Dynamic 3D Modeling

Goal: 3D modeling of dynamic scenes from multiple depth cameras.

Description:
KinectFusion [1] and similar approaches allow to fuse depth maps over time in order to obtain a consistent 3D model of the rigid scene. However, dynamic changes in a scene can not be modeled, but are overwritten by the latest measurements.

In this work the goal is to model dynamic scenes in a 4D space-time representation from multiple (static and registered) depth cameras. Similar to [2] the approach should leverage an octree representation for efficient data storage and only extend the model in time for those parts which are actually changing.

Optional: Detect differences (e.g. in human movements) between a reconstructed and a template 4D model.


Requirements / Tools:
C++
Libraries: openCV, octomap

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