

KI 2008 – Workshops

Thomas Roth-Berghofer

Workshops at a Glance

- WS 1: Agent-based Simulation – From Cognitive Modelling to Engineering Practice
- WS 2: 2nd Workshop on Behaviour Monitoring and Interpretation (BMI'08)
- WS 3: 3rd Workshop on Emotion and Computing – Current Research and Future Impact
- WS 4: 4th Workshop on Knowledge Engineering and Software Engineering (KESE 2008)
- WS 5: Ontology-based Information extraction (OBIES 2008)
- WS 6: 22. Workshop Planen, Scheduling und Konfigurieren, Entwerfen (PuK 2008)
- WS 7: Ambient Intelligence

Im Rahmen der 31. Jahrestagung Künstliche Intelligenz (KI 2008) in Kaiserslautern vom 23. bis 26. September 2008 werden am 23. September die Workshops durchgeführt.

Mehr Informationen zu den Workshops finden Sie auf den angegebenen Web-Seiten, insbesondere die individuellen Termine zum Einreichen von Beiträgen. Informationen zur KI-Tagung finden Sie unter <http://ki2008.dfki.uni-kl.de/>

WS 1: Agent-based Simulation – From Cognitive Modelling to Engineering Practice

- **Organisers:** Franziska Klügl, Sabine Timpf, Ute Schmid
- **Website:** <http://ki.informatik.uni-wuerzburg.de/events/cog.abs/>
- **Submission deadline:** 1 June 2008

Constructing and executing an agent-based model provides many advantages in comparison to traditional simulation approaches. Increased degrees of freedom in model design, possibilities of modelling behaviour in restricted, heterogeneous geographical and temporal context, etc. are only partial aspects of its great potential. Thus with agent-based simulation, means are available to actually test cognitive models of human decision making in an adequately rich, simulated environment. These efforts may finally result in detailed cognitive models that are grounded in reproducible, practical experience, in addition to abstract hypotheses and theories of cognition.

On the other side, in the agent-based simulation community the need for well-defined and reliable cognitive models is growing as complex human behaviour has to be reproduced in real-world applications. Abstract models based on rational optimisation, and/or

game-theoretic models are not sufficient any more, if complex decision making in urban space has to be modelled for enhanced pedestrian simulations, or if complex dynamics of team work are to be reproduced.

This workshop aims at bringing these two communities together, demonstrating the current state of art in both research directions. We intend to discuss questions such as

- Why does cognitive science need good engineering practice in agent-based simulation?
- Why do real-world applications of agent-based models really need complex agent models?
- How to solve the problem of missing adequate data for empirical validation of such complex agent models?
- How to determine whether a model is cognitively adequate or even „valid“?
- Can agent-based simulations offer a viable path from single-agent cognitive models to multi-agent cognitive models?

We therefore especially invite position papers on the above mentioned questions for discussion at the workshop. We plan to allow for time slots of at least 30 min per presentation to encourage discussion. As a contribution to the state of the art, we welcome papers describing completed research, work in progress

reports as well as problem descriptions with respect to the following topics.

- Examples of agent-based models of human behaviour in need of cognitive models
- Examples for cognitive theories that might be testable or usable for agent-based simulations
- Validation and evaluation issues in cognitive modelling and agent-based simulation
- Implementation issues
- Methodological aspects of cognitive modelling and agent-based simulation
- Models of human perception, reasoning and action
- Specific areas of application such as strategies of spatial orientation and navigation

WS 2: 2nd Workshop on Behaviour Monitoring and Interpretation (BMI'08)

- **Organizers:** Björn Gottfried, Hamid Aghajan
- **Website:** <http://www.tzi.de/~bjoerng/BMI-08>
- **Submission deadline:** 6 June 2008

General BMI session

Monitoring what goes on in the environment, what people do and how they interact with their surroundings

is of interest in several areas, such as in ambient intelligence, healthcare applications, or mobile services. This workshop focuses on methods analysing and interpreting the behaviour of single people, or of small groups of people. This is for the purpose of intention recognition, the triggering of smart home environments, or generally for the investigation of how humans and animals deal with specific problems or how they do specific things.

