

Dissertation press release

10.04.2020

Reliable and efficient communication over unreliable channels

Title of the dissertation	On Decoding Problems, Lattices and Generalized Concatenated Codes
Contents of the dissertation	<p>Reliable and efficient information transfer is one of the building blocks of today's interconnected society. With more devices connected every day, the importance of reliable communication is constantly growing. Wireless networks are used everywhere and they are evolving at a rapid pace. The remarkable innovation and improvement in performance we have seen during the last decades is obviously a result of technological advances in many fields. However, none of this would be possible without information theory, and more specifically, coding theory.</p> <p>One of the problems that coding theory deals with is: how can we achieve reliable and efficient communication over an unreliable channel. The answer is so-called error-correcting codes. In this thesis we study different types of error-correcting codes and so-called decoding algorithms for these codes. We improve known decoding algorithms for several classes of codes. This is important work, since there are many known good classes of error-correcting codes that cannot be used in practical applications due to impractical and/or slow decoding algorithms.</p>
Field of the dissertation	Mathematics, Coding Theory
Doctoral candidate	Ferdinand Blomqvist, M.Sc. (Technology)
Time of the defence	22.04.2020 at 16:00
Place of the defence	The public defence will be organized via remote technology. The public can join the defence remotely. Please follow the (Zoom application) link https://aalto.zoom.us/j/651995701
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