TED UNIVERSITY

SENG 492 Senior Project 2

MY Gen AI Services Super App

Multidisciplinary Delivery Assessment

19.04.2025

Team Name: DBU

Team Members:

Deniz ÖZCAN, 33577146512, Software Engineering

Betül Ülkü YURT, 11056264926, Software Engineering

Umut ŞAHİN, 11597931646, Software Engineering

Supervisor:

Emin Kuğu

Jury Members:
Tansel Dökeroğlu
Kasım Murat Karakaya

1. Introduction *3*

2. Objectives *3*

3. Project Overview *4*

3.1 Industrial Design Contribution *4*

3.2 Our Software Engineering Contribution *4*

4. System Architecture *4*

5. Multidisciplinary Integration *6*

6. Future Work *6*

7. Conclusion *7*

UX/UI Design Feedback Report *8*

Project Title: AI-Powered Moodboard Generator as a Mini App

Departments Involved:

- Software Engineering
- Industrial Design

1. Introduction

This multidisciplinary project combines the fields of software engineering and industrial design to create an innovative, user-driven AI solution. Our project involves the development of a modular web platform that enables users to create, customize, and manage mini applications powered by various artificial intelligence models. The concept is similar to ChatGPT, but instead of a single conversational interface, it allows users to build feature-specific mini apps tailored to particular use cases, such as image generation, text summarization, voice generation, and more.

The industrial design component contributes a concept for generating personalized moodboards. These moodboards consist of four images that reflect the user's emotional state, artistic preferences, current environment, and musical taste. This is achieved through the use of real-time weather data, Spotify listening history, and user-specified artistic directions.

Our project can be integrated with the industrial design project to help streamline and enhance the moodboard creation process. By leveraging our AI-powered platform, we offer a customizable and intuitive interface for generating visually compelling moodboards that reflect both environmental and personal user data.

2. Objectives

- Develop a user-friendly mini app within our AI platform to generate moodboards.
- Enable the customization of AI behavior using prompts and model selection.
- Combine real-time data sources (weather and music listening history) to drive moodboard generation.
- Merge artistic vision with machine-generated creativity in a meaningful and coherent manner.
- Create a reusable framework where users can save and regenerate moodboards as needed.

3. Project Overview

3.1 Industrial Design Contribution

- Designed the concept of moodboards composed of four AI-generated images.
- Defined aesthetic guidelines to ensure visual consistency and thematic relevance.
- Determined the parameters for input data, including current weather, Spotify listening data, and stylistic prompts from users.
- Established a system for evaluating and iterating on moodboards based on emotional and artistic coherence.

3.2 Our Software Engineering Contribution

- Developed a modular web platform that supports the creation and management of AI-driven mini applications.
- Implemented a user interface that allows users to select models, input prompts, and customize AI output behavior.
- Integrated third-party APIs to access real-time weather conditions and Spotify user data.
- Built the backend logic for data processing and feeding input into AI models such as DALL·E or Stable Diffusion.
- Enabled features such as saving user mini apps, regenerating outputs, and editing existing moodboards.

4. System Architecture

Inputs:

