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Idea Title

EduVault AI – A Smart Web + Mobile Hub for Verified Student Records and Career Empowerment

Proposed Solution

EduVault AI is a centralized web and mobile platform that digitally records, verifies, and showcases a student's academic and non-academic achievements. Unlike traditional ERP/LMS systems focused only on academics, it builds a holistic, verified portfolio covering academics, certifications, internships, volunteering, cultural activities, and leadership roles.

The solution integrates modern web development (React/Next.js for web, Flutter/React Native for mobile, Node.js backend, PostgreSQL/MongoDB database) with AI/ML modules for skill gap analysis, personalized recommendations, resume generation, internship matching, and predictive analytics.

Key Features

Student Module: Dynamic dashboard, AI skill suggestions, auto-skill tagging, profile status view with optional AI verification score, resume builder, and career skill graph.

Faculty Module: Dashboard with AI-prioritized document review, cross-checks with master database, and one-click NAAC/NIRF reporting.

Institutional Module: LMS/ERP integrations, accreditation-ready reports, and predictive analytics for student readiness.

Innovation

EduVault AI uniquely combines AI career intelligence + web/mobile accessibility, offering students verified digital portfolios, faculty reduced verification workload, and institutions streamlined accreditation processes.

👉 By aligning with NEP 2020 and Digital India, EduVault AI ensures every student's journey is digitally recognized, transparent, and future-ready.

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AI/ML Stack

Scikit-learn / XGBoost → for lightweight models (recommendations, ranking, probability scoring).

PyTorch / TensorFlow → for advanced models (skill graph analysis, predictive analytics).

spaCy / Hugging Face Transformers → for NLP-based smart search and skill tagging

Technical Approach

EduVault AI will be developed as a smart, scalable platform integrating modern web development with AI/ML.

Frontend: React.js/Next.js for responsive web and React Native/Flutter for mobile apps, styled with Tailwind CSS and charts for visual dashboards.

Backend: Node.js + Express for APIs, with Python microservices (FastAPI/Flask) handling AI tasks like skill recommendations, resume generation, and predictive analytics.

Databases: PostgreSQL for structured records, MongoDB for uploads/logs, and vector databases (Pinecone/Faiss) for semantic skill recommendations.

AI/ML Modules:

Lightweight ML (Scikit-learn, XGBoost) → skill suggestions, verification scoring.

Advanced ML (TensorFlow/PyTorch) → predictive analytics, skill gap analysis.

NLP (spaCy, Transformers) → fuzzy search and auto-skill tagging.

Deployment: Cloud-hosted (AWS/Azure/GCP) with Docker + Kubernetes for scalability, secure authentication via JWT/OAuth2.

Workflow: Students upload records → AI tags skills → staff validates → verified portfolio updates → AI powers guidance, analytics, and institutional reporting.

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Feasibility and Viability

EduVault AI is both technically and operationally feasible within SIH timelines. Using **React, Flutter, Node.js, PostgreSQL, and Python ML frameworks**, the platform can be prototyped quickly and scaled seamlessly on **cloud infrastructure (AWS/Azure)**. Open-source frameworks reduce cost, while modular APIs ensure integration with ERPs, LMS, and MOOC platforms.

Operational feasibility is strong:

- Students gain verified digital portfolios and AI career guidance.
- Faculty benefit from reduced validation workload through AI-prioritized document queues.
- Institutions receive accreditation-ready reports aligned with NAAC, NIRF, and NEP 2020.

Challenges include integration complexity, data privacy, resistance to change, and data migration. Risks like AI bias, faculty workload, or low student engagement are anticipated.

Mitigation strategies:

- End-to-end encryption and role-based access for security.
- Modular APIs for integration.
- Gamification and incentives for student engagement.
- Faculty training workshops and AI chatbot for onboarding.

Viability lies in scalability: pilot at one HEI, expand to J&K, then nationwide. Sustainability is ensured through a **freemium model** (basic free, advanced analytics via subscription) and government partnerships.

Thus, EduVault AI is not just feasible but a **future-ready Smart Education solution**.

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Impact and Benefits

EduVault AI has the potential to transform the student journey, faculty workflows, and institutional processes through a smart, AI-powered digital record system.

Impact on Target Audience:

- **Students:** Gain a verified, holistic digital portfolio that strengthens employability, higher education opportunities, and career readiness. AI-driven resume generation, skill gap analysis, and internship matching empower them with personalized career growth.

- **Faculty & Staff:** Experience reduced workload through AI-prioritized verification, automated report generation, and seamless ERP/LMS integration, enabling them to focus more on mentoring and innovation.
- **Institutions:** Improve efficiency, compliance, and accreditation readiness while aligning with **NEP 2020 & Digital India** initiatives.

Broader Benefits:

- **Social:** Encourages holistic development by valuing extracurriculars, volunteering, and leadership alongside academics. Builds a collaborative student community through AI-based peer matching.
- **Economic:** Saves time and resources in verification, reporting, and placement preparation. Enhances employability, directly contributing to workforce readiness and national economic growth.
- **Environmental:** Reduces paperwork and manual records by shifting to a digital-first approach, lowering carbon footprint.

Overall, EduVault AI creates a **transparent, efficient, and empowering ecosystem**, benefiting individuals, institutions, and society.
