

KATHOLISCHE UNIVERSITÄT
EICHSTÄTT-INGOLSTADT

Mathematisches Kolloquium

QLDT: A Decision Tree based on Quantum Logic

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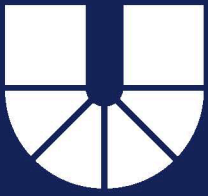
BTU Cottbus-Senftenberg, Informatik

Mittwoch, 25. Januar 2023, 17.00 Uhr, KGA-103

Eine digitale Teilnahme am Kolloquium ist über diese Zugangsdaten möglich:

<https://kuei.zoom.us/j/69377239543?pwd=TFdSSDV2bG9YRGdRTStLTFg5U3QzUT09>

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Abstract.

Besides a good prediction a classifier is to give an explanation how input data is related to the classification result. Decision trees are very popular classifiers and provide a good trade-off between accuracy and explainability for many scenarios. Its split decisions correspond to Boolean conditions on single attributes. In cases when for a class decision several attribute values interact gradually with each other, Boolean-logic-based decision trees are not appropriate. For such cases we propose a quantum-logic inspired decision tree (QLDT) which is based on sums and products on normalized attribute values. In contrast to decision trees based on fuzzy logic a QLDT obeys the rules of the Boolean algebra.

Keywords: Quantum logic · Decision tree · Interpretable AI

