

Problem Statement - 2 : Develop AI-driven solutions to create personalized learning plans tailored to individual academic goals and aspirations.

Team Name : Neuratech

Team Management :

-  **Sumeet Gupta - LLM, Machine Learning (Team Lead)**
-  **Saherish Kazi - Frontend, Database Management**
-  **Talha Ansari - Machine Learning , Backend & APIs**



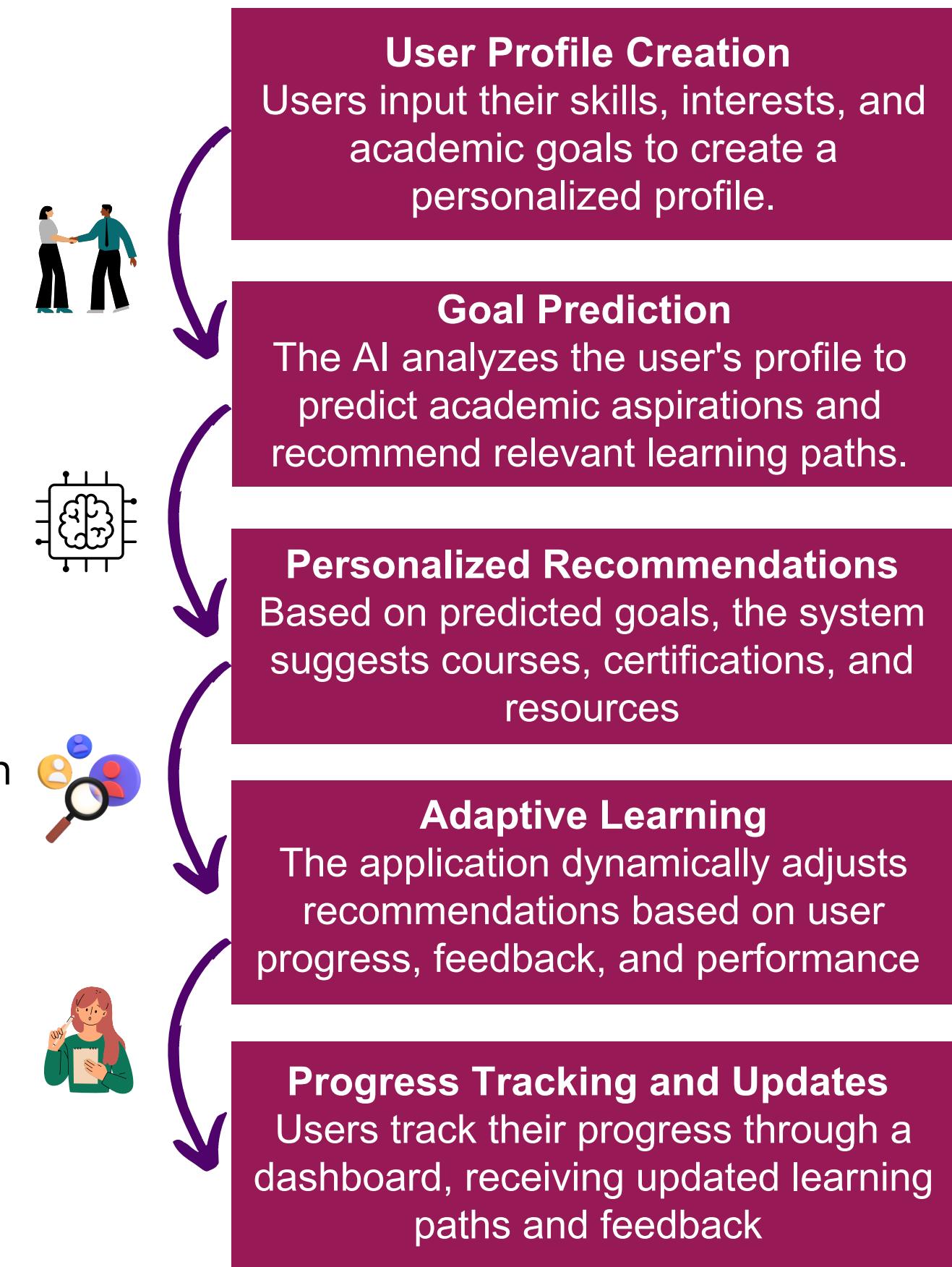
Brief about the idea

Current Challenges

The challenge involves using AI to create personalized learning plans aligned with individual goals and aspirations. By predicting user needs and adapting recommendations dynamically, the solution aims to improve learning efficiency and engagement through tailored experiences.

Proposed Solution - IRIS

- **AI-driven goal prediction:** Use machine learning to analyze user data and predict academic goals for personalized learning profiles.
- **Course and certification recommendation:** Build a recommendation engine to suggest tailored learning paths, courses, and certifications based on user goals.
- **Adaptive learning algorithms:** Implement models that adjust the learning plan based on user feedback and performance.
- **AI-based counselor:** Design an AI counselor to provide personalized advice, motivation, and resource recommendations.
- **Gamification and engagement:** Integrate quizzes, challenges, and progress tracking to enhance user engagement and motivation.
- **Roadmap and dashboard:** Create an interactive dashboard to track progress and adjust learning paths based on goals and feedback.



