

Abstract

Mathematics has been used to describe phenomena and problems in many research fields for centuries. The basic elements used in the description are formulae which express information symbolically. However, searching for mathematical knowledge in digital form using available tools is still cumbersome. We address this issue by presenting the mathematical search engine EgoMath, based on a full text searching, which can search for mathematical formulae and text. We perform an evaluation over a large collection of documents showing that our solution is usable. Our approach can be used with huge document collections by applying one specialised technique. In order to provide a valuable evaluation of the quality, we built an alternative mathematical search engine using the feature extraction technique proposed by Ma et al. We propose important improvements to this solution achieving interesting results. We perform the first ever cross-evaluation of mathematical search engines based on different algorithms. A comprehensive survey of existing techniques available, presented in this thesis, completes the picture of mathematical searching.