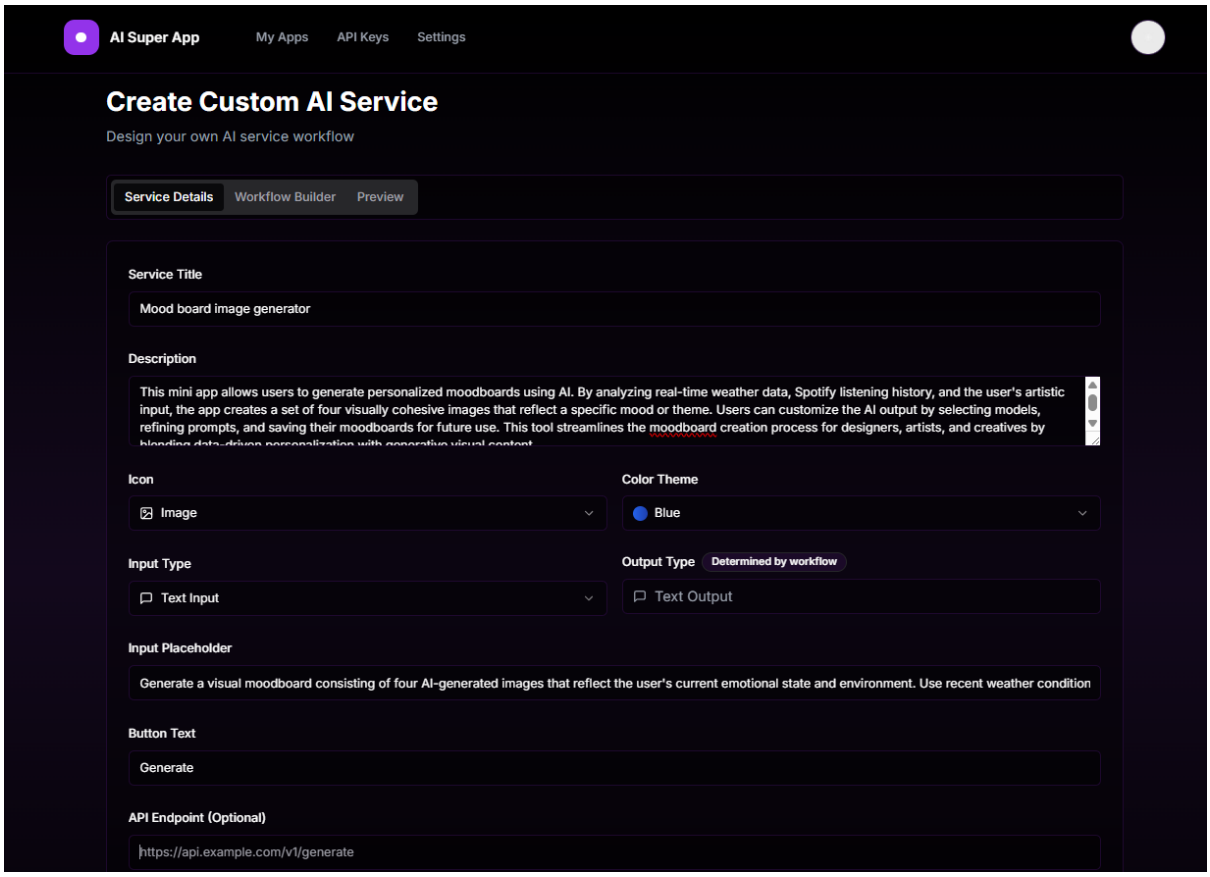
- User Prompts: Users describe the desired mood or theme for the moodboard (e.g., "nostalgic autumn evening").
- Weather API: Retrieves current conditions (e.g., cloudy, rainy, sunny).
- Spotify API: Analyzes the user's recent listening history for emotional or thematic elements (e.g., melancholic, upbeat).

Processing:

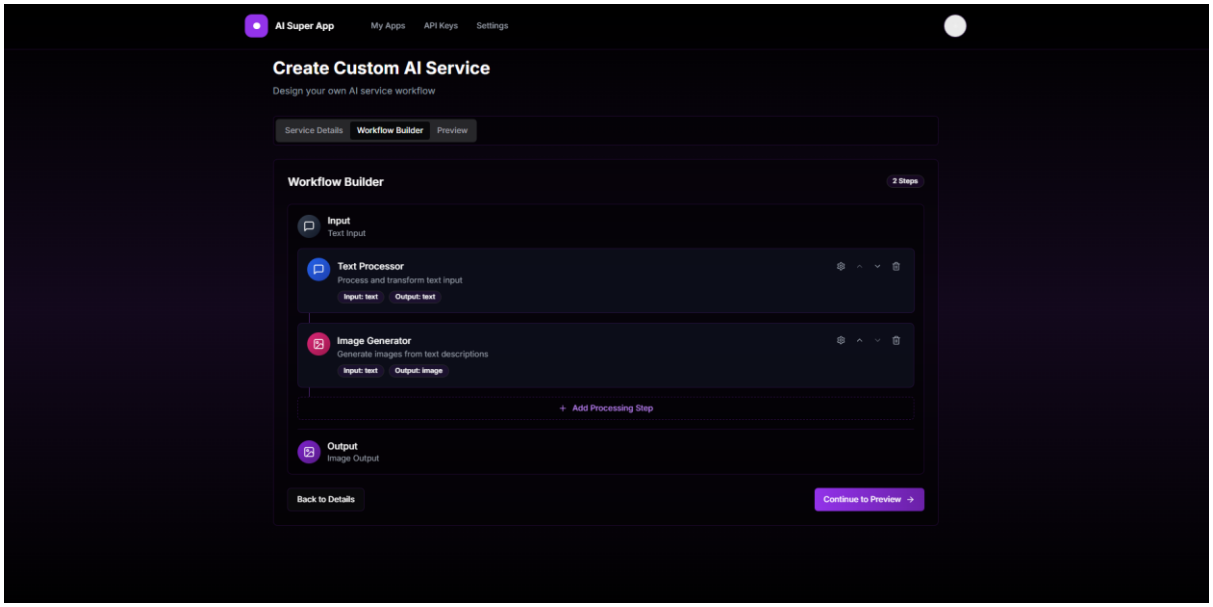
- AI model is selected based on the user's input (e.g., image generation model like Stable Diffusion).
- Prompt is constructed combining weather, Spotify data, and user input.
- AI generates four images that reflect the collective mood or style.