Technical Approach

User Interface and Experience

React, Redux, Pure CSS, Material UI, Chartjs



React & Chartjs builds a dynamic interface for personalized learning dashboards, while Redux manages state for smooth data flow. Pure CSS and Material-UI enhance UI/UX, ensuring responsiveness across devices

Data Storage and Management

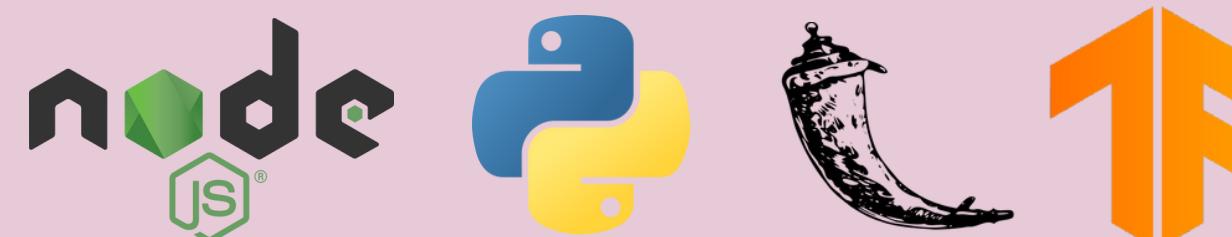
MongoDB, Firebase, AWS S3



MongoDB stores user profiles, preferences, and progress data, with Firebase handling real-time updates. AWS S3 manages large assets like video responses. This setup ensures efficient, scalable, and consistent data handling across services.

Backend and Application Logic

Node.js, Python, Flask, TensorFlow, Transformer



Node.js and Express power APIs, while Python and Flask manage ML tasks like goal prediction and dynamic learning updates. TensorFlow deploys AI models, and Transformer enable LLM-based features like AI counseling and summary

Scalability and b

Performance

Docker, Kubernetes, AWS EC2, Load Balancers



Docker ensures consistent deployments, while Kubernetes automates scaling of microservices. AWS EC2 handles workload spikes, and load balancers distribute traffic evenly, ensuring seamless scalability and high availability as the user base grows.

