

The Second Portion of the Second Level Exam:
Linear and Non-linear Feature-Based
Range Scan Registration

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Abstract

My PhD research focuses on developing an accurate and efficient system for range image registration. Related research on range image segmentation and range image registration has been surveyed in the first portion of the second level examination. In this report we continue with discussing techniques in 3D feature analysis and pattern matching. We then introduce a preliminary registration system based on linear features, followed by experimental results on 3D feature analysis. Finally we propose a framework for our future research, a range image registration system based on linear and non-linear feature extraction and matching.