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Program

Chair: Susanne Saminger-Platz

12:30 J. Martinez-Gil:
Talk on "Accurate Semantic Similarity Measurement of Biomedical Nomenclature by means of Fuzzy Logic"

13:00 G. Badia:
An Algebraic Characterization of the Variable Sharing Property

Talk on "Accurate semantic similarity measurement of biomedical nomenclature by means of fuzzy logic"

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Abstract. Semantic similarity measurement of biomedical nomenclature aims to determine the likeness between two biomedical expressions that use different lexicographies for representing the same real biomedical concept. There are many semantic similarity measures for trying to address this issue, many of them have represented an incremental improvement over the previous ones. In this work, we present yet another incremental solution that is able to outperform existing approaches by using a novel aggregation method based on fuzzy logic. Results show us that our strategy is able to consistently beat existing approaches when solving well-known biomedical benchmark data sets.

Synopsis

In this talk, we will explain that being able to accurately measure semantic similarity is considered of great relevance in the biomedical field since this notion fits well enough in a number of particular cases where different nomenclatures have been used for describing the same biomedical concepts. This means that semantic similarity measures can be used for understanding beyond the lexical representation of biomedical terminology. For example, it could be possible for a computer to identify that specific terms (*e.g.*, headache) yields matches on similar terms (*e.g.*, cephalalgia) or an expert on the treatment of cancer could also be considered (to some extent) as an expert on oncology, tumor treatment, and so on. The talk will be intended for a broad audience including PhD students and Postdocs, and it will show a number of examples and uses cases from the biomedical field. For further information, it is strongly encouraged to refer to [1].

References

1. Martinez-Gil, J.: Accurate Semantic Similarity Measurement of Biomedical Nomenclature by Means of Fuzzy Logic. International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems 24(2): 291-306 (2016).

An Algebraic Characterization of the Variable Sharing Property

Guillermo Badia

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

Abstract - A sub-structural logic is said to have the variable sharing property (VSP) if whenever A\B is a theorem, then the formulas A and B have some propositional variable in common. In this talk, I'll provide an algebraic counterpart for this logical property, that is, a property of varieties of algebras corresponding to the fact that the logic of such variety satisfies VSP.