

UNDERSTANDING THE USE OF AUTOMATED MAP GENERALIZATION TECHNIQUES

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ABSTRACT

Map generalization is a highly subjective process - perhaps the most difficult aspect of cartography to automate. Until recently, most Geographic Information Systems and Cartographic Systems lacked intelligent generalization tools. Changing map scale in a digital environment meant re-drawing and removing features, or building a database for each scale. Today, automated map generalization techniques exist to derive small scale maps from large scale master databases. A commercial software product and a variety of prototype/development systems have been developed specifically for digital generalization of cartographic features.

With new developments come the challenge of understanding the use of automated map generalization techniques. Much research has focused on formalising knowledge for digital generalization. Knowledge acquisition involves the examination/interpretation of manual processes and translating them to explicit procedures in a computer implementation. However, a limited amount of work is done to examine the problem of providing knowledge to users of automated map generalization systems.

This paper examines the aspects of data/attribution structures, workflows, batch/dynamic processing, user-interface and user-controls, that influence the use of automated operations for generalization. Their advantages and disadvantages are also reviewed. The approach of adaptive-training and machine-learning is discussed. To understand the use of automated map generalization techniques, the software product called MGE Map Generalizer is applied. Increasing the awareness of how automated generalization methods are used will further their practical applications.