## Title of the dissertation
Improved Online Algorithms for Jumbled Matching

## Contents of the dissertation
Searching of text patterns is a widely studied problem in Computer Science. This dissertation considers a variation called jumbled matching where scrambled occurrences are accepted besides exact occurrences. For example, there is a scrambled occurrence of the pattern "prime" in the text "this is an experiment". The problem of jumbled matching has many applications in Bioinformatics.

Besides standard jumbled matching we worked on an approximate variation where each occurrence is allowed to contain at most k wrong or superfluous characters. We present online algorithms to both types of jumbled matching that utilize parallel processing features of single microprocessors (bit-parallelism and SIMD). We show by practical experiments that our algorithms are faster than previous solutions in most cases.

## Field of the dissertation
Computer Science, software technology

## Doctoral candidate
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## Time of the defence
15.1.2018 at 12.00

## Place of the defence
Aalto University School of Science, lecture hall T2, Konemiehentie 2, Espoo

## Opponent
Associate professor M. Oğuzhan Külekci, Istanbul Technical University, Turkey

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