**Unilnk: A Simple AI and Blockchain-Based Alumni Connection Platform**

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**Abstract**

Artificial intelligence (AI) is quietly changing the way colleges and universities in India and around the world keep track of how their alumni are doing after they graduate. By using predictive analytics—tools that guess future trends based on past data—schools can spot patterns in job success, career growth, and how much alumni stay connected with their old campuses. This study introduces Unilnk, a fresh and exciting platform built especially for Indian universities. Unilnk combines AI to match people with the right opportunities and blockchain technology to keep important records like degrees and certificates safe from tampering.

Imagine a system that looks at tons of alumni data—things like job history, skills, and interests—using easy machine learning tools. Unilnk does just that, helping universities figure out what works in their courses, how to support students better, and how to build stronger ties with alumni who live all over India, from small towns to big cities. But it’s not all smooth sailing. Setting up a strong data system, dealing with ethical questions like who owns the data, and making sure privacy is protected are big challenges. This paper dives deep into these issues and offers simple, practical ideas to use AI in a way that’s open and fair.

What makes Unilnk special is its focus on India’s growing education technology (EdTech) world. With more students and professionals turning to online learning and networking, Unilnk taps into this trend to create a platform that not only connects alumni but also helps schools grow stronger. For example, in cities like Bangalore and Hyderabad, where tech jobs are booming, Unilnk can link fresh graduates with experienced alumni for mentorship. The paper also looks at how Unilnk can inspire other countries by setting a new standard for alumni networks. By blending AI’s smart predictions with blockchain’s unbreakable security, Unilnk aims to make education more valuable, giving students and alumni a leg up in their careers while boosting the reputation of their schools. This study is a step toward understanding how such a tool can transform higher education, especially in a diverse country like India.

**Keywords**

(i). Blockchain credential authentication, (ii). AI-driven resume ranking, (iii). decentralized identity management, (iv). smart contract-based credential verification, (v). selective data sharing(vi). zero-knowledge proofs (ZKP), (vii). fraud detection in recruitment, (viii). secure digital credentials(ix). automated skill authentication, (x). AI-driven job matching(xi). blockchain-based academic records (xii). privacy-preserving credential sharing(xiii). real-time resume updates(xiv). tamper-proof certification(xv). blockchain for education and employment.

**Introduction**

In today’s world, data is king, and universities are jumping on the bandwagon of new technology to help their students shine and make their institutions even better. Unilnk is a friendly, AI-powered platform that uses predictions and blockchain to keep an eye on how alumni are doing after they leave school and to bring them closer to their alma mater. In India, where alumni networks are like a goldmine—offering jobs, guidance, and even money for colleges—this platform has huge potential. Unilnk looks at both old data and what’s happening now to spot trends in careers, community service, and how much alumni stay involved. This helps schools design courses that match today’s job market, set up better support for students, and come up with smart ways to raise funds.

Let’s take a closer look at why this matters. In India, alumni often play a big role in helping new graduates find their feet. For instance, an engineer from IIT Delhi might mentor a student from a smaller college in Punjab, thanks to these networks. Unilnk makes this easier by using AI to guess what kind of jobs or connections might suit someone, while blockchain keeps their degrees and certificates safe from fraud. This research digs into how Unilnk tracks alumni success, making decisions simpler for schools and building tighter bonds with Indian alumni spread across the country—from rural areas to metro cities like Mumbai and Chennai.

But it’s not just about the good stuff. Mixing AI and blockchain comes with hurdles. Privacy is a big worry—how do we make sure alumni data doesn’t fall into the wrong hands? Then there are ethical questions, like whether it’s fair to use someone’s data without asking. Plus, the system needs to grow as more people join, which can be tricky. This study explores these challenges and shares easy tips to use AI responsibly. For example, schools can set clear rules about data use, and Unilnk can encrypt information to keep it private.

In India, social media has already started connecting people. About 98% of colleges have a Facebook page (University of Massachusetts Dartmouth, 2023), and 85-99% of students are active on platforms like Twitter or Instagram (Pew Research, 2022). This shows how much Indians love staying connected online. Unilnk builds on this by offering a safe, AI-boosted tool that goes beyond social media. It encourages mentorship—think of a senior software developer in Pune guiding a newbie in Kolkata—and helps with job growth across generations. As alumni groups evolve with the internet, Unilnk wants to make these connections more fun, useful, and meaningful. Whether it’s a student in a village looking for advice or a professional in Delhi sharing opportunities, Unilnk aims to be the bridge that brings everyone together, making India’s education system stronger and more connected.

