📘 Project Title: TrueCred — Decentralized Proof of Skills & Experience

🔍 Overview

TrueCred is a blockchain-integrated credential platform that allows individuals to prove their **skills, certifications, and work experience** through a hybrid decentralized system. Users upload credentials, institutions and companies verify them, and the platform logs tamper-proof cryptographic hashes on-chain — without ever exposing personal data or files.

This makes TrueCred more than just a resume builder or certificate vault. It's a **trust infrastructure for careers**, combining features of LinkedIn, Naukri, Codilio, and Freelancer into one app — all backed by cryptographic integrity.

🕐 Project Goals

- Eliminate fake resumes and unverifiable claims in hiring
- Empower users with control over their credentials
- Provide companies and colleges with a secure way to verify documents
- Create tamper-proof digital resumes and public profiles
- Offer all-in-one professional growth tools (jobs, gigs, networking)

🧰 Feature Modules

Feature	Description
User Roles	Guest, Student, Freelancer, Professional, Recruiter, Institution, Admin
Profile Builder	Add education, work, skills, and upload documents
Document Verification	Credential/experience approval by verifier dashboard or email link
Blockchain Hashing	On verification, metadata is hashed (SHA256) and stored on-chain
Resume Generator	Creates downloadable resume using only verified credentials
Job + Gig Boards	Browse and apply to jobs/freelance gigs, filtered by verification status
Chat & Messaging	Recruiters and users can communicate in-platform
QR-Based Proof Viewer	Resume or credential scanable by anyone to verify on-chain authenticity
Admin Tools	Moderation, institution approval, analytics

🔐 Verification Architecture

Step-by-Step Flow:

1. User uploads certificate or enters job experience (with optional file)

2. System extracts metadata → builds claim string:
3. e.g., `Shubham Gupta | Android Intern | CNDS Lab | Feb 2025 - Jul 2025`
4. The string is hashed using SHA-256
5. The issuing institution/company verifies and signs the claim
6. Smart contract stores the hash + issuer address + timestamp on-chain
7. Public resume and QR viewer reflect the verification status

Only the **hash** goes on-chain. Actual files remain in **Firebase/IPFS**.

⚙️ Tech Stack

Layer	Technology
Frontend	Android (Java), React (Web), Tailwind CSS
Backend	Node.js + Express, MongoDB, Redis
Blockchain	Solidity Smart Contracts (Polygon/Mumbai)
Storage	Firebase Storage, optionally IPFS for decentralization
Identity	Firebase Auth, JWT, Metamask / WalletConnect (for verifiers)
Hashing	SHA256 (Node.js crypto lib or frontend SDK)
CI/CD	GitHub Actions, Vercel, Render

Actors & Permissions

Role	Capabilities
Guest	View public profiles, browse jobs, register
Student	Upload credentials, request verification, apply to internships/jobs
Freelancer	List services, apply to gigs, show verified skills
Professional	Build profile, verify experience, apply to jobs
Recruiter	Post jobs/gigs, view applicants, verify experiences
Institution	Approve certificates from their org, view dashboards
Admin	Moderate users, onboard institutions, resolve reports, view analytics

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🔍 What Goes On-Chain vs Off-Chain

Data	On-Chain ✅	Off-Chain ✅
Certificate Hash	✅	❌
Work Experience Hash	✅	❌

Data	On-Chain ✅	Off-Chain ✅
Actual Certificate File	❌	✅(Firebase/IPFS)
Personal Information	❌	✅
Verifier Signature	✅	❌

🔐Advantages of TrueCred

- ✅Tamper-proof credentials with cryptographic proof
- 🚫Zero-trust verification without exposing user data
- 🟡Real-time resume from verified entries only
- ✅One link (or QR) to verify any claim instantly
- 🔄Unified platform: proof + hiring + networking in one

📊Sample Use Case

Shubham uploads his Android internship certificate

CNDS Lab verifies it through their SkillChain dashboard

The system hashes the details and logs it to Polygon

Shubham's resume now shows a ✅verified internship

A recruiter scans his resume QR → confirms authenticity instantly

📌Final Statement

TrueCred aims to redefine digital trust in hiring, freelancing, and credentialing by replacing words with **proof** — and wrapping it in an experience simple enough for students, freelancers, and recruiters to adopt from day one.

Ready to go from a paper resume to a verifiable, digital identity? TrueCred is how we start.