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Proposal MathMod Minisymposium 2015

The minisymposium will be organized as part of MathMod 2015 www.mathmod.at, the deadlines are identical.

Title: Classification and evaluation of the cognitive-based interacting human and/or technical system

2-3 intended sessions about:

Classification

of knowledge-based human interaction behavior, related reasoning, learning, and planning tasks;
of knowledge-based cognitive system behavior, related reasoning, learning, and planning tasks;
of the dynamics of (knowledge-related) Human-Machine-Systems including the interaction of
humans with cognitive-technical / intelligent systems;
of the dynamics of interactive group behavior;
of the actual status of self-organization processes within intelligent systems, ...

Evaluation

of planning and interaction sequences;
of decision processes and results;
of goal- and utility-oriented behaviors;
of human cognitive work based on shown behavior etc.;
with respect to the dependability of Human-Machine-Systems ...

Intended application fields:

- Assistance systems, Multi-mode interaction between autonomous and guided systems
- Intelligent systems
- Intelligent, soft-computed knowledge-based supervision of human interaction
- Cognitive interfaces
- Human-guided robotic systems
- ...

Short description:

Since a few years a formal understanding of cognition is used and applied in several disciplines realizing situational, flexible behaviors for interactions and model-based supervision. Based on cognitive functions (perception, interpretation, planning, execution) or procedures (learning, reasoning, memorizing, ...) with the use of representations and soft-/intelligent computing techniques, tasks of control and supervision of technical systems are discussed in a new sense. Applications fields like Human-Machine-Systems or Cognitive Interfaces are discussed in a method-oriented formal manner. Technical situation cognition is becoming a known term also in engineering, as well as a popular term in information science. Based on this formal understanding detailed aspects of the cognitive interaction behavior (including human knowledge-

guided behavior) can be classified and/or evaluated, the results can be used within automation/supervision tasks or for guidance purposes.

This minisymposium organizes contributions and discussions of scientists working in related fields.

What is not intended to be included:

- Approaches not based on mathematical, algorithmic, or formal approaches
- Work related to ergonomic analysis (excluding cognitive work/task analysis)
- Pure experimental results

Important dates (acc. to MathMod conference organization):

<http://www.mathmod.at/index.php?id=266>

Next deadline: Sep. 30, 2014: Submission of final paper

Organizers contact data

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