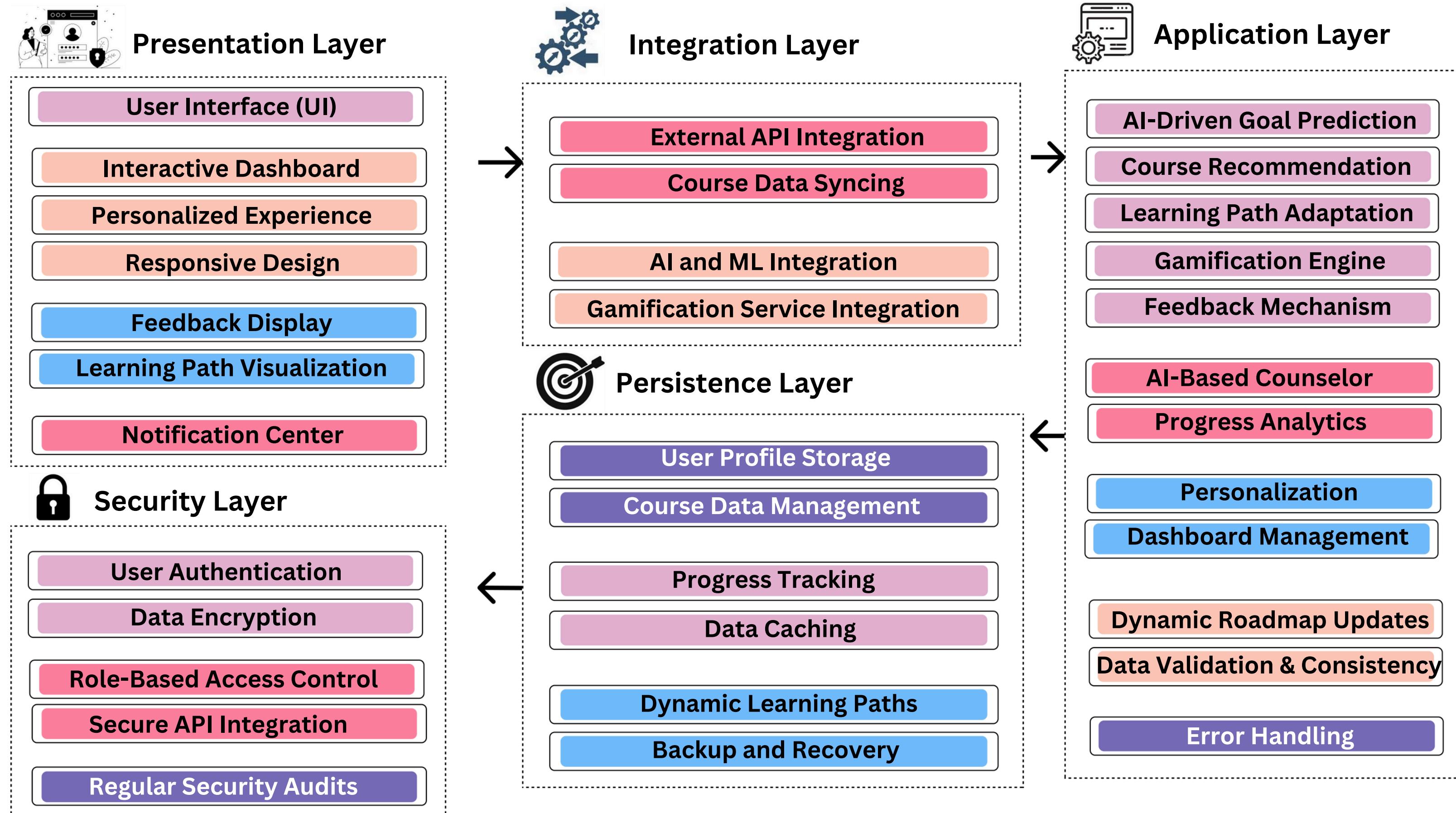
AI and Recommendation Engine

Hugging Face Transformers, Scikit-learn, PaddleOCR

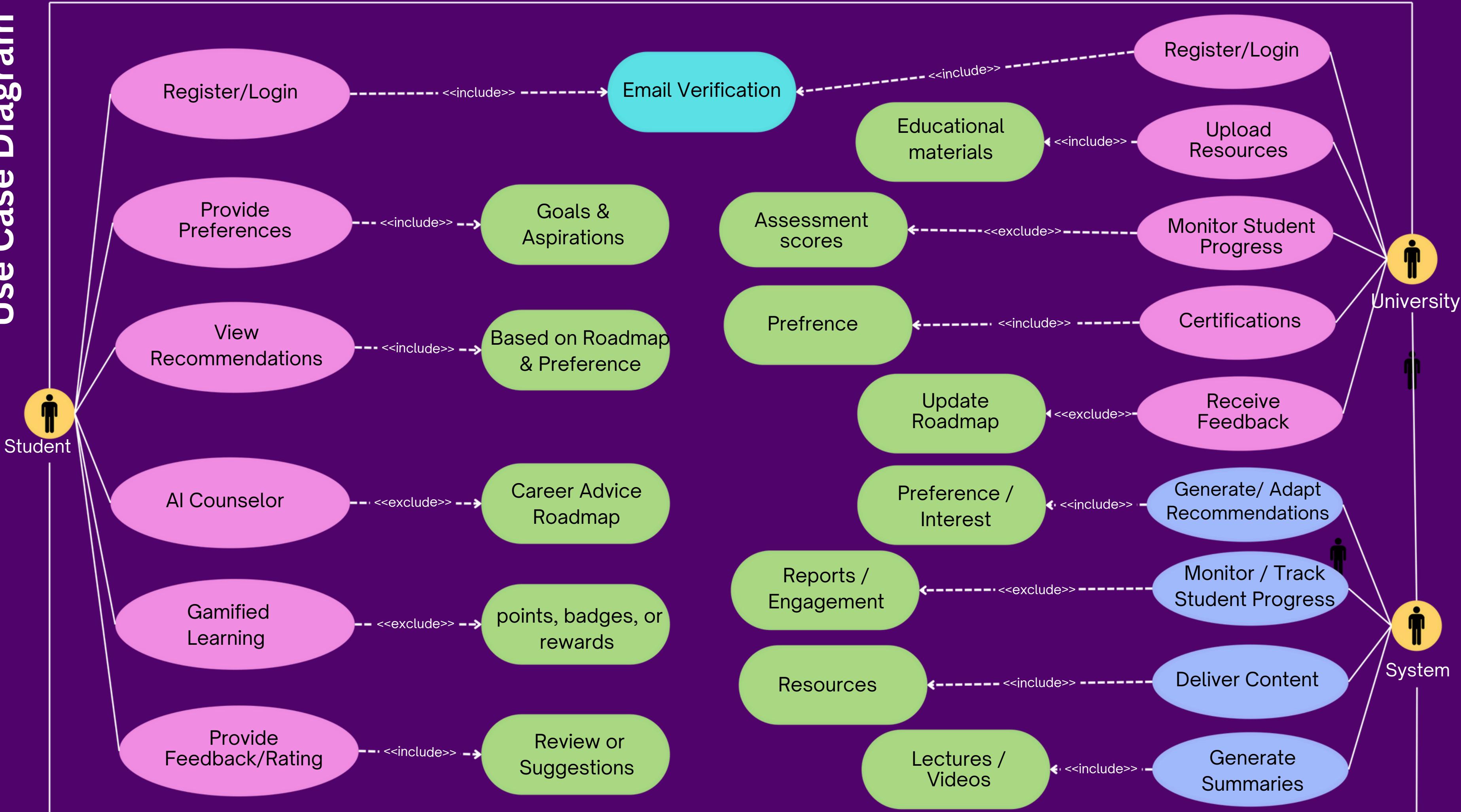


Hugging Face Transformers power LLM features like Q&A generation and summaries. Scikit-learn implements collaborative filtering for personalized recommendations. PaddleOCR extracts text from resources to enhance user insights and analysis.

