Daniel Vazquez  
Ronghao Ye

Yixing Yao

**Architectural Co-Pilot**

**Mission Statement:**

"Empowering everyone to design beautiful, functional spaces effortlessly with the help of AI”

**Project Description:**  
  
This tool is an AI-based architectural and room decoration assistant that integrates third-party tools to assist users in creating architectural layouts, room designs, and generating images or edits of room decorations. It is designed for both professionals and inexperienced users, aiming to simplify the design process by providing efficient solutions for complex tasks, while also being accessible to those with little or no design experience.

**Minimum Viable Product (MVP)**

1. **File Handling:**
   * Support STL, DXF, JPG, and PNG file types
   * Basic conversion between file types
   * Compatibility with most cad programs and image editors
2. **Basic Room Layout:**
   * A feature that allows users to select a room type (living room, bedroom, kitchen, etc) and generates a basic room layout (walls, doors, windows).
   * Allows the creation of blueprints for single story buildings.
   * Allows editing of blueprints with prompting
3. **Basic Room Decoration:**
   * Users can choose a prompt for any room style (modern, minimalist, traditional, etc.).
   * The tool can provide basic furniture and decor arrangements, as well as suggest cases for matching or color theory.
4. **Image Generation:**
   * Users can generate a “fantasy” room based on their particular layout and the AI’s suggestions.
   * Users can upload images of their own rooms to decorate.
   * Users can prompt for image generation of any room features/furniture
   * Integration with third-party tools to efficiently use and place these room features

**Example user stories:**  
  
**As an interior designer:**I want to quickly create floor plans and room layouts for my clients so that I can present professional, visually appealing designs without trial and error and or time consuming software tools.

**As a homeowner with no design experience:**I want to easily visualize how different furniture and color schemes would look in my living room so that I can confidently choose a design that fits my style and preferences without hiring a professional designer.

**As an architect:**I want to use AI-powered tools to generate multiple layout options based on given dimensions and client requirements so that I can explore different design concepts efficiently before selecting the best fit for the project.

**As a student studying interior architecture:**I want to be able to experiment with room layouts, furniture placements, and decor ideas with an AI that offers suggestions and corrections so that I can improve my design skills and gain hands-on experience without requiring expensive software or a professional mentor.

**As a real estate agent:**I want to create visualizations and virtual staging for properties I’m selling so that potential buyers can see how a home could look with different styles of furniture and decor.