

# **Automatized Map Similarity Analysis Using Shape Invariants**

## **Abstract**

This diploma thesis is focused on using shape similarity measures for automatized map comparison. Maps can vary e.g. in the reference scale, coordinate system, rotation, degree of generalization, map content or accuracy of depiction of individual objects. The main part of the thesis deals with finding identical objects on both map layers and their matching using shape invariant turning function and other methods based on object location. These methods are tested on specific maps and compared with each other. The specific combination of methods is proposed and used for matching objects. After that the maps are compared to each other from several different perspectives. The proposed algorithm is implemented in Python programming language.

**Keywords:** map similarity, shape similarity, similarity measures, turning function