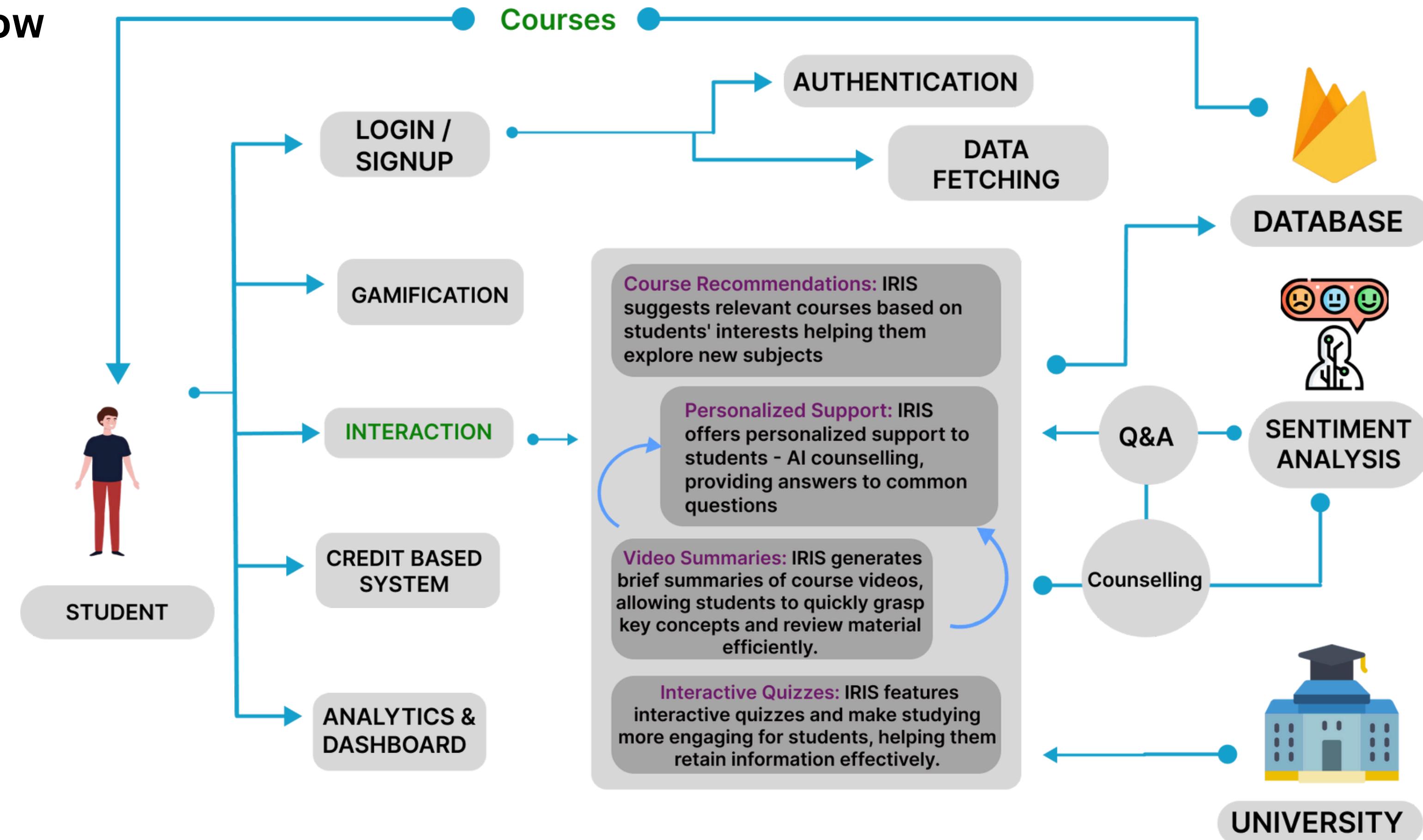
Architecture Diagram



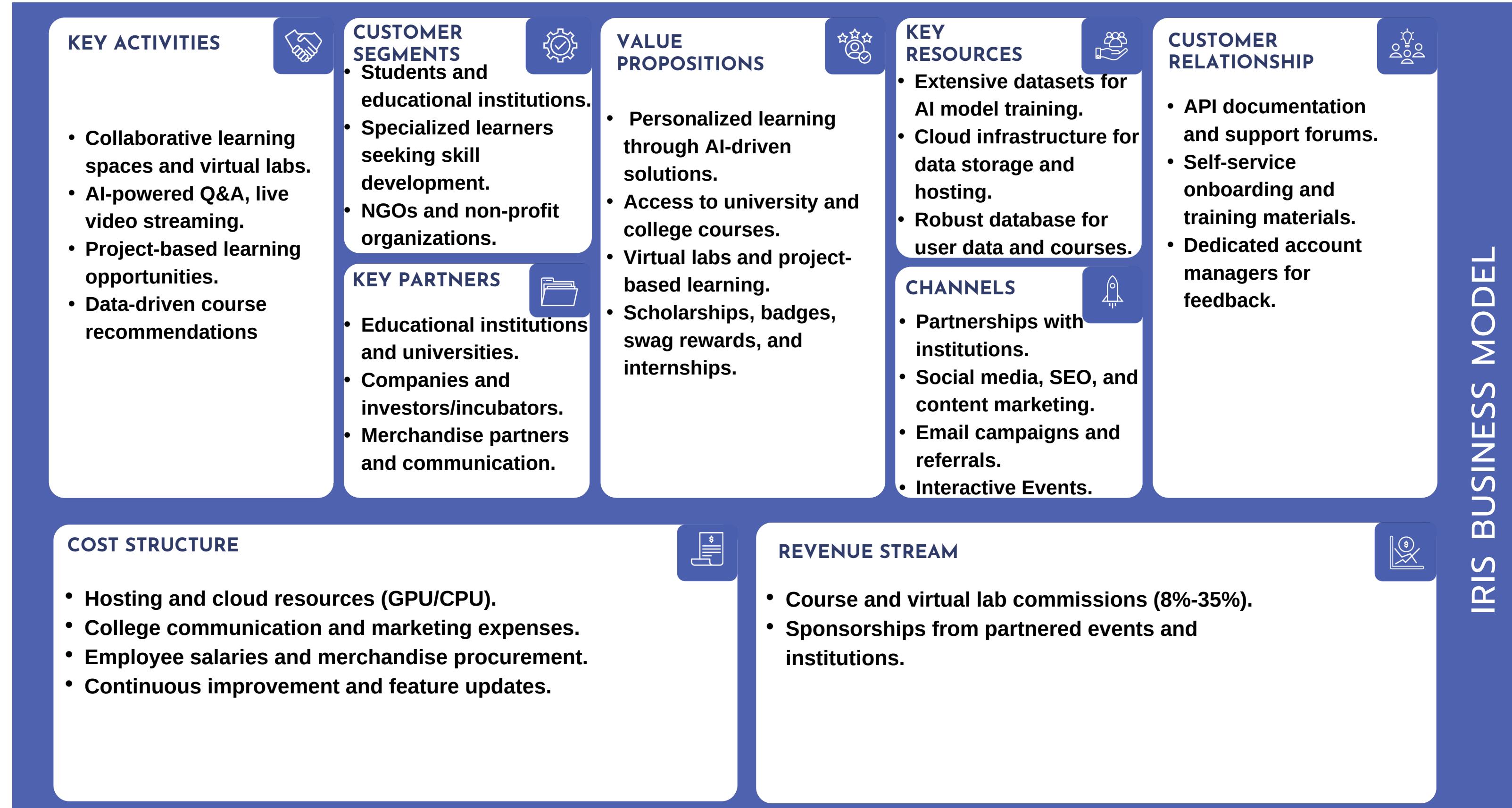
Use Case Diagram



Process Flow

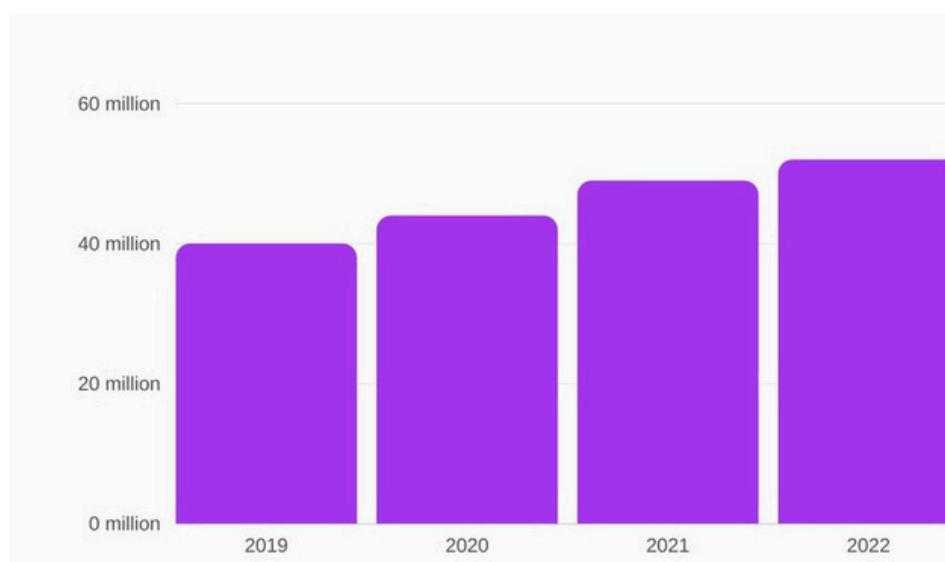


