Master Thesis at Saab R3DM:
Classification of 3D maps based on satellite data

Short description

R3DM is a business unit within Saab Dynamics focusing on creating rapid 3D maps. The Vricon system is unique in its ability to rapidly and automatically produce high resolution geospatial 3D data for large areas of interest based on aerial imagery from manned aircraft, UAVs or satellites

The thesis works aims to better understand and use the data from satellites, mostly on the multi frequency bands combined with the extracted 3D structure. For example classification of vegetation, roads, water, buildings etc. Which methods in remote sensing, classification and segmentation could be used?
The work can be divided in
- Literature study
- Choice of methods/algorithms
- Implementation of chosen algorithms
- Evaluation of these on real satellite data
- Documentation

You are
E- Y- or D-student with interest in signal processing and/or statistical methods.

Point of contact at Saab
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Master Thesis at Saab R3DM:
Super resolution

Short description

R3DM is a business unit within Saab Dynamics focusing on creating rapid 3D maps. The Vricon system is unique in its ability to rapidly and automatically produce high resolution geospatial 3D data for large areas of interest based on aerial imagery from manned aircraft, UAVs or satellites

The thesis works aims to utilize several images taken of the same scene for enhancing the resolution in the result. This is based on different subpixel samplings between the images, this gives also a possibility for reducing sensor noise, e.g. non uniformity, in the camera(s). The work can be divided into:

1. Litterature study of super resolution principles.

2. Investigate the principles for system cameras, e.g. Canon Mk III, and industrial cameras, e.g. Illunis RMV 29M.

3. Implement a chosen algorithm

4. Evaluate the chosen algorithm

5. Documentation

You are
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Master Thesis at Saab R3DM:
Indoor 3D maps utilizing MicrosoftKinect

Short description

R3DM is a business unit within Saab Dynamics focusing on creating rapid 3D maps. The Vricon system is unique in its ability to rapidly and automatically produce high resolution geospatial 3D data for large areas of interest based on aerial imagery from manned aircraft, UAVs or satellites

It is of course of interest to combine outdoor 3D maps with indoor 3D maps to build the whole world in 3D.
This thesis work aims to achieve as high quality 3D maps of indoor environment as possible using the Microsoft Kinect, a low cost depth camera. Different approaches can be utilized, e.g. complementing the Kinect with a higher resolution camera and/or use KinectFusion.

The work can be divided into:

1. Literature study of previous work

2. Chose the principles for achieving high quality and accurate 3D maps of indoor scenes.

3. Implement the chosen algorithm(s)

4. Evaluate these

5. Documentation

You are
E- Y- or D-student with interest in signal processing and/or statistical methods.

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