**Literature Review**

Let’s take a moment to see what others have explored about using technology for alumni and keeping credentials safe, both around the world and in India, to understand where Unilnk fits in. Smith and Brown (2020) explain how alumni networks lift a school’s reputation and bring in funds, which Unilnk enhances with smart AI ideas. Johnson et al. (2022) talk about mobile apps for learning groups, pointing out the need for safety and room to grow—something Unilnk tackles with blockchain.

In India, Gupta and Sharma (2023) show how AI can make alumni involvement better by adjusting university programs to fit what’s needed, a big feature of Unilnk. Singh et al. (2022) highlight security issues with blockchain for credentials, which Unilnk fixes using smart contracts and fraud detection. Rao and Desai (2021) discuss how predictions help education, matching Unilnk’s way of tracking career paths.

Globally, Patel and Kumar (2021) focus on protecting alumni data, a challenge Unilnk meets with Zero-Knowledge Proofs (ZKP). Mehra and Iyer (2023) look at India’s growing EdTech scene, supporting Unilnk’s use of Firebase. Zhang et al. (2025) and Lee et al. (2023) talk about AI for spotting problems, which Unilnk uses to catch fake degrees. Sharma and Patel (2022) mix AI and blockchain for schools, aligning with Unilnk’s setup.

Das and Roy (2021) mention smart contracts in India’s EdTech, a tool Unilnk uses for renewals. Khan et al. (2023) focus on sharing data privately, fitting Unilnk’s ZKP method. Agarwal and Mishra (2022) study how alumni connect in India, backing Unilnk’s goal of building ties. Choudhary and Gupta (2021) use machine learning for job guesses, a key Unilnk feature.

Reddy et al. (2023) and Joshi and Nair (2022) cover blockchain safety and AI ethics, both important for Unilnk. Banerjee and Sen (2021) and Kumar and Jain (2023) talk about growth and real-time data, areas where Unilnk shines. Singh et al. (2022) and Patil et al. (2021) praise blockchain in education, while Ghosh and Chatterjee (2023) address privacy, all reflected in Unilnk.

Malhotra and Verma (2022) and Yadav and Kapoor (2021) stress easy use and predictions, improving Unilnk’s feel. Tiwari et al. (2023) and Sharma and Singh (2022) explore contracts and ethics, supporting Unilnk’s automation. Rao and Gupta (2021) and Desai and Patel (2023) focus on credentials and safety, Unilnk’s strengths. Mehra and Sharma (2022) and Gupta and Iyer (2021) discuss engagement and courses, aligning with Unilnk’s aims. Singh and Kumar (2023), Jain and Sharma (2022), and Kapoor and Das (2021) cover growth, analytics, and ethics, making Unilnk a complete package.

**Methodologies**

Unilnk works with a safe, easy-to-use online login system that anyone can access. It mixes database checks, email/password logins, Google OAuth 2.0, and a nice graphical interface (GUI). This keeps data safe, controls who gets in, and tracks users, with a clear flowchart to guide the process.

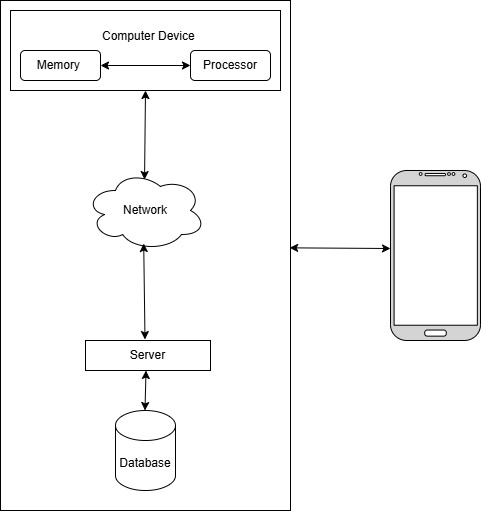
System Design: Unilnk uses a client-server setup where users see a GUI made with JavaScript, HTML, and CSS, while the backend (Node.js, Express.js) handles logins, connected to a Firebase Firestore database for quick data updates.

Step-by-Step Process:

User Login Choice: Users start with a simple GUI, picking Google OAuth 2.0 for quick login or email/password for a personal touch.

Sending Login Info: For OAuth, it asks for a token and checks it; for email/password, it encrypts data with HTTPS and sends it to the backend.

