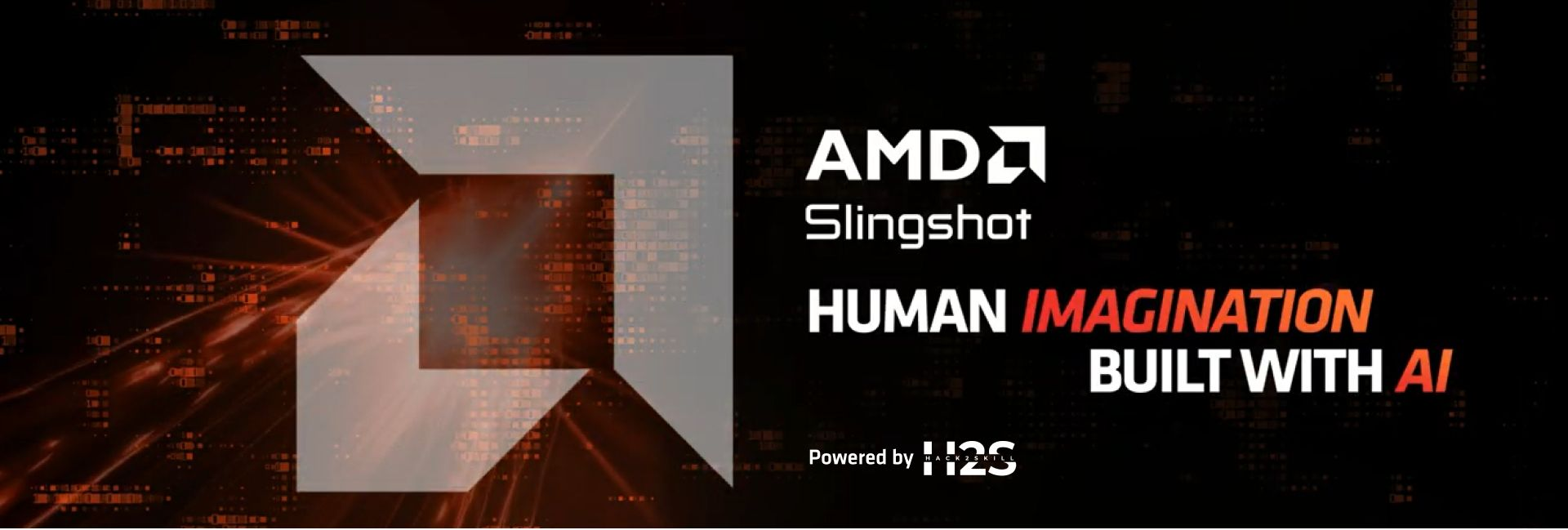


Team Details

- ➔ Team name - AutizHacks
- ➔ Team leader name - Agniv Dutta

Problem Statement - Students and early professionals struggle with unclear career direction and generic learning recommendations that don't address skill gaps or progression paths. An AI-driven, explainable roadmap system is needed to analyze individual goals and generate structured, personalized learning plans.

Brief about the idea

1. PathPilot is an **AI-powered career roadmap generator** that creates **personalized learning plans** based on a user's **education, existing skills, career goals, learning pace, and availability**.
2. It performs a **structured skill gap analysis** to identify **strengths and missing competencies** required for the **target career**.
3. The system generates a **stage-wise roadmap** covering **foundation, intermediate, and advanced learning levels**.
4. It provides **estimated timelines, recommended certifications, and actionable next steps** to achieve **job readiness**.
5. PathPilot also suggests **alternative adjacent career paths** to expand **opportunities** and reduce **uncertainty**.
6. By offering **clear, explainable guidance**, it helps learners **reduce confusion, build confidence, and follow a focused, outcome-driven skilling journey**