Output:

- The four images are composed into a visual moodboard.
- Users can view, download, regenerate, or replace specific images.
- Moodboards can be saved and reused within the user's profile.



The user starts by filling the service details, here they specify how they want the mini app to function in detail, since they will be using the service regulary and for a very specific purpose, they are expecting the service the work perfectly for their device. They can specify what the service does, how the image is generated and for what screen size it is generated.



The second step is Workflow Builder, since the user wants to create a moodboard, they first select text processor to process the data collected from the user, and next is the image Generator which uses the output of text processor to generate the specific images.

5. Multidisciplinary Integration

This project illustrates a seamless collaboration between technical and artistic disciplines:

Field	Contribution	Value
Industrial Design	Visual aesthetics, emotional storytelling, and mood mapping	Ensures moodboards are visually coherent and emotionally resonant
Our Project (Software Engineering)	Technical infrastructure, data processing, AI integration	Enables dynamic content generation and user interaction

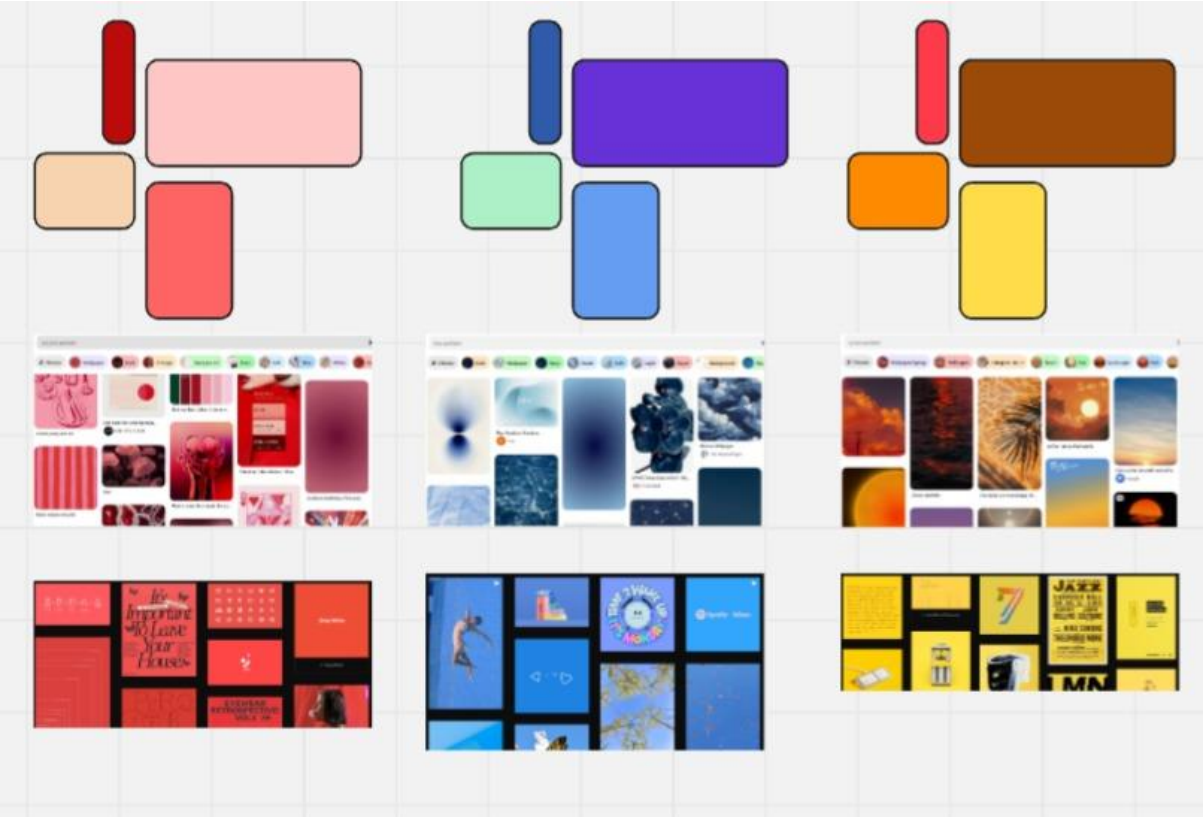
This integration provides a holistic experience where the emotional and visual goals of design are supported and enhanced by our robust, intelligent software infrastructure.

