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UNIVERSITÄT LINZ

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## Diploma Thesis 'Cluster Validation Techniques'

The 'Department of Knowledge-based Mathematical Systems' at the Johannes Kepler University Linz is offering a **diploma thesis in the field of machine learning, especially cluster validation techniques.**

Clustering techniques are important in order to group any kind of data into separate local regions, also called clusters. The problem in higher dimensional spaces (i.e. dimension  $> 3$ ) is that the obtained cluster partitions from the grouping process cannot be easily validated as no supervised information is available and a plausible visualization is hardly possible. Hence, it is necessary to apply cluster validation techniques, which measure the quality of a cluster partition appropriately and are able to find the optimal number of clusters.

**In this thesis, such techniques should be investigated, described and compared to each other based on some real-world data sets.**

### Profile/Personal Qualification of the candidate:

Ideally, the candidate should have a completed bachelor in Mathematics/Informatics/Mechatronics or any other technical study and be interested in machine learning techniques. Some prior knowledge in machine learning is welcome but not a strict necessity.

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