# **BLOCKCHAIN-BASED** SMART CONTRACT

FOR RECRUITMENT

Industrials



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# PROJECT **OVERVIEW**

Businesses that rely on temp staff for day-to-day operations invest a significant amount of time and effort in

functions such as candidate verification. A Blockchain-based verification system ensures that personal

information is stored securely and accessible by anyone with permission. The digital verification process would

be factual, trusted, and objective, preventing candidates from falsifying information. The platform also serves as

a repository to rehire temp staff during peak seasons, reducing ramp-up time.

# CLIENT PROFILE

Based in the U.S., our client is a global professional services company offering domain expertise in technologies that promote customer engagement. With over 65,000 employees and a presence in 25 countries, the client offers expertise in industries such as Financial Services, Healthcare, Pharmaceutical, Technology, Consumer Electronics, Retail, Automotive, and Tourism.

# BUSINESS CHALLENGES

As a leading professional services provider, the client maintains a large employee database that includes details pertaining to skill sets and domain expertise. However, there was:





No mechanism to identify discrepancies in job profiles

Difficulty in validating skills claimed by shortlisted candidates before onboarding

# BUSINESS REQUIREMENT

The client envisaged a solution that would provide the

#### **Blockchain components included:**

#### following:

- Enhance the current employee database with authentic and trusted information
- Prevent possibility of fake professional profiles
- Serve as workforce identification with transparency and flexibility on resources
- Serve as inputs for the larger gig economy in the long term

- Blockchain-enabled identity management
- Smart contract scripting
- Validation from shared ledger

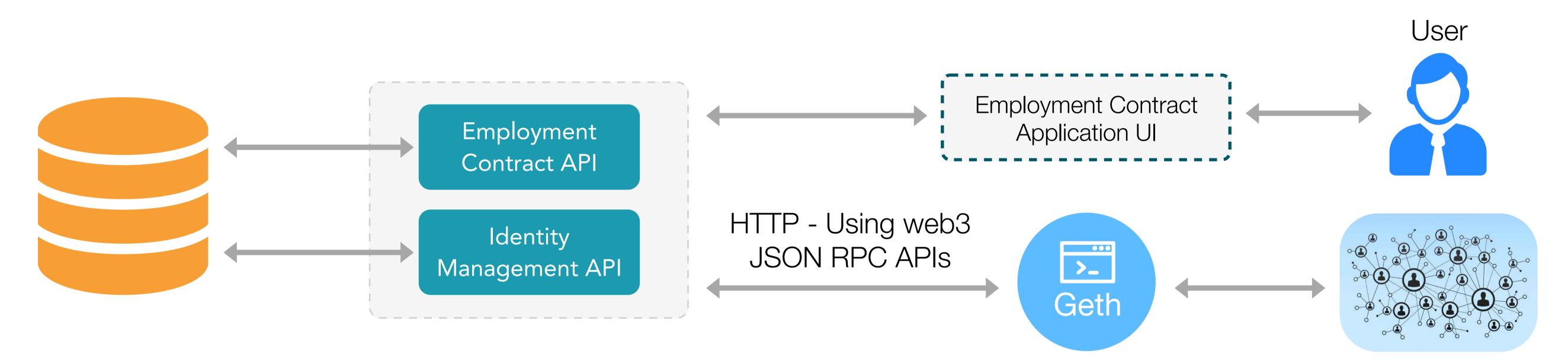
Digital content storage

# QBURST SOLUTION

After a comparative study of Blockchain platforms, we suggested Ethereum blockchain, based on factors such as implementation method, use case applicability, availability of development tools, technical community support, and cost.

The blockchain application stores prevalidated information such as past employers, certifications, and compensation data. This decentralized database of resumes is owned and controlled by candidates and authenticated by the relevant stakeholders on the blockchain.

The smart contract and identity management functions were developed using Solidity scripts and deployed in Ropsten Network of Ethereum Blockchain. The backend APIs were developed in Python Django. The Python Django application interacts with the Blockchain using Web3 APIs. The responsive frontend (web) application was created using VueJs. The identity management module is implemented as a reusable Django app which can be installed in other Django applications.