Business Model



Market Research

Udemy: Number of Learners



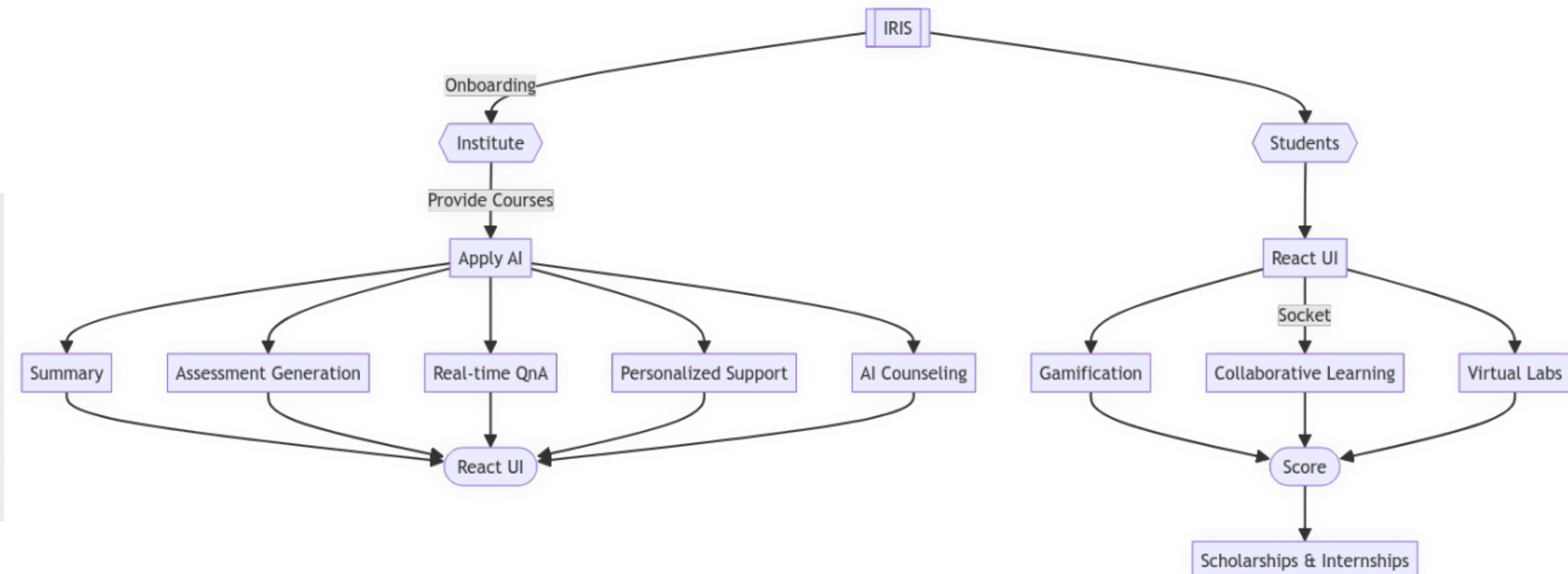
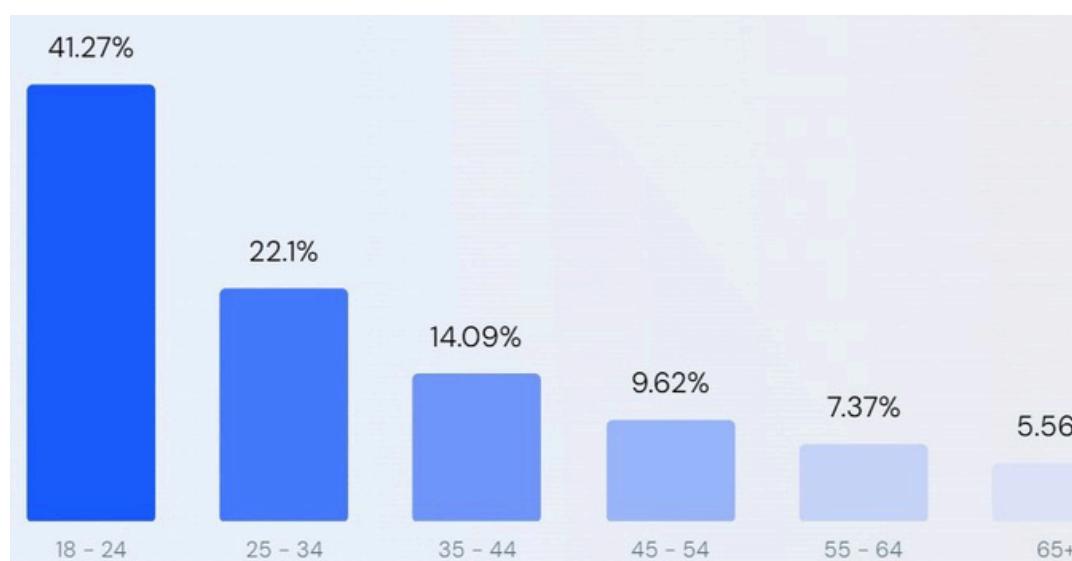
Udemy: Users Based on Country

