Abstract:Automatic building extraction from images is a particularly hard object recognition problem, because both the image data and the models to be reconstructed reveal a high complexity. Whereas models have to be generic in order to fit most of the observable different building shapes they also have to be building specific to discriminate buildings from other objects in the images. This situation describes the typical dilemma that all building recognition system have to cope with. In this article we present and discuss two approaches for automatic building reconstruction that were developed at the University of Bonn during the last eight years. It is shown how different AI methods were employed to solve the numerous problems concerning modeling, inference and uncertain reasoning, matching, and evaluation. Both approaches have been implemented and were successfully applied to real data. Due to complementary limitations, the integration of both would be desirable in order to develop a more comprehensive solution. Unfortunately, a number of open questions still have to be answered which are discussed at the end of the article.