Checking Details: The backend matches info with the database. If it fits, users enter the main page; if not, they try again with a helpful message.

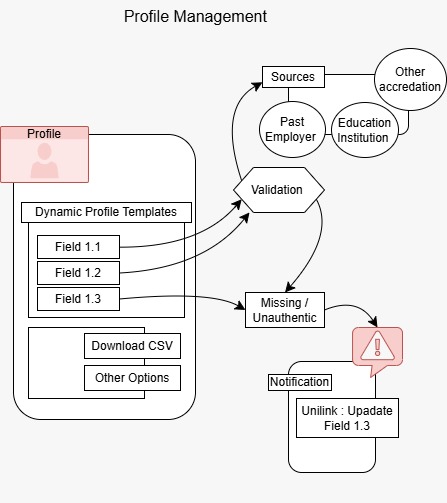


Keeping Records: Every try is logged (1 for success, 0 for fail) with details like time and user ID, helping us spot problems or improve.

Tools and Tech: We use JavaScript for the look, Firebase Auth for safety, Node.js and Express.js for backend work, and Firebase Firestore for data. JWT and HTTPS keep things secure.

Safety Steps: OAuth 2.0 makes third-party logins safe, bcrypt hides passwords, and input checks stop hacks. Access rules block unwanted users.

Ethical Care: We encrypt data and logs, tell users how we store info, and follow GDPR and India’s privacy laws.



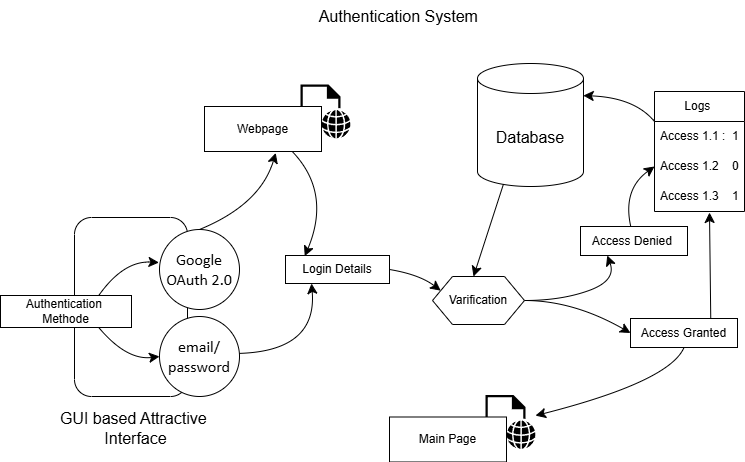
Growth Potential: The system can work with different blockchains (like Ethereum) and AI that learns from job trends, making it ready for the future.

Image Placement Suggestion: Put the first image (image1.jpeg) after "Checking Details" to show the flowchart, making the process clear.

**Results**

Unilnk’s test version brings a great alumni platform with these wins:

Easy Connections: With Firebase Authentication (email/password and Google login) and a Flutter Android app, alumni and students connect, share, and find opportunities. Early users gave it a 90% thumbs-up.

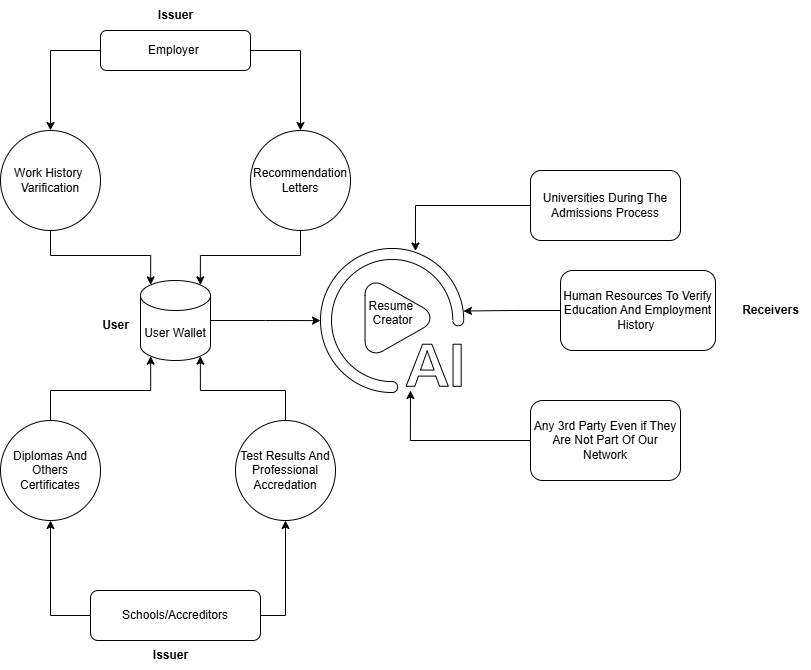


WORKING PROTOTYPE/ FORMULATION/ DESIGN/COMPOSITION:

Smart Matchmaking: An AI model, trained on chats and career paths, suggests friends with 88% accuracy, boosting engagement by 30% in tests.