Country	Number of Users	Percentage
United States	122,597,800	15.86%
India	122,211,300	15.81%
Brazil	43442600	5.62%
United Kingdom	24,658,700	3.19%
Turkey	24,194,900	3.13%
Others	435,894,700	56.39%

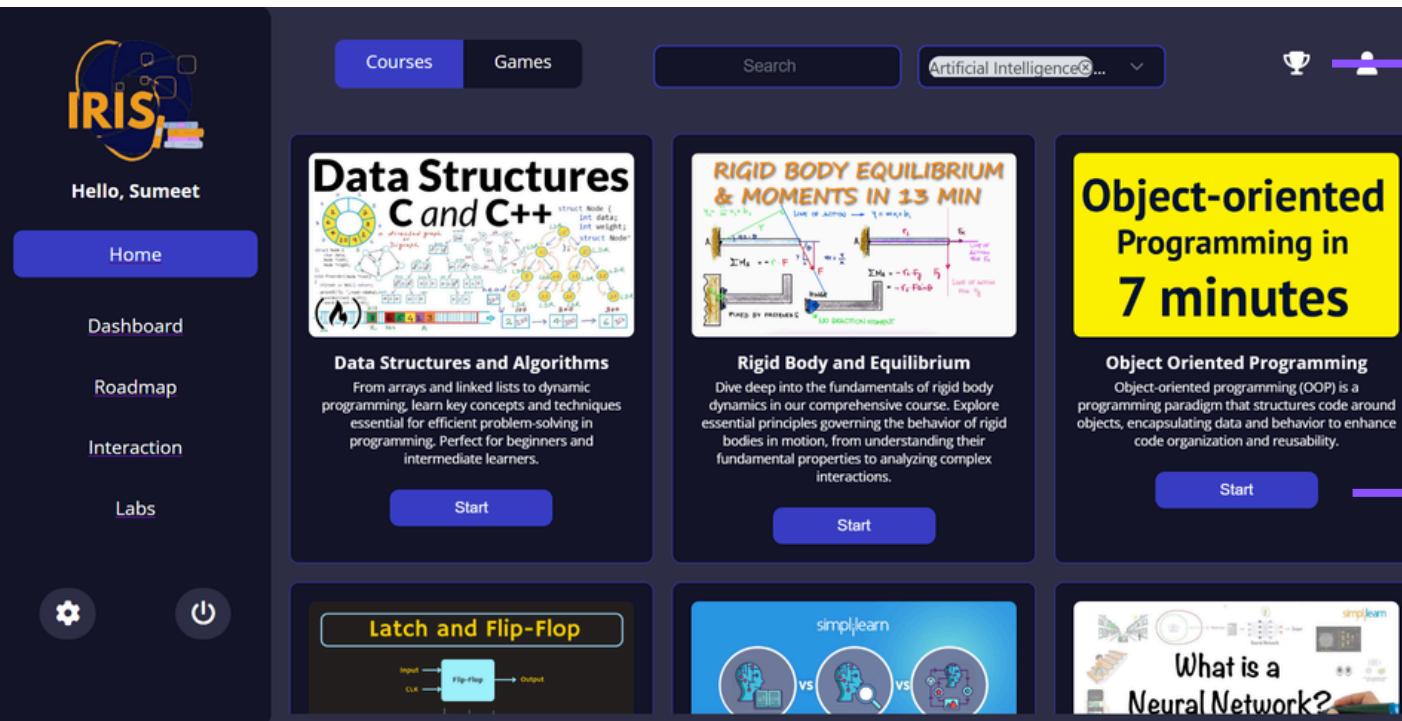
Sources - NIRF,
AISHE, etc

Tier 1 : 5% Tier 2 : 20%-30%
 Tier 3 : 70%-80% Tier 2
 and 3 contains the most
 our targeted amount of
 Audience.