6. Future Work

- Add an AI-driven feedback system where users rate moodboards and the platform adapts to preferences.
- Integrate facial emotion recognition to auto-suggest moods or themes.
- Offer new layouts and visual compositions beyond the 2x2 image grid.
- Support social media sharing and professional export formats.
- Enable collaborative moodboards for design teams or friend groups.

7. Conclusion

This project demonstrates a successful multidisciplinary collaboration where the expressiveness of industrial design meets the adaptability and power of artificial intelligence. The result is an AI mini app, developed as part of our project, that creates a deeply personalized user experience. By integrating real-world data, artistic vision, and generative models, our platform offers a powerful tool for inspiration, reflection, and creative expression. The moodboard generator sets a foundation for future collaborations that blend aesthetic design with computational creativity, paving the way for more emotionally intelligent and user-centric AI applications.

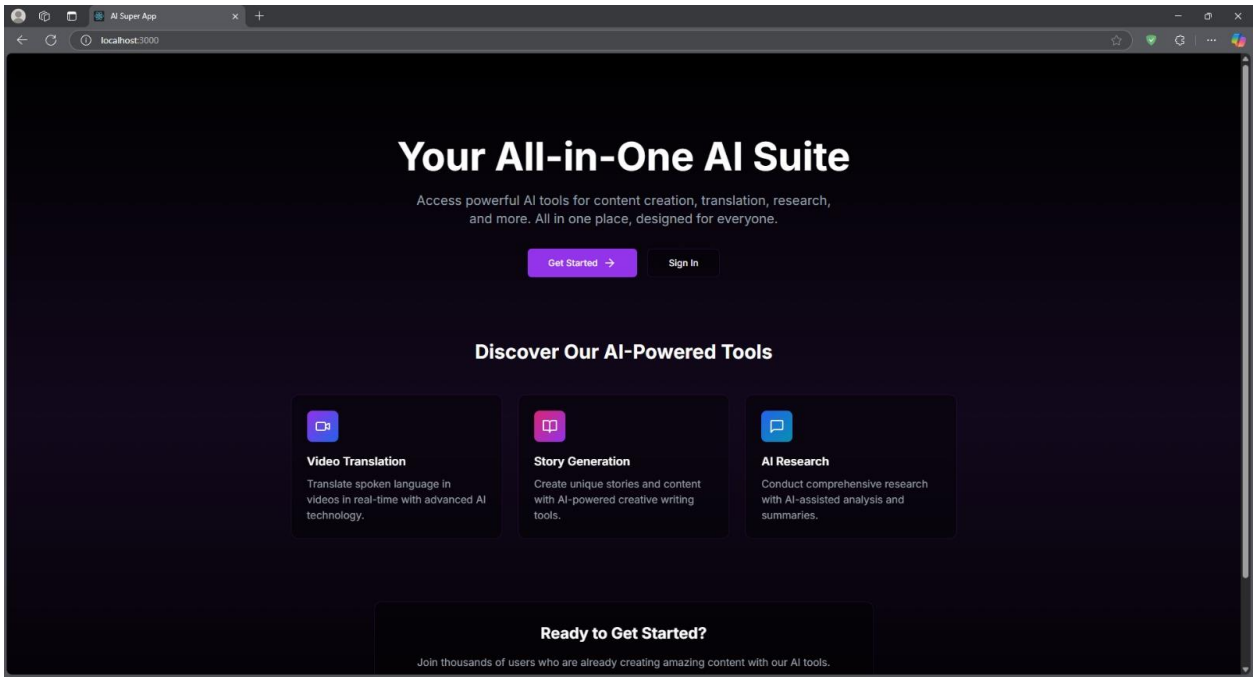


Müge Özyürek

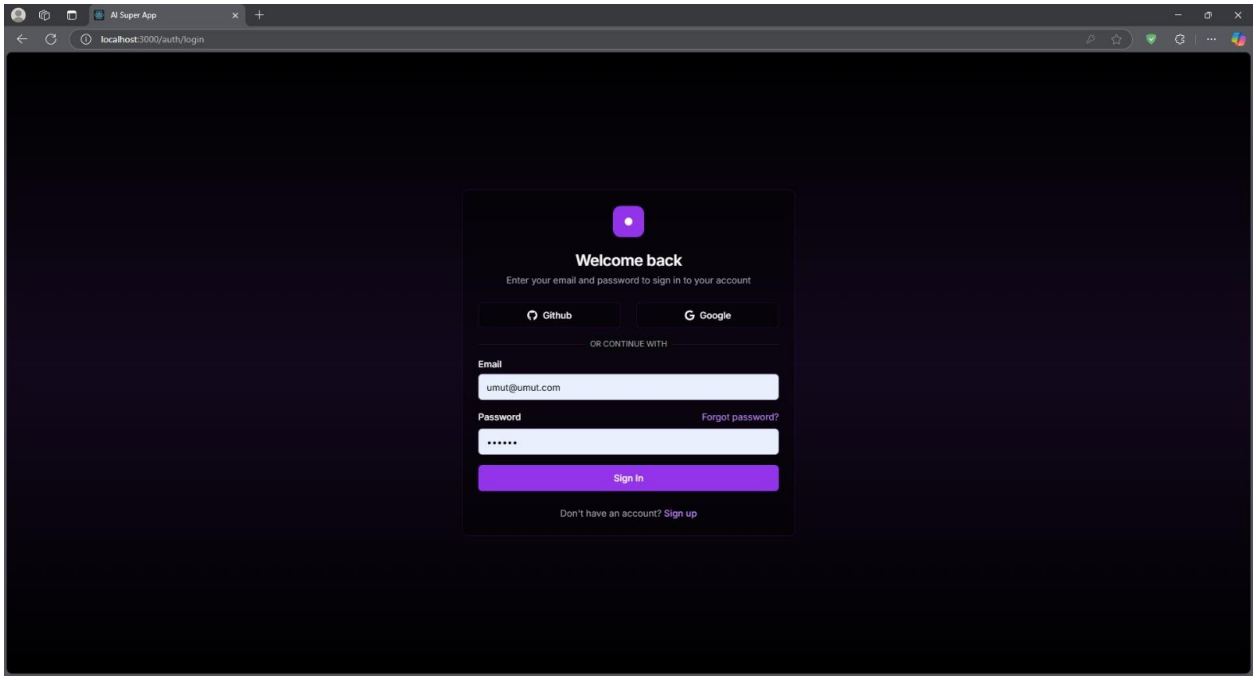
Industrial Design Department, TEDU

UX/UI Design Feedback Report

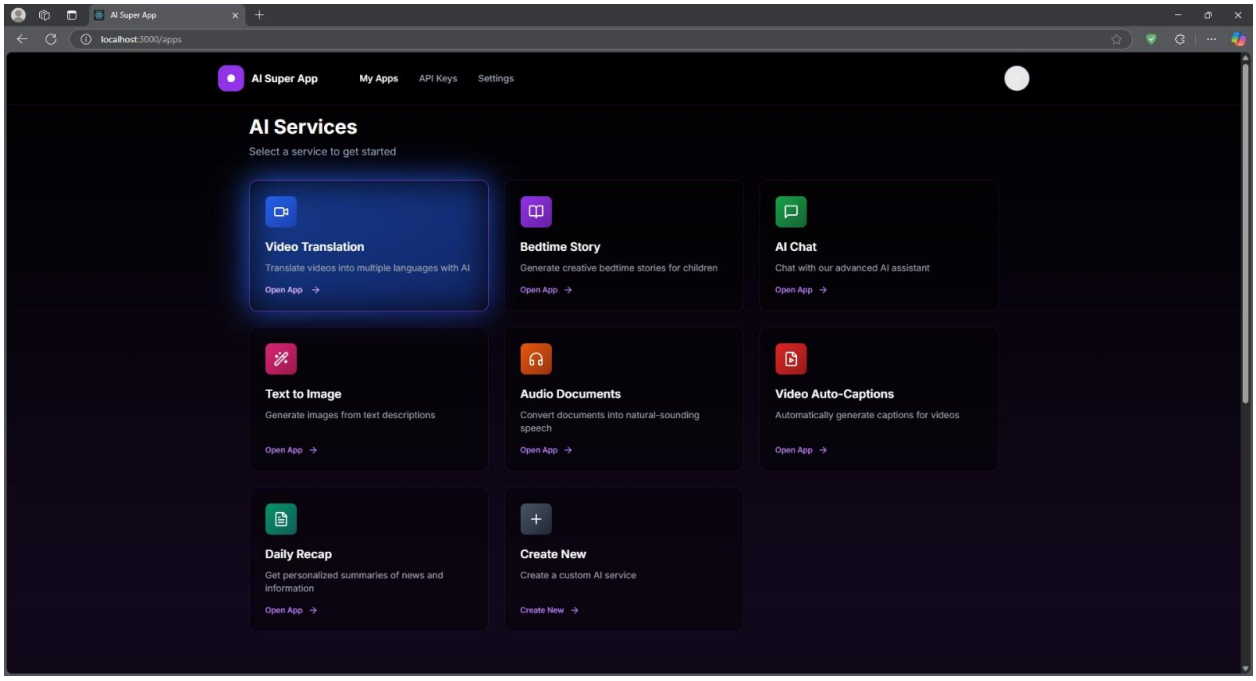
This report includes my UX/UI feedback on a website developed by a software engineering student. As a design student, I reviewed the interface with a focus on usability, visual hierarchy, layout, and overall user experience. The goal is to give constructive feedback that highlights both the strengths of the design and areas that could be improved, to help the developer enhance the project further.