PostgreSQL Database

Employment Contract Application APIs

Ethereum Blockchain Client Software

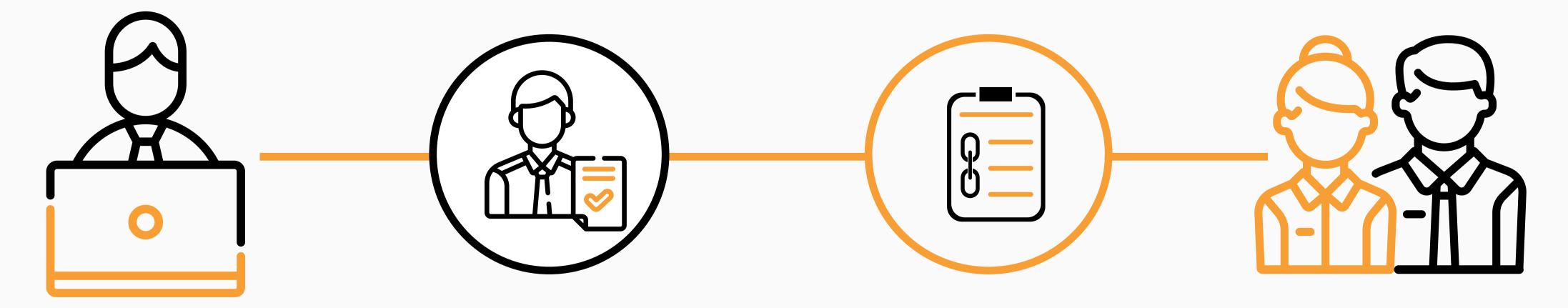
Ethereum Blockchain Network

#### **SOLUTION COMPONENTS**

Web interface for business users (HR) and end users (job seekers)

A reusable Diango app for identity management involving Blockchain interaction, keeping information public and easily verifiable

Smart contract written in Solidity (contract-oriented programing language for Ethereum) •



#### Employer

Access to trusted Blockchain-based record of candidate credentials

Individuals

Access to maintain and control resume

# HIGHLIGHTS

- Document upload in IPFS (InterPlanetary File System) and verification for identity management module
- Ability to retrieve transaction history from blockchain which is transparent and incorruptible
- API-driven approach using REST services to handle core business logic
- Event-driven architecture minimizes direct dependency between features and functionalities, while providing a higher level of automation

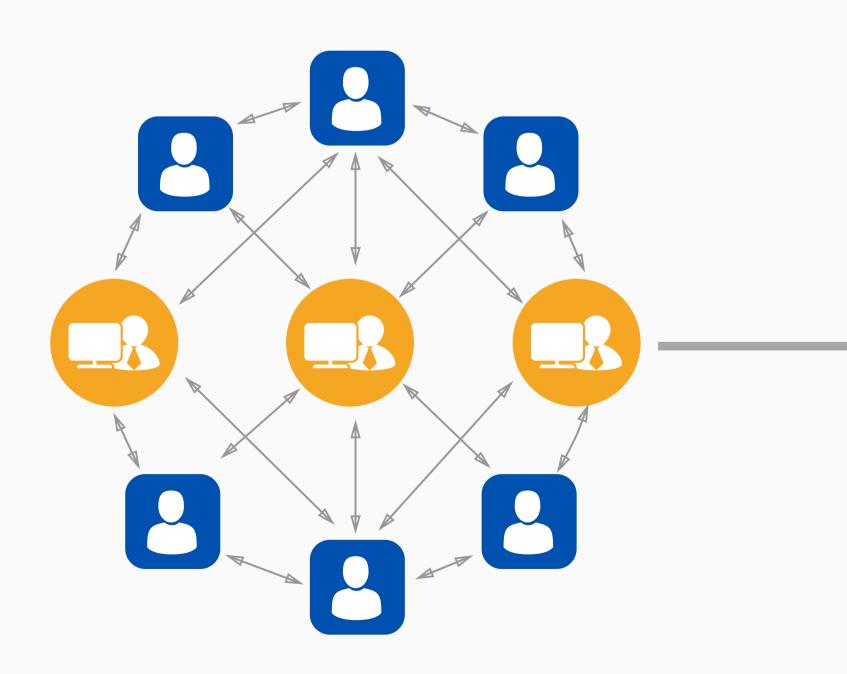
	Price	End Date	Start Date	Job Name	User
<ul> <li>×</li> </ul>	\$1200	19 Jul 2018	28 Jan 2018	Operations Manager	Tommy Freeman
<ul> <li>×</li> </ul>	\$2300	24 Jan 2018	27 Dec 2017	Associate	Jon Simon
<ul> <li>×</li> </ul>	\$1500	13 Apr 2018	11 Jan 2018	Associate	Ethan Jenkins
<ul> <li>×</li> </ul>	\$1200	02 Dec 2018	26 Nov 2018	Jr.Associate	Rosa Caldwell
X	\$2700	24 Sep 2018	28 Aug 2018	Sr.Associate	Cecilia Palmer

