KI 2009 – Workshops

Klaus-Dieter Althoff

Workshops at a Glance
- 3rd Workshop on Behaviour Monitoring and Interpretation – Well Being
- Complex Cognition
- 1st International Workshop on Distributed Computing in Ambient Environments (DiComAe)
- 4th Workshop "Emotion and computing – current research and future impact"
- 5th Workshop on Knowledge Engineering + Software Engineering (KESE 09)
- Machine Learning in Real-time Applications
- 23rd Workshop on planning, scheduling, design, and configuration (PuK 2009)
- Relational Approaches to Knowledge Representation and Learning
- Representations for Mobile Robots
- User tracking for augmented reality applications – Visual SLAM, inertial sensing and other methods
- Self-X in mechatronics and other engineering applications
- Human-Machine-Interaction

Im Rahmen der 32. Jahrestagung Künstliche Intelligenz (KI 2009) in Paderborn vom 15. bis 18. September 2009 werden die folgenden 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://ki2009.upb.de/*

3rd Workshop on Behaviour Monitoring and Interpretation – Well Being

www.tzi.de/~bjoerng/BMI-KI-09

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 deal with specific problems in their everyday life.

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 Well Being. While including areas such as ambient assisted living, Well Being is more general and captures different interfaces and methods that advance modern living. Techniques and approaches in formulating and addressing application needs in Well Being will be presented and discussed.

Possible topics and Application Areas
- ambient intelligence
- smart homes, ambient lighting
- disaster management
- health care and fitness
- avatars and social networks

Submission
June 01 regular papers
July 15 short papers

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Complex Cognition

www.cogsys.wiai.u ni-bamberg.de/KI09WSCoCo/

Gemeinsamer Workshop der Fachgruppe Kognition des FB KI der GI und der Gesellschaft für Kognitionswissenschaft

The workshop is dedicated to complex cognition in problem solving, reasoning and decision making. Complex cognitive processes typically involve several cognitive mechanisms (e.g. impact of emotion on decision) and arise in complex situations. The focus of the workshop is on AI approaches to model complex cognitive processes and of contributions of psychology which give insights in the mechanisms of complex cognition. The workshop aims to bring together researchers of AI and psychology and to strengthen the interdisciplinary understanding of complex cognition.
Submissions should be sent until June 21 to ute.schmid@uni-bamberg.de

Workshop Co-Chairs
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1st International Workshop on Distributed Computing in Ambient Environments (DiComAe)

ki2009.uni-paderborn.de/index.php?id=54

This workshop is looking for papers describing original research work, experimental efforts, practical experiences with existing systems and industrial developments in the field of distributed, ambient computing. The workshop provides a forum for scientists and engineers from academia and industry to exchange and discuss their experiences, new ideas, research results, and products particularly dealing with semantics and knowledge processing for developing smart applications in for instance health care, sustainability or consumer domains.

Topics of Interest
- Distributed algorithms for communication, synchronization and coordination in ambient computing environments
- Environments, middleware and tool support for ambient computing
- Distributed applications
- Fault tolerance and security in ambient distributed environments
- Semantic processing in distributed environments
- Ontologies and security
- Energy-awareness in distributed computing

Important Dates
Submission deadline, June 1st, 2009
Notification: July 1st, 2009
camera ready submission: August 1st, 2009

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4th Workshop: "emotion and computing - current research and future impact"

www.emotion-and-computing.de

In recent years computer science research has shown increasing efforts in the field of software agents which incorporate emotion. Several approaches have been made concerning emotion recognition, emotion modelling, generation of emotional user interfaces and dialogue systems as well as anthropomorphic communication agents.

The workshop intends to discuss the scientific methods considering their benefit for current and future applications. Contributions are solicited from the following fields:
- AI Research
- Cognitive Sciences and Cognitive Robotics
- Multi-agent System Technology
- Speech Synthesis and Speech Recognition
- Dialogue Systems
- Modeling Uncertainty and Vagueness
- Computer Game Development
- User Modeling and Personalization
- Applications using models of emotion
- Affective Computing

Important Dates
Submission deadline: June 28, 2009
Notification: July 17, 2009
camera ready submission: August 2, 2009

Contact
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Workshop KESE 2009

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 fifth workshop on Knowledge Engineering and Software Engineering (KESE 2009) 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. The previous KESE Workshops were held at the KI-2008, KI-2007, KI-2006, and KI-2005.

Topics of Interest
- Knowledge and software engineering for the Semantic Web
- Ontologies in practical knowledge and software engineering
- Business Rules design and management
- Knowledge representation, reasoning and management
- Practical knowledge representation and discovery techniques in software engineering
- Agent-oriented software engineering
- Database and knowledge base management in AI systems
- Evaluation and verification of intelligent systems
- Practical tools for intelligent systems
- Process models in AI applications
- Declarative, logic-based approaches
- Constraint programming approaches

Call for Tool Presentations
This year we also strongly encourage the submission of tool presentation papers, i.e., system descriptions that clearly show the interaction between knowledge engineering and software engineering research and practice. Such papers could be shorter, and have to be explicitly identified as tool presentation.

Important Dates
Paper submission: June 8, 2009
Notification: July 8, 2009
Camera ready copy: July 27, 2009

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Machine Learning in Real-Time Applications (MLRTA 09)

www.hs-owl.de/init/aktuelles/call-for-papers-mlrta-09.html

Cognitive systems are successfully applied in different industries, such as Automotive, Telecommunication, Robotics, Image Processing Based Automation as well as Machine and Plant Engineering. The complexity of such systems, situations, and tasks very often makes manual solutions such as classification, diagnosis, and model identification more and more unrealistic. Instead, machine learning algorithms are applied.

