1. **Project Requirements**

What to do: To optimize the placement of furniture by analyzing the movement paths of adults and children.

Target Users: Families with children, people with disability, etc.

1. **Data Collection and Processing (working on)**

Obtain active path data. (sensors, real-time data or synthetic data)

Data Preprocessing. (Put data from all sources together and let them have the same format)

1. **Select and apply algorithms**

Machine Learning methods applied: clustering algorithms (Kmeans)

Model training and optimization: train to predict the optimal furniture placement based on activity path. supervised learning model with historical data

1. **Design the user interface**

Users can adjust the size of the room, the type and number of furniture, and provide specific needs

AI analyze the path, then generate multiple furniture placement plans for users to select and adjust.

2D models showing the layout of the room