

## **Abstract**

The efficient storage and transmission of digital images is gaining increasing interest, for example in multimedia and WWW applications. Pictures require a huge amount of storage capacity even in compressed form (as GIF or JPEG). For this reason, many researchers study the area of digital image compression extensively.

The development of compression algorithms evolved from lossless techniques such as Lempel-Ziv and Huffman coding to lossy techniques such as vector quantization and transform coding. One of the major techniques for state of the art image compression is the fractal-based technique. One version of these are based on iterated function systems (IFS) which have drawn by far the most attention as far as one can tell from the amount of dedicated literature. Other fractal-based techniques are the codecs based on weighted finite automata (WFA) which have been neglected by most researchers. In order to slightly correct this bias, this thesis concentrates on the topic of image coding with WFAs. We have implemented a state of the art WFA coder called AutoPic to answer the question whether WFA coding is suitable in practice.