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# BUSINESS BENEFITS

- Authentic and tamperproof data embedded within a huge network preventing fraud •
- Decentralized online identity that is easily verifiable for swift hiring and onboarding •
- Candidates with genuine skills sets are easily identified and assigned •
- Efficient workforce planning as a result of blockchain-based centralized repository of employees •



Professional License verification Criminal Records Search

Motor Vehicle Records Search



**Employer Credit Report** 

**Education Verification** 

**Employment verification** 

#### **EMPLOYER**

Does individual checks going directly to each source

#### **POSSIBLE VERIFICATIONS**

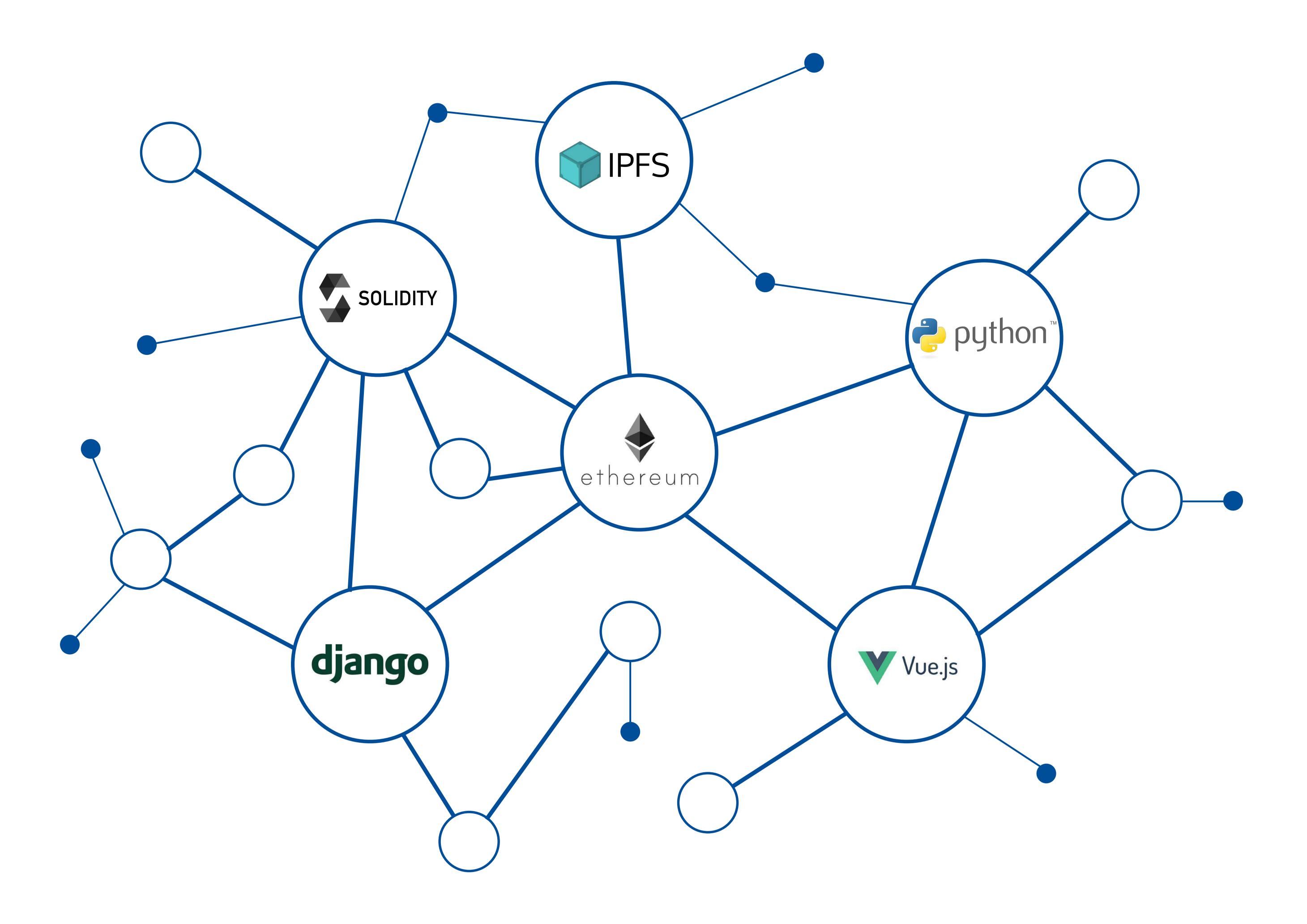
#### CANDIDATE

Candidate manages resume using a blockchain application throughout their career

Slow, Manual, Costly

Fast, Automated, Cost Effective

# TECHNOLOGIES USED



### USA | UK | UAE | INDIA | SINGAPORE | AUSTRALIA



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