

Roomify

Team Lead: Ethan Honis

Team Members: Meir Manevich | Ali Donald Curtis | Eva Ternovska

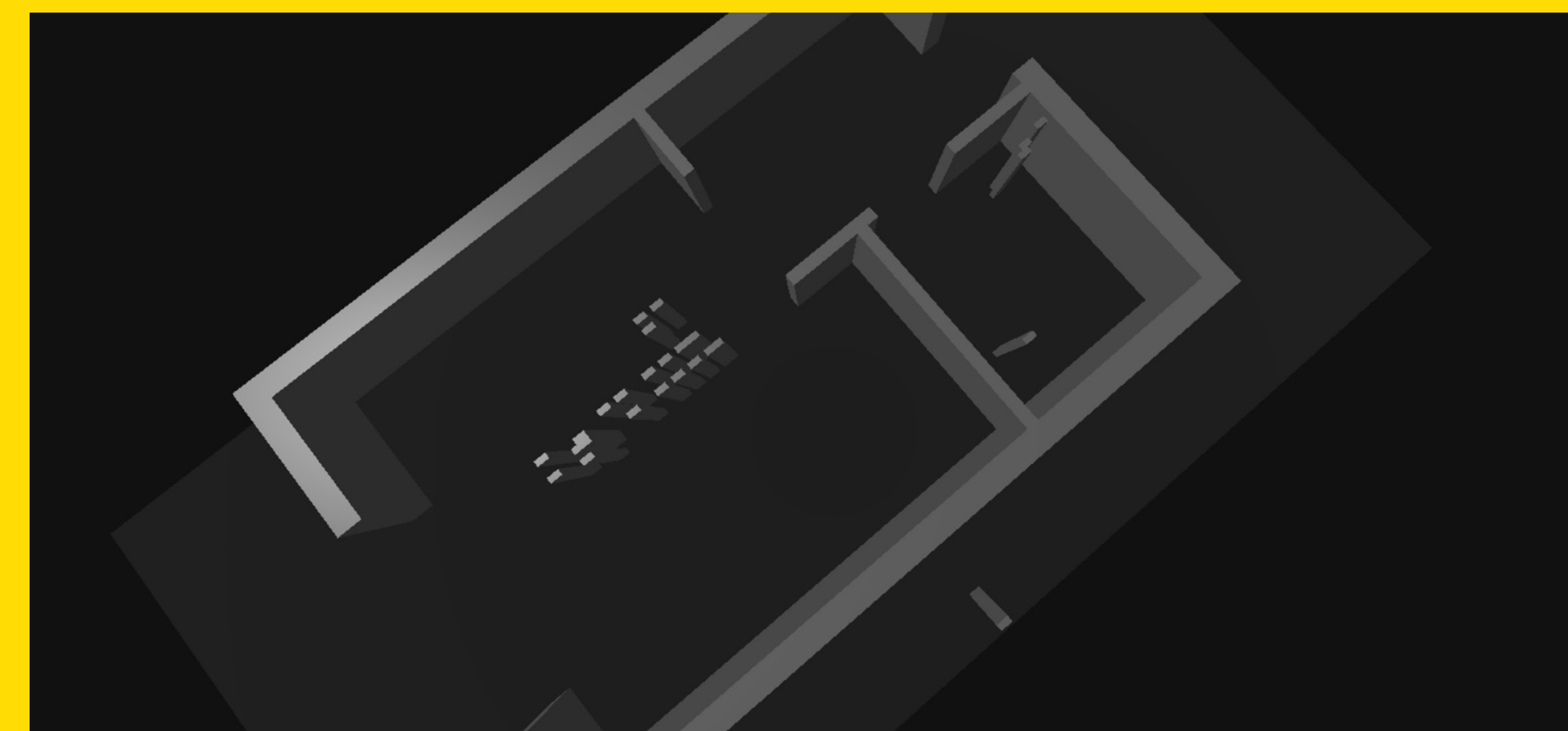
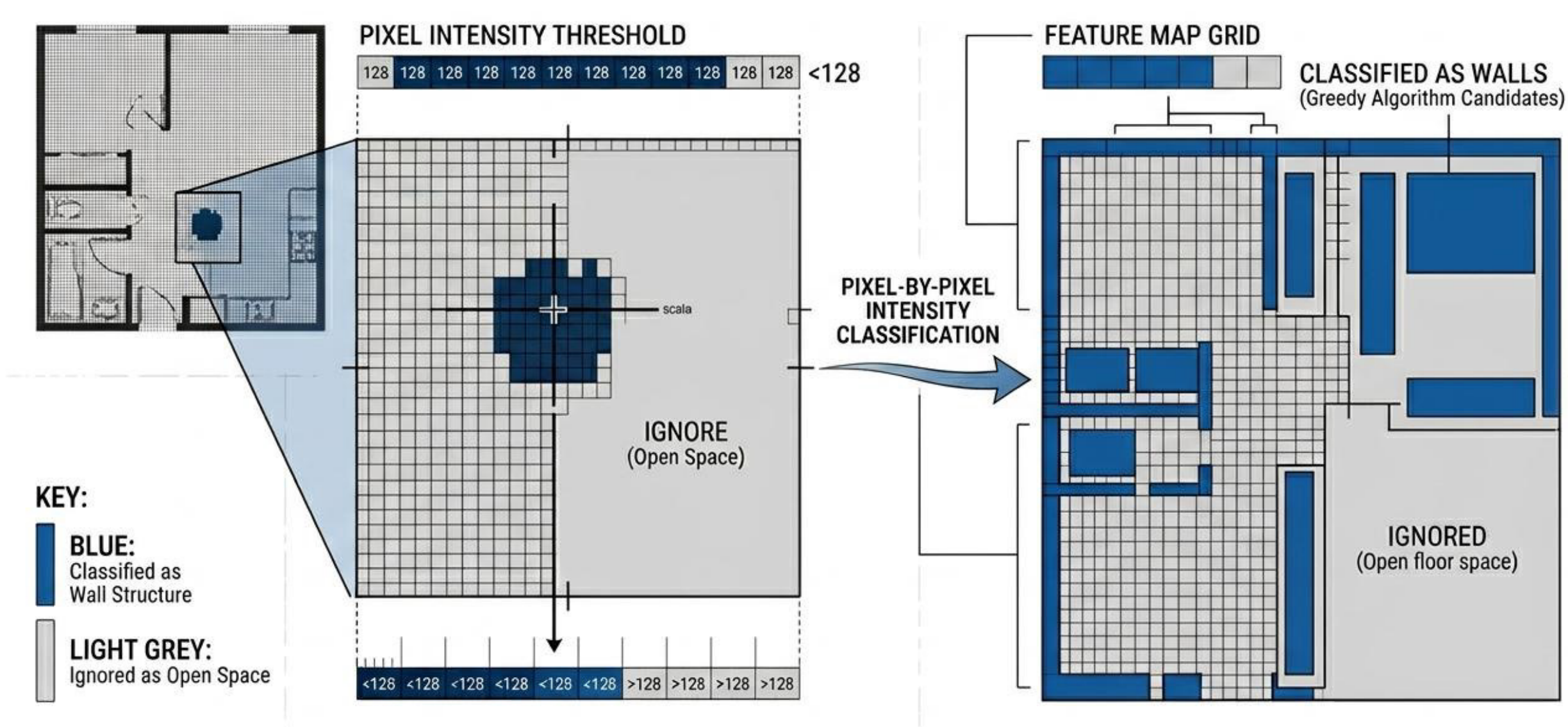
THE CHALLENGE:

