

# Ústav informatiky

## Akademie věd České republiky

*Pod Vodárenskou věží 2, 182 07 Praha 8*

ÚI AV ČR ve spolupráci s Odbornou skupinou aplikované matematické logiky České společnosti pro kybernetiku a informatiku

pořádá

v seminární místnosti ÚI AV ČR - místnost č. 318  
(stanice metra C Ládví)

### **Seminář aplikované matematické logiky**

který se schází **ve středu v 10.00 hod.**

*Program na duben 2016:*

6. 4. 2016 - *Krzystian Jobczyk*

#### **Towards a project of fuzzy logic of real analysis**

The mutual relationships between fuzzy logic and functional analysis was observed and described in 1993 by D. Mundici in terms of mutual relationships between ukasiewicz logic and  $C^*$ -algebras. Some new connections between fuzzy logic and analysis was described in the Hajek's seminal monograph "Mathematics of Fuzzy Logic" by proposing a new integral extension of the Rational Pavelka-Hajek Logic. The proposed talk will be aimed at proposing some new (possible) extensions of this research path towards a fuzzy logic systems – capable of expressing convolutions and the Allen's relations between intervals – expressed by integrals and convolutions. It seems that the proposed extensions could be applicable to a specification of solutions of such problems of temporal planning as: Simple Temporal Problem under Uncertainty and Preferences – initially introduced by R. Dechter.

20. 4. 2016 - *Peter Vojtá*

#### **Driven by concrete applications – helps to investigate right notions – preferential fuzzy sets and some more**

Motivated by recent talk of Rostislav Horcík "Why is Fuzzy Logic not Applied in Computer Science, yet?" in this seminar, we give a report on our experiences with fuzziness in computer science.

We consider recommender systems where fuzzy degree is interpreted as a degree of preference of a user. Main task is to make a hit in top-10 and to be able to explain intuitively the decision. We report on preference learning experiments. We sketch the proof of completeness of our fuzzy logic programming system. We mention the threshold algorithm of R. Fagin.

27. 4. 2016 - *Zach Weber*

#### **Contradictions! An invitation to inconsistent mathematics**

This talk is an introduction to paraconsistent logic and inconsistent mathematics. After presenting motivations and background, I will survey some of the main results in the area to date – from foundations of mathematics to formal semantics – and indicate some of the main open problems and challenges going forward.