This is the landing page of the website, and it gives a clear first impression of what the platform offers. The headline “Your All-in-One AI Suite” is large and bold, creating a strong visual hierarchy that immediately draws the user’s attention. The short description underneath supports it well by summarizing the website’s purpose in a few simple lines. The two call-to-action buttons work well for different users: new users would likely click “Get Started,” while returning users can go straight to “Sign In.” The layout feels simple and easy to follow, and the spacing gives everything enough room to breathe.

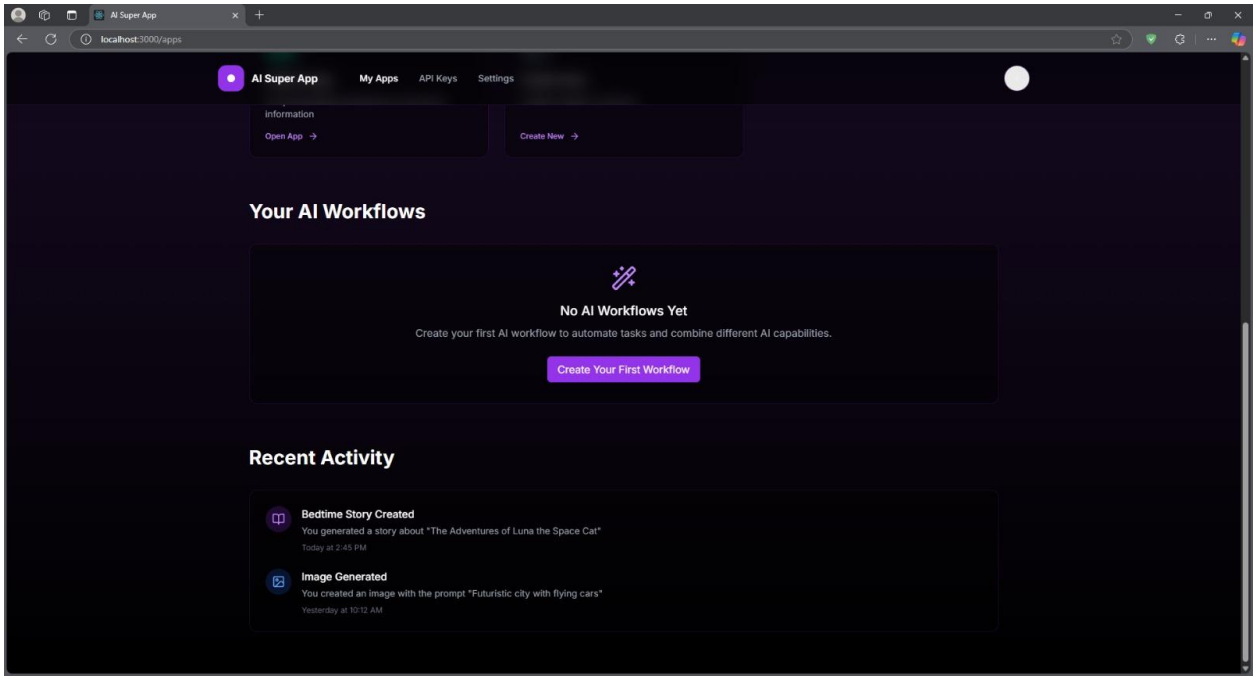


This is the login page where users enter their email and password to access their account. The design is simple and works well overall. It's a good idea to offer sign-in options like Google and GitHub, since that makes the process faster for many users. The layout is mostly clear, but the “Forgot password?” text might work better if it were placed directly below the password input field. That would make it easier to notice without disrupting the flow. The hierarchy is clear, with the purple “Sign In” button standing out as the main action.

