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CNN-based Semantic Segmentation for Comparisons of Old Maps: A Progress Update

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Abstract:

This abstract presents work in progress to use state-of-the-art image segmentation approaches for the comparison of old maps. We are combining Zero Shot models like Segment Anything (SAM) and supervised models to efficiently classify buildings and streets on old maps. Further, we have taken the important software package Map Analyst (public domain) and are in the process of importing its features into a modern web application to map the same regions on different maps and time frames to another. The goal is to have a web application that allows domain experts to segment and classify old maps supported by visualization and labeling.

We also are systematically describing the process of preparing digitized old maps for comparison operations. This focuses on geometrical aspects, especially establishing projection parameters and the assessment of geometrical accuracy. Working with twentieth century maps from the Warsaw area we faced some interesting challenges in the cartographic realm that are immediately relevant in Poland for historical research with old maps, yet also of relevance for other areas of the world. The presentation also considers geosemantical issues related to the work in different time periods with similar cartographical materials.

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