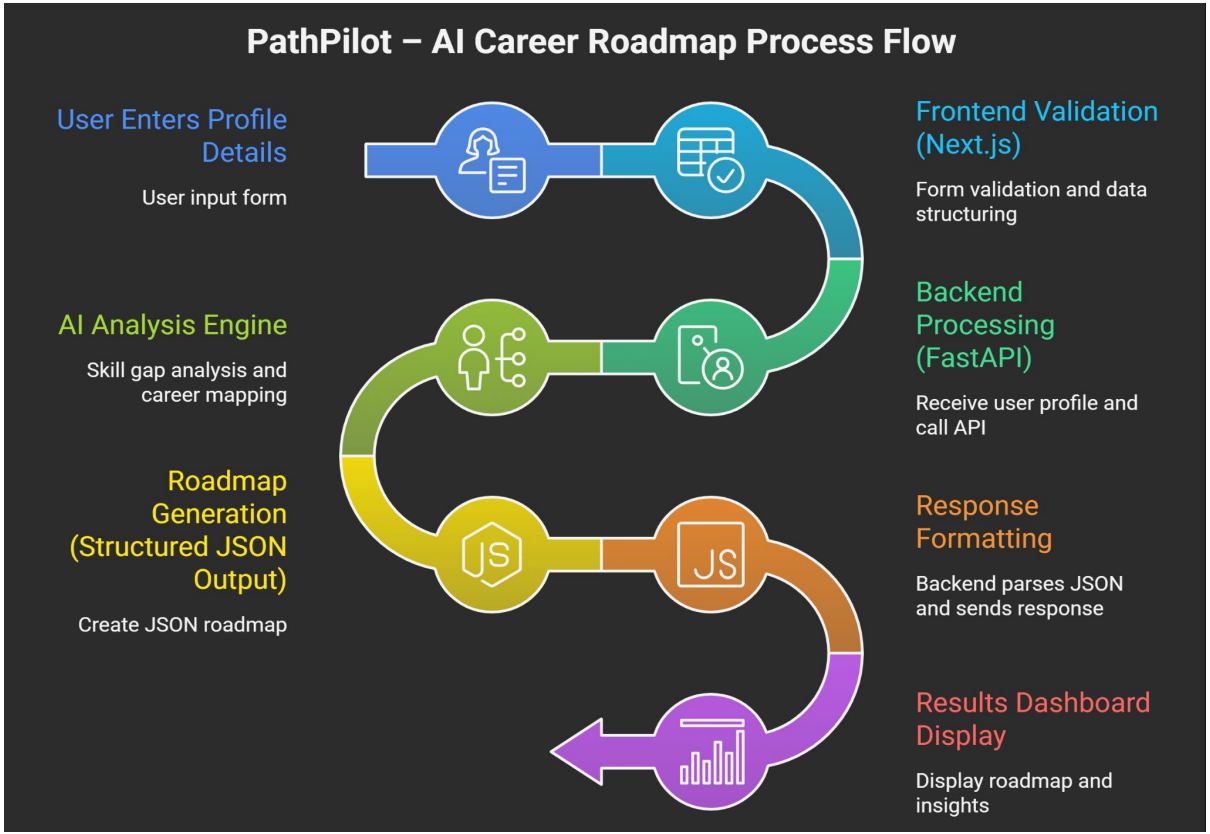
Opportunities

- Unlike generic career platforms that provide **static recommendations**, PathPilot generates a fully **personalized, stage-wise roadmap** based on a learner's **education, skills, goals, pace, and availability**.
- It performs an **explainable skill gap analysis**, clearly identifying **strengths and missing competencies** required for a target career, increasing **transparency and trust**.
- The solution focuses on **outcome-driven planning**, structuring learning into stages: **Foundation → Intermediate → Advanced stages** to ensure **mastery-based progression**.
- By providing **realistic timeline estimates** and **certification guidance**, it converts **vague career goals** into **actionable monthly plans**.
- It reduces **confusion and anxiety** by replacing **scattered resources** with a **clear, structured, and adaptive learning path** aligned to **job readiness**.
- Its unique value lies in combining **personalization, explainability, structured progression, and alternative career suggestions** into one **integrated AI-powered skilling assistant.**

