Project Annual Report

SamHu
phone: +8615656928957 email: sy891228@mail.ustc.edu.cn

Award Number: N00014-000-0000
https://github.com/samhu1989/DevBundle/

LONG-TERM GOALS

Publish a Class-A Paper.

OBJECTIVES

Our intension is to develop a fully automatic and unsupervised method to recover the object information (object shape and object-level segmentation) from a set of point clouds. We further assume that this set of point clouds contain the same set of objects but differ in the object motion.

APPROACH

This year we change the approach from an interleaving of region-grow and graph-cut to a EM based iteration framework. The advantage of this framework is that it comes with a more clear formulation (GMM based generative model) of the problem and it provide some guarantee of convergency. Under this framework we focuses on further improve our procedure to avoid local minimums.
Firstly, we try to start with a better initialization.
Secondly, we try to add the features as constraints inside the iteration(lead to a bilateral GMM model).
Now, we try to add assumptions to the shape of the objects.

WORK COMPLETED

I have done a series of experiment to exploration and verify different approahes. Along with it I have implemented a series of algorithms for feature extraction, segmentation, optimization, registration.I have also implemented a series of tools for visualization, data generation, annotation and debugging.

RESULTS

IMPACT/APPLICATIONS

Potential future impact for science and/or systems applications

TRANSITIONS

RELATED PROJECTS

PUBLICATIONS