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Advances in Knowledge-Based Technologies

Proceedings of the Master and PhD Seminar Winter term 2017/2018, part 2

Johannes Kepler University Linz
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Program

Session 1. Chair: Susanne Saminger-Platz

9:00 B. Moser:
On a Heisenberg-Type inequality relating Discrepancy Norm and Total Variation
9:30 N. Shepeleva:
Removing Nuisance in Tracklet Data

Session 2. Chair: Bernhard Moser

10:15 U. Anlauf:
The Steiner Tree Problem Considering Obstacles
10:45 A-M. Meder:
Optimization of Electrical Drives Using Deep Learning Techniques

Removing Nuisance in Tracklet Data

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Abstract

One interesting problem in tracking research is to identify a subset of tracklets which is described by a human expert using natural language. Usually it is not possible to link the semantic description to the features which were extracted from the tracklets itself. In my talk I show a way how a semantic description of the camera scene itself can be used to annotate the tracklets in order to improve the identification of the described tracklet subset.

The Steiner Tree Problem Considering Obstacles

Ulrike Anlauf

Knowledge-Based Mathematical Systems (KBMS) - Johannes Kepler University Linz

Abstract – A first glance at the Euclidean Steiner Tree Problem and its obstacle-avoiding variant by means of evolutionary computation techniques.

Optimization of Electrical Drives Using Deep Learning Techniques

Adela-Maria Meder

Knowledge-Based Mathematical Systems (KBMS) - Johannes Kepler University Linz

Abstract – In order to be effective in electrical drive-design use cases, multi-objective optimization algorithms must rely heavily on model-based surrogate evaluators (i.e., regression models) that replace the finite element simulations. Surrogates based on various machine learning paradigms (like shallow multi-layer perceptrons, support vector machines, radial basis functions) have been previously tested with mixed success. As recent types of deep structured neural networks have shown very promising results in several application fields, the goal is to test the potential of these advanced machine learning techniques in the context of existing electrical drive design frameworks.