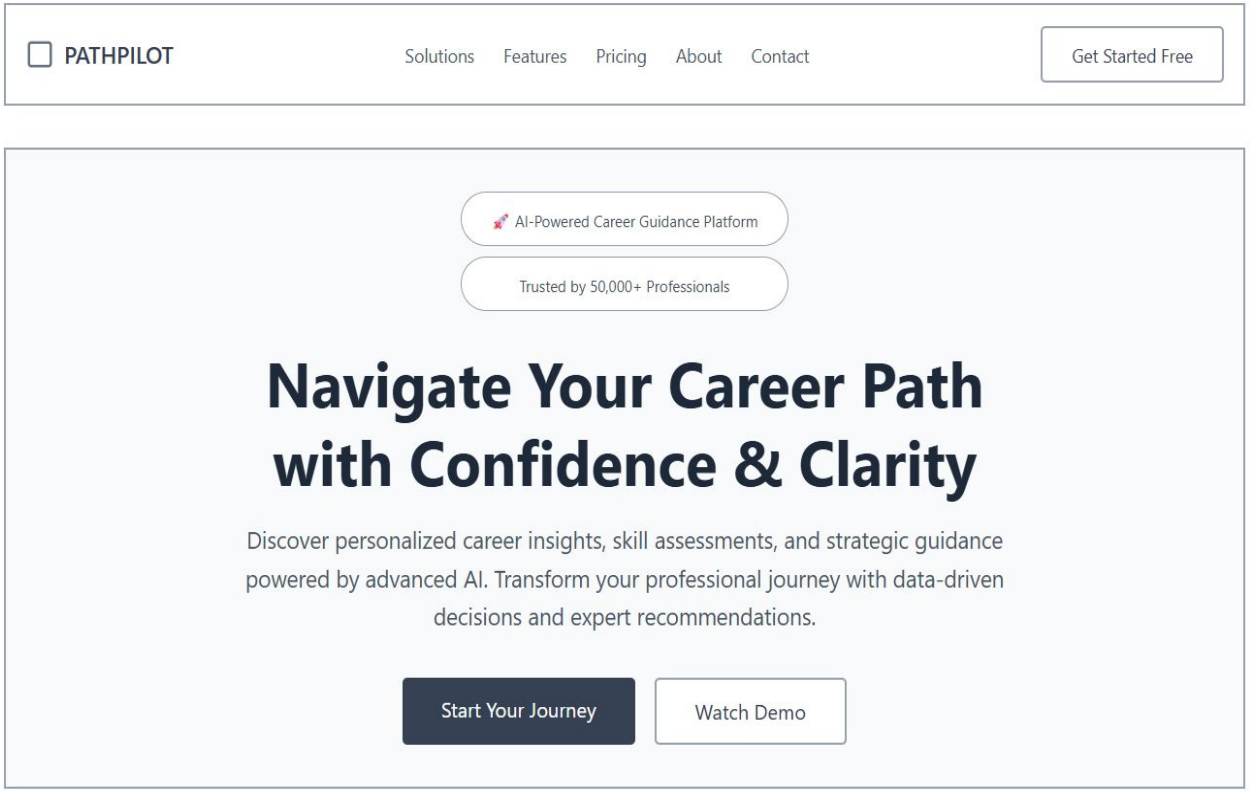
List of features offered by the solution

1. **Personalized Profile Intake:** Captures education level, field of study, existing skills, career goals, learning pace, weekly availability, and preferred location.
2. **AI-Generated Career Roadmap:** Produces a structured, stage-wise learning path (Foundation → Intermediate → Advanced) tailored to individual profiles.
3. **Skill Gap Analysis:** Identifies current strengths and missing competencies required for the target role with clear, explainable reasoning.
4. **Timeline & Learning Plan Estimation:** Provides realistic month-wise timelines based on user availability and pace.
5. **Certification & Skill Recommendations:** Suggests relevant certifications and skills aligned with industry expectations.
6. **Alternative Career Path Suggestions:** Recommends adjacent career options to expand opportunities and reduce career uncertainty

Process flow diagram or Use-case diagram



Wireframes of the proposed solution



LOGO: PATHPILOT | Home | Solutions | Services | About | Contact | [BUTTON] Free Consultation

STEP 1 OF 3

[HEADING] Build Your Profile

[TEXT] Select your background to generate your tailored career roadmap.

Profile completion 0%

[PROGRESS BAR]

CURRENT EDUCATION LEVEL

Select your education level...

[DROPDOWN FIELD]

BACKGROUND / FIELD OF STUDY

Select your background...

[DROPDOWN FIELD]

PRIMARY CAREER GOAL

Select your career goal...

[DROPDOWN FIELD]

PREFERRED LEARNING PACE

How fast can you learn?

[DROPDOWN FIELD]