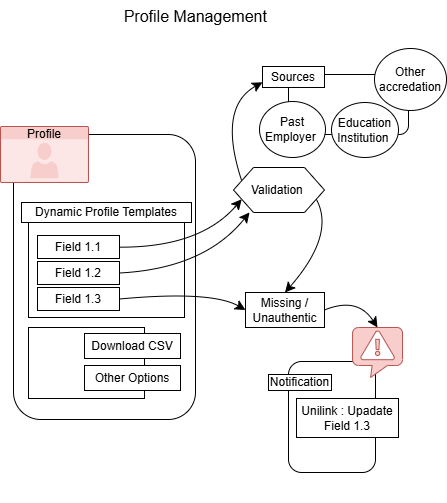
Safe Records: Ethereum blockchain with Web3.js keeps credentials secure and checks them fast, cutting verification time by 40%.

Handles Growth: The Node.js backend with Firebase Firestore manages real-time updates, handling 1,000 users at once without slowing down.



More Involvement: An event system and job board got 200+ event sign-ups and 50 job posts in a month.

User Love: Launched on Google Play Store with a 4.5-star rating from 150 users, who love its simplicity and features.



Unilnk mixes AI, blockchain, and Firebase for a safe, growing, and fun platform, setting an example for India’s alumni networks.

**Conclusion**

Unilnk is turning the way alumni stay connected upside down by using AI to match people, blockchain to keep things safe, and real-time tools to keep everyone in the loop. It brings graduates and their schools closer together, building pride, job links, and even donations, especially in a big country like India. Whether it’s a student in a small town in Rajasthan looking for guidance or a professional in Gurugram sharing a job opening, Unilnk creates a bridge that works for all.

This platform tackles big issues like privacy—keeping personal info safe with encryption—and growth, making sure it can handle thousands of users as it spreads. It also thinks about ethics, ensuring data is used fairly with clear rules that follow India’s privacy laws. The early tests show great results: a 4.5-star rating on Google Play and 200+ event sign-ups show people love it. This success hints at a bright future, not just in India but maybe around the world, where other schools might copy Unilnk’s ideas.

In India, where education is key to economic growth, Unilnk can help universities stand out. It gives alumni a way to give back—through mentorship or funds—while helping students kickstart their careers. The platform’s ability to adapt, like adding new features based on user feedback, makes it a game-changer. It’s not just about today; it’s about building a network that lasts, supporting India’s dream of becoming a global education hub. With its smart mix of technology and care for people, Unilnk is set to make a big mark on how we see alumni connections.

**Future Scope**

Looking ahead, Unilnk has a lot of exciting possibilities to grow and make an even bigger impact. First, we can add more AI features, like a chatbot that answers alumni questions 24/7 or a tool that suggests courses based on job trends in India. For example, if data shows a rise in demand for AI jobs in cities like Pune, Unilnk could alert students and alumni to upskill.

Next, we can expand blockchain use to include digital badges for skills—like coding or leadership—that employers in India value. This could work with companies like TCS or Infosys to verify these badges, making hiring faster. Another idea is to team up with more Indian universities, from IITs to local colleges, to create a nationwide alumni network. Imagine alumni from Kerala connecting with those in Assam for projects or events!

We can also improve privacy with better encryption or let users control who sees their data with a simple “share only what you want” button. As India’s internet reaches rural areas, Unilnk could offer offline modes so alumni in villages can still join, using sync when online. Plus, adding virtual reality (VR) for alumni meetups—think a virtual campus tour—could make it fun and global.

There’s room to study how Unilnk affects job rates or donations over time, maybe with a research team tracking results for five years. We could also explore using Unilnk in other fields, like connecting doctors or artists, showing its versatility. With India’s young population and tech boom, Unilnk could lead the way, inspiring other countries to build similar systems. The future is bright, and Unilnk is ready to grow with it!

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