- Spatial Disconnect: Average individuals struggle to translate 2D floor plans into 3D understanding without specialized training.
- Key Questions: Users often struggle to know how much space they have, how to move items in, and what the final result will actually look like.
- The Experience: Allow anyone to explore their creativity and have the pleasure of making a home.

KEY DESIGN GOALS:

- Convert 2-Dimensional Floor plans to 3D spaces with a library of common furniture assets.
- Maintain a project management system for individuals to maintain their organization.
- Ensure that the experience is intuitive and encourages expression.

PROCEDURAL 3D RECONSTRUCTION: FROM 2D PIXELS TO 3D WALLS



MODELING THE ROOM:

- Image Analysis: Scans pixels for intensity; dark areas are walls; light areas are ignored as empty floor space.
- Greedy Optimization: Merges adjacent pixels into large boxes, drastically reducing geometry for faster performance.
- Mesh Rendering: Welds all optimized boxes into a single, unified mesh for memory-efficient 3D viewing.

MANAGING A DIGITAL PLATFORM AND SERVICE

- Vercel serverless APIs + Prisma DB manage persistent file/project structure
- Folder-based system organizes project state, metadata, and user content flowStructuring ideas enables iterative development, clarity, and scalable thinking
- Allows users to organize their ideas facilitates their evolution and flourishing

MISSION: Develop a web application that will rebuild the process of interior space visualization and design.