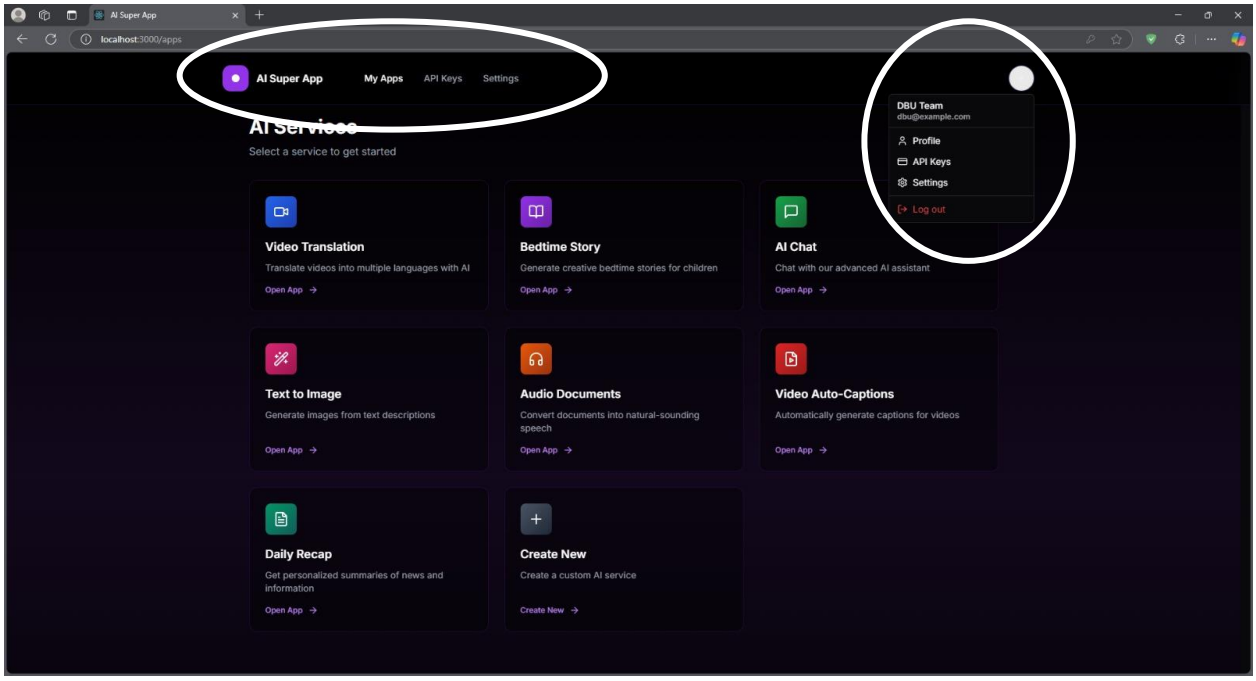


The main dashboard page displays a collection of AI services, each within its own colored rectangular card. The layout is visually appealing and structured. Every card includes an icon, service name, and a distinct background color, making each service easily identifiable. This is a great example of visual hierarchy and recognition over recall, as users can quickly scan and pick the tool they want. The glow effect on each card adds an interactive and polished feel to the interface, enhancing the user's engagement.

The layout is clean and follows a grid structure. At the end of the grid, there’s a "Create New AI" card, prompting users to design their own AI service. It’s a nice touch that encourages exploration and creativity.



As the user scrolls down, the interface reveals two main sections: “Your AI Workflows” and “Recent Activity”. However, it might be worth rethinking the presence of the "Your AI Workflow" section on the first view. For a new user, it may appear unnecessary since the "Create New AI" already invites them to start building. A smoother flow could involve hiding the "Your AI Workflows" section in the beginning, and only displaying it once the user has actually created a workflow. This will reduce visual clutter and make the page more relevant depending on the user's progress. When the user has started creating their own service, “Your AI Workflows” can be placed on top and their work can appear there. The existing services can come after the “Your AI Workflows” section.

