Docket #: S16-237

3D Semantic Parsing of Indoor Space Point Clouds

Stanford researchers have developed a method that allows for 3D semantic parsing of indoor spaces. It receives a 3D point cloud input which is parsed into individual spaces and specific components, such as structural and furniture. This semantic output is provided in three differing granularities of resolution, formatted as points and 3D geometry.

Applications

- **Architecture Engineering Construction and Facility Management** - Automate processes in as-built Documentation and Building Information Modeling, providing insightful statistics.
- **Virtual reality, Augmented reality, indoor navigation and robotic systems and computer vision** - Can be used in any application that requires an understanding of the space of operation/interaction.
- **Interior Design and Architecture** - Provides an as-is model base for renovation projects and allows for effortless modifications to layout.

Advantages

- Able to handle large-scale spaces
- Hierarchical approach that can take advantage of recurrent layout configurations and patterns in man-made structures.
- Room parsing is parameter-free and doesn't focus on separating rooms by identifying wall surfaces
- Can process large point clouds with millions of points in linear time
- End-to-end automatic method without need for user input

Patents

- Published Application: 20170358087
- Issued: 10,424,065 (USA)

Innovators

- Iro Armeni
- Silvio Savarese
- Martin Fischer
- Ozan Sener
- Amir Roshan Zamir

Licensing Contact

Imelda Oropeza

Senior Licensing Manager, Physical Sciences

Email