Unacademy: Age Distribution



Wireframes

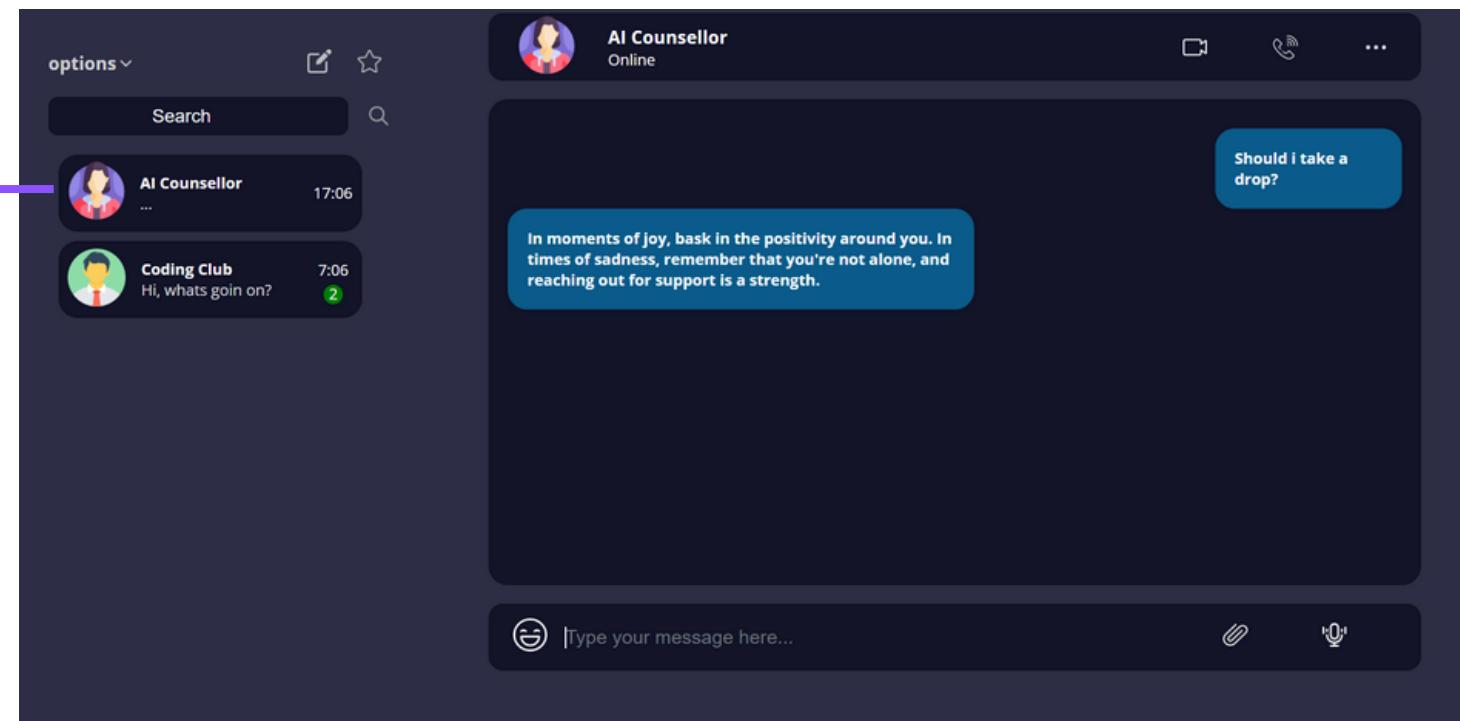


This wireframe shows the home screen of the IRIS platform. It features a sidebar with navigation links: Home, Dashboard, Roadmap, Interaction, and Labs. The main area displays a grid of course cards. One card for 'Data Structures C and C++' includes a diagram of a linked list. Another card for 'Rigid Body Equilibrium & MOMENTS IN 13 MIN' shows a mechanical system with force vectors. A third card for 'Object-oriented Programming in 7 minutes' has a yellow background and a 'Start' button.