While much effort is spent on how to obtain information about the behaviour of people, e.g. by video-technologies or sensors equipped at bodies, the goal of this workshop is the high-level representation and interpretation of the monitored behaviour. To make the vision of behaviour monitoring and interpretation a reality, there are many serious challenges that must be addressed including lack of complete information about the monitored behaviour or the imprecision of the obtained data. Furthermore, knowledge representation issues, such as ontologies about behaviour patterns, have to be considered in the context of intention recognition, and questions have to be answered concerning how to reason about behaviour patterns, e.g. for making predictions.

Ambient Assisted Living session

While technological advances in sensing and processing have ushered in an unprecedented opportunity for realising behaviour monitoring applications, much effort remains needed for the development of methods to integrate and exploit the available data for addressing specific applications. In addition to the general BMI topic, part of this year's workshop features a thematic focus section on Ambient Assisted Living (AAL). AAL has been an area of expanded interest in utilizing available technology to offer quality of life and well-being solutions for a growing segment of the population. Methods and approaches in formulating and addressing application needs in AAL will be presented and discussed. Prospective authors are encouraged to submit a paper on the general BMI topic or contribute to the AAL section.

Keynote Speaker: Juan Carlos Augusto, School of Computing and Mathematics, University of Ulster at Jordanstown, UK

WS 3: 3rd Workshop on Emotion and Computing – Current Research and Future Impact

- **Organizer:** Dirk Reichardt
- **Website:** <http://www.emotion-and-computing.de>.
- **Submission deadline:** 6 June 2008

Several approaches have been made concerning emotion recognition, emotion modeling, generation of emotional user interfaces and dialogue systems as well as anthropomorphic communication agents. From a scientific point of view, emotions play an essential role in decision making, as well as in perception and learning. Furthermore, emotions influence rational thinking and therefore should be part of rational agents as proposed by artificial intelligence research. Another focus is on human computer interfaces which include believable animations of interface agents.

The workshop focusses on the role of affect and emotion in computer systems including emotion recognition, emotion generation and emotion modeling with special attention to AI specific problems and applications. Both shallow and deep models of emotion are in the focus of interest. The goal is to provide a forum for the presentation of research as well as of existing and future applications and for lively discussions among researchers and industry. The presented papers should discuss theories, architectures and applications which are based upon emotional aspects of computing.

Contributions are solicited from the following fields:

- Artificial Intelligence Research
- Cognitive Science and Cognitive Robotics
- Multi-agent System Technology
- Speech Synthesis and Speech Recognition
- Computer Game Development
- User Modeling and Personalization
- Applications using models of emotion
- Affective Computing
- Dialogue Systems

WS 4: 4th Workshop on Knowledge Engineering and Software Engineering (KESE 2008)

- **Organizers:** Grzegorz Nalepa, Joachim Baumeister
- **Website:** <http://kese.ia.agh.edu.pl>
- **Submission deadline:** 6 June 2008

Intelligent systems have been successfully developed in various domains based on techniques and tools from the fields of knowledge engineering and software engineering. Thus, declarative software engineering techniques have been established in many areas, such as knowledge systems, logic programming, constraint programming, and lately in the context of the Semantic Web and business rules.

The fourth workshop on Knowledge Engineering and Software Engineering (KESE 2008) wants to bring together researchers and practitioners from both fields of software engineering and artificial intelligence. The intention is to give ample space for exchanging latest research results as well as knowledge about practical experience. This year we also encourage to submit tool presentations, i.e., system descriptions that clearly show the interaction between knowledge engineering and software engineering research and practice.

The previous KESE Workshops were held at the KI-2007, KI-2006, and KI-2005.

