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Duplicate Project   ✏ Edit Project

Automated floorplan generation using RGB-D data   Closed   ⋮

General Information

Programmes

Master Artificial Intelligence

Project Details

Description

Imagine transforming raw RGB and Depth images into detailed, accurate floor plans with just a click. This master thesis project offers you the opportunity to work on a groundbreaking pipeline that automates the creation of architectural floor plans—an essential tool in designing, understanding, and remodeling indoor spaces.

As part of this project, you will dive into the fascinating world of computer vision and spatial analysis. Your mission is to develop and optimize a system capable of automatically generating floor plans by analyzing room layouts, identifying corners, doors, and windows, and integrating various multi-modal information. The challenge lies in how different data types—such as room layouts, semantic information, and point clouds—can communicate and complement each other to produce highly accurate and reliable floor plans.

You will also explore the exciting domain of transfer learning, aiming to generalize your model to handle unseen data with ease. Your contributions will directly impact the development of WeScan.io, a world-leading mobile scanning application used by professionals across the globe.

Why Join This Project?

Innovation: Be at the forefront of automation in architectural design, reducing the time it takes to generate floor plans from days to mere moments.

Global Impact: Your work will contribute to a widely used application that supports real estate professionals, architects, and designers worldwide, streamlining their workflows and improving accuracy.

Advanced Learning: Gain hands-on experience with state-of-the-art techniques in computer vision, deep learning, and transfer learning.

Real-World Application: Your work will directly influence WeScan's cutting-edge mobile technology, used globally by professionals to produce accurate floor plans, measurement reports, and energy labels.

Collaboration: Work alongside industry experts and contribute to a project with real-world applications, enhancing your research and practical skills.

Reference
1. PolyDiffuse: Polygonal Shape Reconstruction via Guided Set Diffusion Models. Neurips'23
2. SLIBO-Net: Floorplan Reconstruction via Slicing Box Representation with Local Geometry Regularization
3. PolyRoom: Room-aware Transformer for Floorplan Reconstruction. ECCV'24