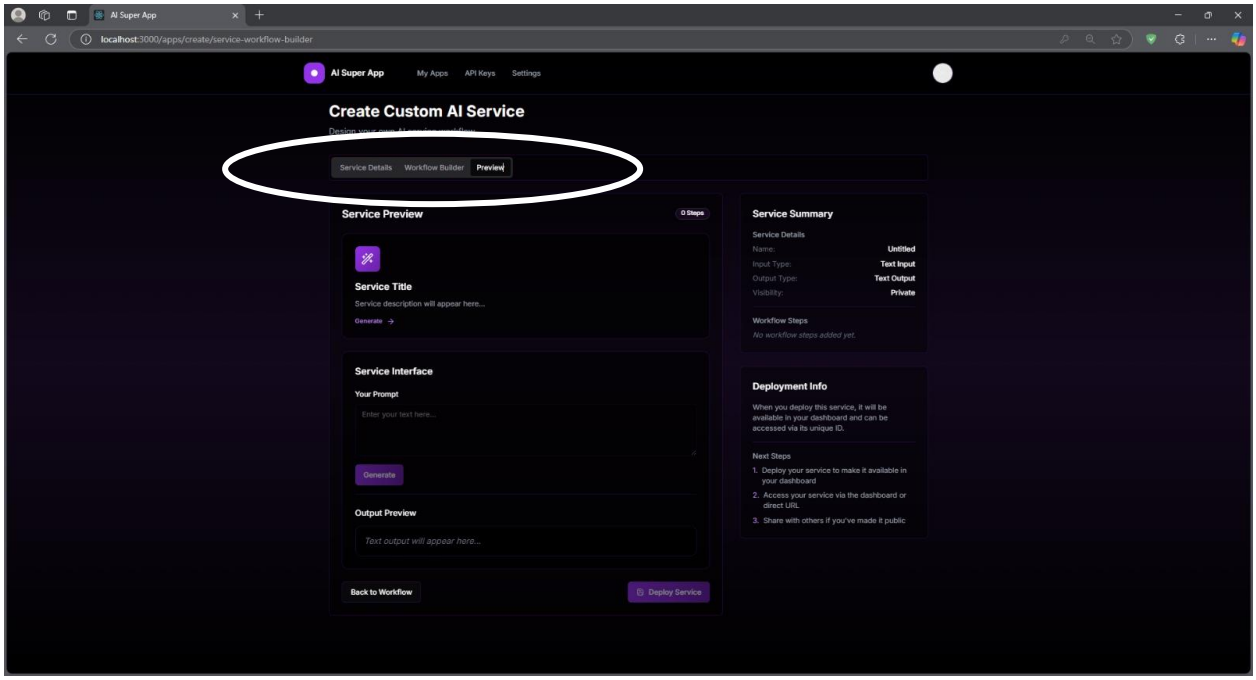


The top navigation bar includes the website logo and name on the left, which brings the user back to the main dashboard when clicked, and three navigation items: “My Apps,” “API Keys,” and “Settings.” On the top right, there's a profile avatar that expands to show “Profile,” “API Keys,” “Settings,” and a red “Log Out” button when clicked.

From a UX perspective, there’s some redundancy here. Both “API Keys” and “Settings” are accessible in the avatar dropdown, making their presence in the top navigation bar somewhat unnecessary. Similarly, “My Apps” leads to the same main dashboard as clicking the logo, which may confuse users.

The red coloring of the “Log Out” button is a nice touch in terms of visual hierarchy. It clearly signals a potentially impactful action.

One could consider simplifying the top navigation by removing duplicate entries and relying more on the profile dropdown to house secondary actions.



The interface for creating a custom AI service is clear and follows a logical three-step flow: Service Details, Workflow Builder, and Preview. The structure makes the process easy to follow, and the use of labels and placeholders effectively guides the user.

A helpful improvement could be the addition of a visual progress indicator, such as a stepper or horizontal progress bar, to give users a clearer sense of their position in the process and how much is left to complete. Adding small interactions or visual feedback when steps are completed would also improve user engagement.

Overall, the design is well-organized and user-friendly. The color usage, iconography, and interactive touches like hover effects make the app feel modern and responsive. With just a few small changes the UI/UX can feel even more seamless and thoughtful.