AVAILABLE WEEKLY HOURS

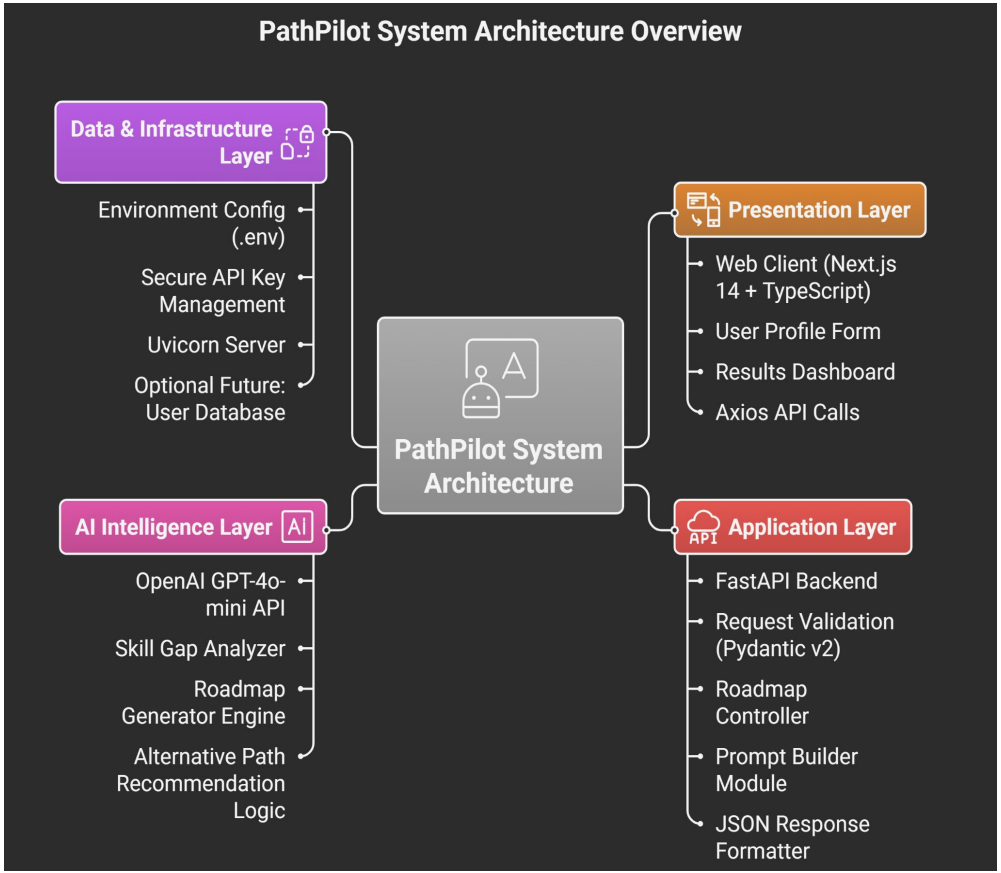
Hours per week you can commit...

[DROPDOWN FIELD]

TARGET JOB LOCATION

Select your location

Architecture diagram of the proposed solution



Technologies to be used in the solution

Frontend Technologies

- **Next.js 14 (App Router)** – Scalable, SEO-friendly React framework
- **TypeScript** – Type-safe, maintainable codebase
- **Tailwind CSS** – Responsive and modern UI styling
- **Axios** – API communication between frontend and backend

Backend Technologies

- **Python 3.11+** – Core backend programming language
- **FastAPI** – High-performance API framework
- **Uvicorn** – ASGI server for running FastAPI
- **Pydantic v2** – Data validation and structured request handling

AI & Intelligence Layer

- **OpenAI GPT-4o-mini (configurable)** – Generates structured career roadmaps
- JSON-based response design for explainable, stage-wise output

Architecture

- Client–Server architecture
- REST API communication
- AI-driven dynamic roadmap generation
- Structured JSON output for transparency and explainability

Usage of AMD Products/Solutions

- **AI Inference Acceleration:** Career roadmap generation can run on AMD-powered infrastructure (EPYC CPUs / Instinct GPUs) for fast, real-time AI responses.
- **Scalable Backend Performance:** Multi-core AMD EPYC processors efficiently handle concurrent API requests and dynamic roadmap generation.
- **Optimized AI Workloads:** AMD ROCm ecosystem enables efficient AI model execution and future fine-tuning capabilities.
- **Energy-Efficient Computing:** High performance-per-watt ensures cost-effective and sustainable deployment of AI-driven education platforms.

Estimated implementation cost (optional)

1) **Development Cost:** ₹0 (self-built using open-source technologies).

2) **Domain:** ₹800 – ₹1,000 per year (.com / .in).

3) **Hosting:** ₹0 – ₹5,000 per year (Vercel free tier + low-cost backend + free database tier).

4) **AI API Usage:** ₹10,000 – ₹30,000 per year (GPT-4o-mini with caching and rate limits).

5) **Total Estimated Year-1 Cost: ₹12,000 – ₹35,000** for a fully functional MVP.

Prototype Assets (Optional)

- ➔ GitHub Public Repository Link
- ➔ Demo Video Link (Max: 3 Minutes)

Github Repository Link:
https://github.com/AdityaC-07/PathPilot

Demo Video Link:
https://drive.google.com/file/d/1fr5g-Id6iBnx7jCcoOaQ7s9xJhJ3HoYw/view?usp=sharing

MVP Link:
path-pilot-vtcx.vercel.app/


AMD
Slingshot
HUMAN IMAGINATION
BUILT WITH AI
Powered by H2S

Thank you!