

Intelligent Academic Path Planner for University Students

Project Vision

The platform will serve as a **personalized, web-based academic and career planner** for university students. It will leverage **retrieval-augmented generation (RAG)** and smart algorithms to generate optimal, semester-wise study paths tailored to a student's major, future goals, and personal circumstances.

Core Features

1. Curriculum-Aware Path Planning

- Generates optimal semester-wise plans based on degree requirements, course prerequisites, and course availability.
- Uses a **graph visualization** to clearly show what courses to take and in what sequence.

2. Personalization by Goals

- For undecided students → Suggests multiple learning paths and potential career outcomes.
- For goal-driven students (e.g., "Cloud Engineer") → Builds a tailored roadmap that maximizes relevance.

3. Holistic Development

- Suggests **minors** and complementary electives to make students well-rounded.
 - Recommends **extracurriculars** (clubs, LinkedIn building, open-source contributions, etc.) aligned with student goals.
-

Advanced Enhancements

1. Dynamic Scheduling with Real-Time Updates

- Pulls live course availability (semester offerings, full/closed classes, time conflicts).
- Provides smart alternatives when ideal courses aren't available.

2. Conversational Assistant (AI Chatbot)

- Answers academic and career queries such as:
 - “Can I graduate early if I take summer classes?”
 - “Which electives are best for machine learning specialization?”
- Provides instant guidance without needing to wait for advisor meetings.

3. Mental Health & Workload Balancing

- Optimizes semester plans not just by credit count, but also by **difficulty mix**.
- Offers lighter schedules for students who want to work part-time or need balance.

4. Gamification & Milestone Tracking

- Progress bars for completing prerequisites and degree milestones.
- Achievement badges for key steps like *“First Project Published,” “Internship Ready,” “Capstone Completed.”*

5. Career & Recruiter Skill Alignment

- Continuously analyzes job market data to show how well a student's current skill set matches recruiter expectations.
- Highlights **skill gaps** and suggests courses, projects, or certifications to fill them.

6. Live Events & Micro-Credentials

- Integrates with university and external feeds to recommend nearby **hackathons, workshops, bootcamps, and certifications** that fit into the student's learning path.

Student Impact

- **Clarity:** Students can see their full journey at a glance.
- **Confidence:** Know how today's course/skill choices affect tomorrow's career.
- **Balance:** Avoid burnout with tailored workload planning.
- **Motivation:** Stay engaged through milestones, progress tracking, and opportunities beyond the classroom.