Topics of interest include but are not limited to:

- AI in software/knowledge engineering: knowledge and experience management, declarative logic-based approaches, constraint programming, agent-oriented software engineering, issues of maintenance, business rules
- Knowledge/software engineering in AI: Engineering the Semantic Web, database and knowledge base management in AI systems, tools for intelligent systems, evaluation of (intelligent) systems, process models

WS 5: Ontology-based Information extraction (OBIES 2008)

- **Organizers:** Benjamin Adrian, Günter Neumann, Alexander Trousov, Borislav Popov
- **Website:** <http://www.dfki.uni-kl.de/~adrian/workshops/obies2008>
- **Submission deadline:** 1 June 2008

More and more information extraction (IE) systems use ontologies for extraction tasks. These systems use knowledge representation techniques for extracting information from lesser structured domains more efficiently.

The advantages of these procedures are especially an increase of quality in IE-templates, reusability, and maintainability. Ontologies in IE may provide new techniques for supporting open tasks of semantic analyses regarding for instance temporal analyses, resolution of contradiction, or context awareness.

There are several open research topics about ontology-based information extraction, for instance a proven architecture, evaluation guidelines regarding the use of ontologies, or ontologies vs. templates. Suggested topics for contributions are:

- Ontologies in templates, annotated corpora or grammars
- Instance resolution (unification, disambiguation, and recommendation)
- Relation resolution (extraction, recommendation, inference)
- Using uncertainty in extraction tasks
- Evaluation and comparison of OBIE systems (corpora, metrics, etc.)
- OBIE as ontology population from texts
- Ontology-based text annotation as inverse of OBIE
- Context models for improving IE performance (query, time, user, etc.)
- RDF/OWL as knowledge representation formalism for NLP
- Integration of linguistic annotations and domain ontologies

WS 6: 22. Workshop Planen, Scheduling und Konfigurieren, Entwerfen (PuK 2008)

- **Organizers:** Jürgen Sauer, Stefan Edelkamp, Bernd Schattenberg
- **Web Site:** <http://www-is.informatik.uni-oldenburg.de/~sauer/puk2008/>
- **Submission deadline:** 22 June 2008

The PuK workshop is the regular meeting of the special interest group on planning, scheduling, design and configuration within the AI section of the GI. As in previous years the PuK workshop brings together researchers and practitioners of the areas of planning, scheduling, design and configuration. It provides a forum for the exchange of ideas, evaluations and experiences especially in the use of AI techniques within these application and research areas.

General Topics

The general topics of interest of the PuK community include but are not limited to:

- Practical applications and architectures
- Knowledge representation and problem solving techniques: domain-specific techniques; heuristic techniques; distributed problem solving; constraint-based techniques; iterative improvement; integrating reaction and user-interaction.
- Learning in the context of planning, scheduling and design.

Focus Theme: Practical Applications

As in earlier workshops, we intend to focus on a specific area of interest: This year it is systems and methods that are deployed in real-world applications. The workshop wants to attract practitioners in the field, who are invited to present practical approaches and to discuss their experiences, concepts, and ideas. In this way, the focal topic also aims at stimulating mutual exchange between practitioners and researchers about our common field's future research directions.

Besides this, further submissions from the general topics mentioned above are welcome.

WS 7: Ambient Intelligence

- **Organizers:** Ulrich Furbach, Rudolf Ganz, Norbert Wehn
- **Web Site:** <http://web.mac.com/ulrichfurbach/Aml/>
- **Submission deadline:** 1 June 2008

Ambient Intelligence represents a vision of the future where we shall be surrounded by electronic environments, sensitive and responsive to people. Technologies for this aim combine various disciplines and concepts, like ubiquitous computing, intelligence systems, control engineering, sensor and actuator technology and cognitive aspects.

This workshop is a successor of the Tag der Technologie in Rheinland-Pfalz in 2007, which was organised by the Ministry of Research of Rheinland-Pfalz, aiming at a survey of Aml research and development in the state. This workshop is open to everybody and is aiming at bringing together various communities and establishing networks for researching Ambient Intelligence. Another important goal is to help connecting research groups with industrial developments and companies.

Submission of technical papers, position papers as well as system descriptions are welcome.