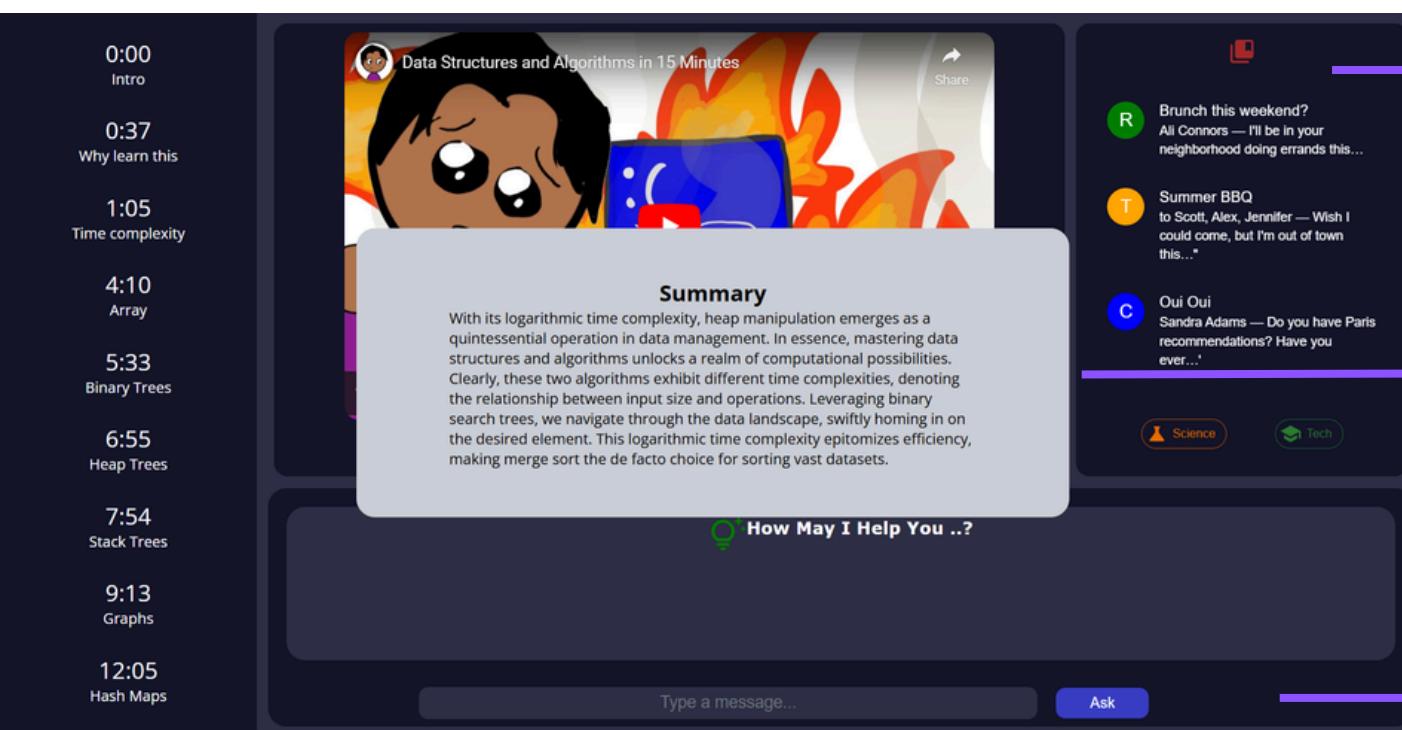
Certification/Rewards

AI Based Counselor

Recommended Courses



This wireframe shows a messaging interface titled 'AI Counsellor Online'. It displays a conversation between the user and the AI counsellor. The AI counsellor sends a message: 'In moments of joy, bask in the positivity around you. In times of sadness, remember that you're not alone, and reaching out for support is a strength.' The user responds with 'Should I take a drop?'.



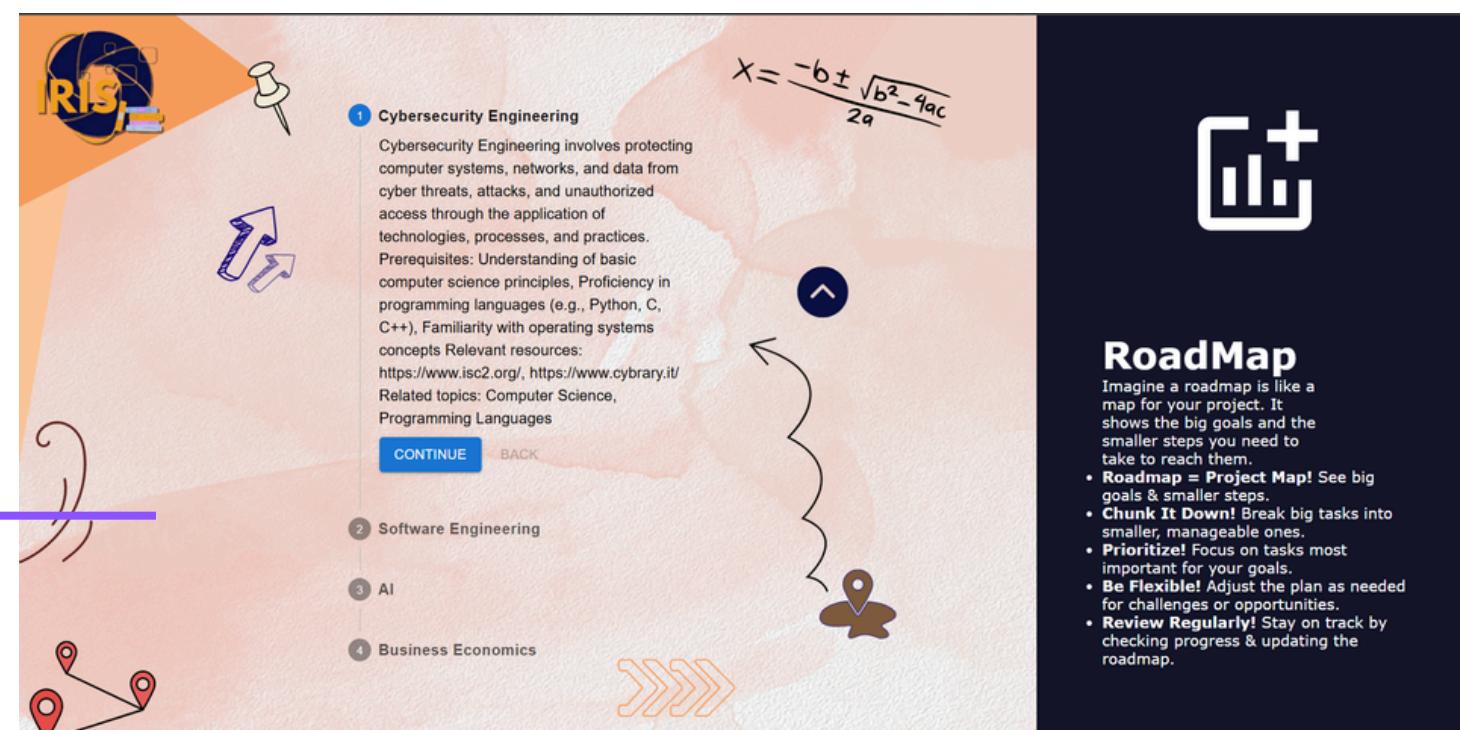
This wireframe shows a course summary for 'Data Structures and Algorithms in 15 Minutes'. It includes a summary section with text about binary search trees and merge sort, and an 'Ask' section with a 'How May I Help You ..?' button. On the left, a sidebar lists course topics with their respective times: Intro (0:00), Why learn this (0:37), Time complexity (1:05), Array (4:10), Binary Trees (5:33), Heap Trees (6:55), Stack Trees (7:54), Graphs (9:13), and Hash Maps (12:05).

AI Based Assessment
based on Course

Summary of Course

Preference based Roadmap

AI Based QA Based on Course



This wireframe shows a 'RoadMap' section. It features a large hand-drawn style illustration of a road map with various locations marked by pins and arrows. To the left, numbered steps are listed: 1. Cybersecurity Engineering, 2. Software Engineering, 3. AI, and 4. Business Economics. A mathematical formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ is also visible. On the right, there's a section titled 'RoadMap' with tips: 'RoadMap = Project Map! See big goals & smaller steps.', 'Chunk It Down! Break big tasks into smaller, manageable ones.', 'Prioritize! Focus on tasks most important for your goals.', 'Be Flexible! Adjust the plan as needed for challenges or opportunities.', and 'Review Regularly! Stay on track by checking progress & updating the roadmap.'