PROBLEM STATEMENT

"The Indian education-to-employment bridge is badly broken, rendering more than 80% of graduates unemployable. Such devastating skill-gap and career confusion are a result of fundamental issues in educational institutions in providing sufficient, industry-relevant skill development. Thus, students have no guidance tailored to them and verifiable evidence of actual skills in the market, whereas employers are faced with unreliable resumes and the lack of ability to test actual talent – a problem intensely aggravated during economic crises, leading to huge talent mismatch and retraining costs causing recession."

Problems (The "Why"):
- **High Unemployability:** Over 80% of graduates are unemployable despite their degrees.
- **Student Confusion:** Graduates lack personalized career guidance, blindly chasing fleeting tech trends(no clarity on When, What should be done? For a better career).
- **Academic Disconnect:** Educational institutions fundamentally fail to cultivate industry-aligned skills.
- **Unreliable Credentials:** Rampant fake internships and exaggerated claims erode trust in resumes.
- **Economic Vulnerability:** Downturns acutely worsen talent mismatch, hindering national resilience.

IDEA TITLE

Solution (The "How" - SkillAgent's Core):

- **SkillAgent :** An AI-agent driven career companion platform built on Ethereum, designed to revolutionize education-to-employment.
- **Personalized AI Agent:** A dedicated AI mentor assigned from Day 1, continuously learning student(any individuals') interests, strengths, and goals to provide tailored guidance.
- **Dynamic Roadmap Planner:** Generates custom, adaptive learning paths (e.g., Web Dev, AI, Blockchain), Dynamic course suggestions that evolve with the student's progress and market trends according to their interests.
- **Integrated Progress & Engagement:** Automatically logs and verifies real progress (GitHub commits, course completions, hackathons) via APIs, simultaneously providing intelligent nudges and productivity tools to foster consistent and authentic learning.
- **Immutable Ethereum Recorder:** Logs all verified learning history and milestones onto the blockchain via smart contracts, creating a permanent, tamper-proof record.
- **Authentic NFT Generator:** Mints unique Skill NFTs for major achievements, serving as verifiable, digital badges of mastery owned by the student.
- **Trustless Resume-less Hiring:** Employers can directly view and trust a candidate's on-chain skill portfolio and NFTs, enabling efficient, merit-based job matching.

Technologies Used:

- **LangChain + GPT-4** – To build a conversational AI career agent that guides students continuously
- **GitHub API + Google Sheets** – To fetch real-time coding activity and course completions
- **Flask + Supabase** – For backend storage and user dashboards
- **Solidity + Hardhat** – For smart contract deployment and NFT minting
- **Ethereum (Polygon Testnet)** – For secure and cost-free blockchain recording of skills

Methodology:

- The AI Agent talks to the student, understands their interests and goals, and builds a personalized roadmap.
- The **Task Tracker** logs real-world progress using APIs (like GitHub, Google Sheets).
- Verified accomplishments are recorded on the **Ethereum blockchain** using smart contracts.
- The **NFT Generator** mints digital skill trophies (Skill NFTs) tied to student identity.
- Employers use a dashboard to view verified achievements and make resume-free hiring decisions.

FEASIBILITY AND VIABILITY

- **Feasibility:**
  - The MVP version is highly feasible within the hackathon timeframe using free tools and testnets. LangChain and GitHub APIs are beginner-friendly. Supabase offers a real-time backend without infrastructure setup. Smart contracts are deployable on Polygon Mumbai testnet with no cost.
- **Challenges:**
  - Preventing students from faking GitHub contributions
  - AI providing wrong career paths
  - Ethereum gas fees during large-scale use
- **Solutions:**
  - Use OAuth (GitHub Login) and certificate verification to ensure authenticity
  - Build a feedback loop into the agent to improve its suggestions over time
  - Deploy on Layer 2 chains like Polygon to reduce gas fees for production use

IMPACT AND BENEFITS

Impact:

SkillAgent enables students — especially from Tier 2 and Tier 3 colleges — to discover their career direction early. They get continuous mentorship, learn with focus, and prove their skills with verifiable records. It completely replaces the need for traditional resumes.

For employers, SkillAgent enables faster, trust-based hiring using on-chain data — removing the guesswork of interviews or fake profiles. Colleges can use it to boost placement results and track student performance accurately.

Benefits:

- **Individuals (Across All Stages):** SkillAgent serves as a **one-stop solution** for career development, guiding **school-going students, undergraduates, postgraduates, and even experienced professionals** looking for new opportunities. They get a clear, guided path and verifiable digital proof of their learning and skills, irrespective of their current career stage.
- **Companies & Recruiters:** Leverage trusted, on-chain skill graphs for resume-free hiring, ensuring precisely skilled talent that boosts operational efficiency, slashes retraining costs, and improves talent retention.
- **Colleges:** Improve placement outcomes, enhance student readiness, and accurately track performance.
- **Employed Individuals:** Experience greater job satisfaction due to optimal skill utilization, leading to improved career trajectories and personal fulfillment.
- **Nation:** Bridges the education-employment gap in a scalable, transparent way, directly fueling national economic productivity and growth.

100 users, ~15,000 API requests/month, broken down into monthly and annual costs in INR:

Category	Component	Monthly Cost (₹)	Annual Cost (₹)	Notes
AI Agent	OpenAI GPT-4 API (15K reqs)	₹1,14,750	₹13,77,000	₹7.65/request × 15,000 requests
Backend & Database	Supabase / Firebase	₹2,125	₹25,500	Scaling storage, auth, and API usage
Blockchain	Polygon Gas Fees (mainnet)	₹850	₹10,200	For NFT minting and occasional contract interactions
NFT Metadata	IPFS (Pinata Paid Plan)	₹850	₹10,200	For storing skill/NFT metadata
Frontend Hosting	Vercel + Custom Domain	₹170	₹2,040	Domain (₹850/year) + hosting (₹100–150/month)
Monitoring Tools	Sentry / LogRocket (optional)	₹1,275	₹15,300	For error/performance tracking
Security & Backup	SSL, encryption, backups	₹850	₹10,200	Data integrity, security compliance, backups

	Monthly Total (₹)	Annual Total (₹)
Estimated Budget	₹1,20,870 – ₹1,22,870	₹14,50,440 – ₹14,75,440