

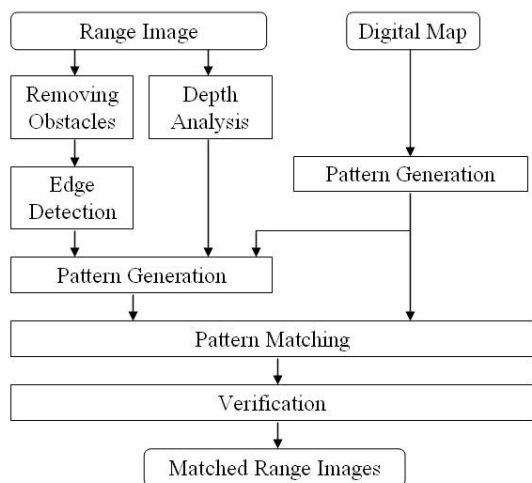
Matching Range Images of Streets with a Residential Map

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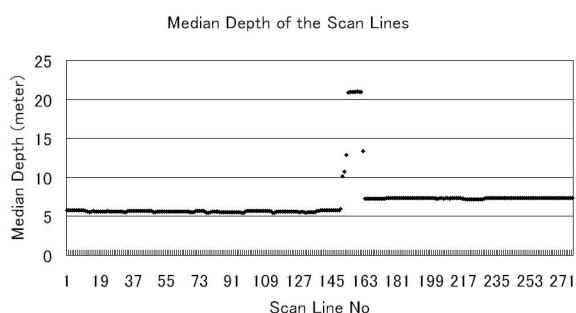
In order to realize 3D modeling and refinement of buildings in a digital 2D residential map using range images of the streets, we match range images of streets with the digital map. After pattern lines of the range images are determined using edge detection and depth analysis, they are matched with pattern lines of the digital map using a pattern matching algorithm based on dynamic programming. The range images of every building can be extracted and linked with the corresponding building data in the residential map according to the matching result. 3D modeling and refinement of the buildings in the 2D residential digital map can be realized using their range images.

Publication

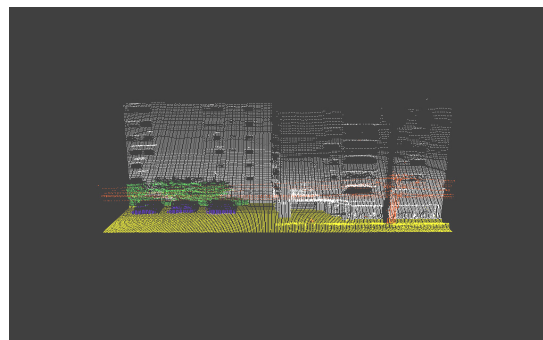
- [1] L. Tong, S. Ono, M. Kagesawa, and K. Ikeuchi, "Matching Range Images of Streets with a Residential Map", IAPR conference on machine vision applications 2007



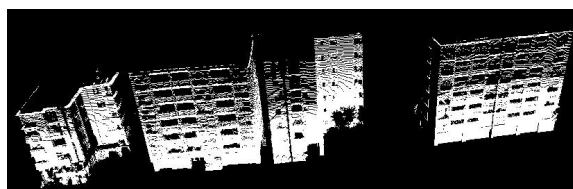
Overall analysis flow



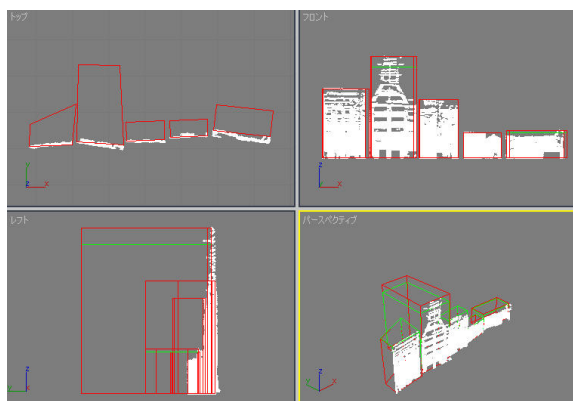
Depth analysis: change of depth along scan lines



Example of part of city range image



The range image of façade of 4 buildings



The matching result of the range image and map data