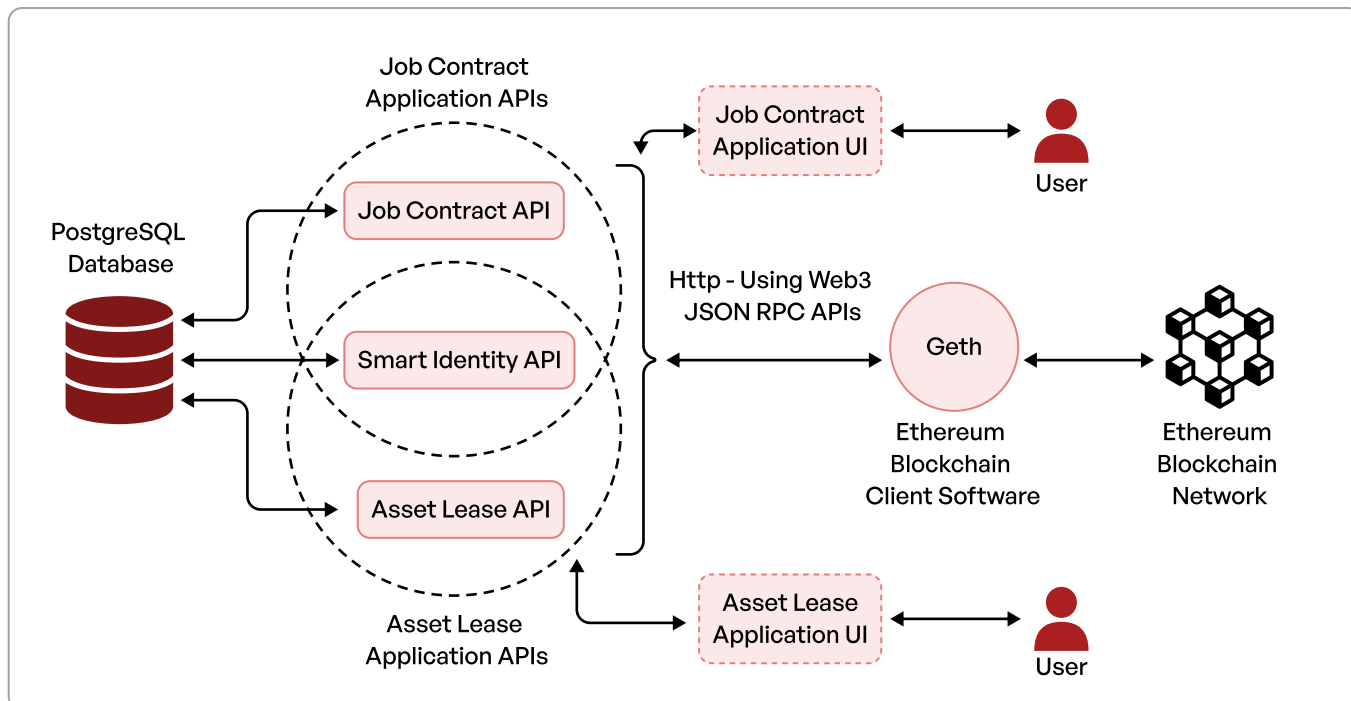
We implemented an Ethereum-based application that places candidates in control of their own authenticated digital resumes. Utilizing Solidity for smart contract scripting and Python Django for the backend, we created a system where stakeholders (past employers/certifying bodies) authenticate data on the blockchain.

The architecture uses an API-driven, event-driven approach to ensure high levels of automation:

- **Immutable Identity:** Integrated a reusable Django identity management app that interacts with the blockchain via Web3 APIs for public verifiability.
- **Decentralized Storage:** Utilized IPFS (InterPlanetary File System) for secure document uploads, ensuring that resumes and certifications are stored without central points of failure.
- **Controlled Access:** Smart contracts manage permissioned access, allowing HR teams to retrieve a transparent and incorruptible transaction history for any candidate.

Key Features and Technical Highlights

- **Ethereum Ropsten Deployment:** Secured smart contract execution for job posting, application, and contract closure.
- **Vue.js Frontend:** A responsive web interface catering to both business users (HR) and job seekers.
- **Automated Audit Trails:** Inherent blockchain traceability allows for instant retrieval of verified employment and compensation milestones.
- **Reusable Identity Module:** Decoupled architecture allowing the blockchain identity features to be integrated into other corporate HR systems.



Blockchain Solution Architecture

Impact

- **Fraud Prevention:** Established an authentic, tamperproof network that effectively eliminates the possibility of fake professional profiles.
- **Swift Onboarding:** Decentralized digital identities allow for immediate verification, significantly reducing the hiring-to-onboarding timeline.
- **Precision Talent Mapping:** Enhanced the ability to identify and assign candidates with genuine, pre-validated skill sets.
- **Strategic Workforce Planning:** Created a trusted gig-economy repository that minimizes ramp-up time for temporary staff during peak operational periods.