Industrial cognitive systems deal with processing information from communication and automation systems under the criteria of process real-time, robustness, and limitation of resources. The focus of the workshop is therefore based upon the description, modelling, and the design of machine learning algorithms that can be implemented effectively into microelectronic circuits and resource-limited distributed systems.

Suggested topics for contributions are
- Practical applications and architectures for machine learning
- Knowledge representation
- Classifier design under hardware and software resource limitations
- Fast machine learning algorithms
- Concepts and strategies for distributed classifiers
- Data logging for real-time machine learning
- Diagnosis under real-time constraints
- Adaptive real-time systems
- Future of distributed system machine learning

Important Dates
Paper submission: Jun 01, 2009
Notification: Jul 01, 2009
Final version due: Jul 14, 2009

Organisation
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PuK 2009: 23. Workshop Planen, Scheduling und Konfigurieren / Entwerfen

www.puk-workshop.de/

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
- Practical applications of configuration, planning or scheduling systems
- Architectures for planning, scheduling or configuration systems
- Knowledge representation and problem solving techniques, e.g.
- 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: System Architectures
As we have done in earlier workshops, we intend to focus on a specific area of interest: This year it is the area of system architectures, i.e. the impact of actually discussed software system architectures like SOA on planning, scheduling, and configuration systems as well as the impact of planning and configuration on software system development (intelligent configuration of software systems).

This focus shall also help to attract the workshop to practitioners in the field, who are invited to present practical problems and to discuss their experiences, concepts, and ideas. It is also intended to stimulate a mutual exchange with the researchers on our common field's future directions. Thus, a second main goal of this part of the workshop is the support of research planning.

Organizers
Jürgen Sauer,
Stefan Edelkamp,
Bernd Schattenberg

Relational approaches to knowledge representation and learning

www.fernuni-hagen.de/wbs/relkrl09.html

Knowledge representation encompasses a variety of methods and formalisms to encode and process all types of knowledge, belief, and information. It provides the theoretical foundation for rational and intelligent behaviour in real environments, focusing on topics like default logics and uncertain reasoning, belief change, ontologies, and argumentation, among many others. Moreover, in a thematical respect, knowledge representation is closely related to the areas of machine learning and knowledge discovery the methods of which allow the acquisition of useful information to build up knowledge bases.

Knowledge representation has made substantial progress over the last decade by devising sophisticated methods for inference and reasoning. Nevertheless, the connection to learning still holds undeveloped potential in methodological and technical respects which might be crucial for practical applications. Furthermore, the handling of relational information, i.e. the explicit representation of knowledge about objects and its linking to knowledge about classes, is still a challenge for many subareas of knowledge representation. Ontologies, logic programming and probabilistic relational models are just some important examples of areas of research that address both of these points.

The aim of this workshop is to strengthen the connection between knowledge representation and learning by focusing on relational and first-order approaches to all areas of knowledge representation and learning, in particular
- default and conditional logics
- logic programming
- uncertain reasoning
- nonmonotonic and nonclassical logics
- belief revision
- probabilistic networks
- inference processes
- machine learning
- data mining
- knowledge discovery

- knowledge engineering
- ontologies
- agent systems
- applications

Organizers
Gabriele Kern-Isberner,
Christoph Beierle

Representations for Mobile Robots

In the past decades, research in mobile robotics emphasized low-level sensing and control tasks, including sensor data interpretation, mapping, and path planning. Nowadays, the focus has changed to build robots with higher level cognitive functions that enable them to act in complex environments, e.g., 3D environments with multiple levels and complex structures or environments including various types of objects that can be manipulated. Robots acting autonomously in such environments must integrate perception, learning, reasoning, and planning capabilities.

This workshop aims at bringing together researchers developing techniques for representations that help mobile robots to successfully accomplish complex tasks in the real world.

Topics
- learning higher-level environmental representations
- spatial understanding
- cognitive modeling
- ontologies for spacial representations
- navigation/planning using higher-level environmental models
- models of human perception, reasoning, and action
- etc.

Abstracts of contributions should be emailed as PDF to maren@informatik.uni-freiburg.de by June 21th.

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User tracking for augmented reality applications – Visual SLAM, inertial sensing and other methods

Successful user tracking methods have been developed in the past years and impressive results have been demonstrated, ranging from vision- and model-based solutions over SLAM approaches to hybrid systems. This workshop focuses on user tracking for augmented reality applications. This application area requires tracking technologies that are unobtrusive and provide suitable precision, robustness and performance to enable accurate and stable augmentations. Independently of your working field we invite you to present your latest results and present in a critical way promising novel approaches of your research work. We propose to discuss in an open and informal atmosphere novel trends, hopes and frustrations of user tracking for augmented reality applications including novel hardware and sensors, novel algorithms, open challenges and applications. This workshop intends to bring together people from different communities working on similar topics with different tools and approaches. From large-scale user tracking in urban environments to indoor localisation for industrial maintenance scenarios in the smart factory of tomorrow, we are looking forward to share and learn more about your latest and fresh ideas.

Topics of Interest
- Visual SLAM: efficient approaches, map consistency, loop closing
- Sensor fusion: inertial sensing, GPS, time-of-flight cameras, laser
- User tracking in large-scale and outdoor environments
- Tracking with spherical cameras, feature detection and tracking in spherical images
- Rough user localisation based on WiFi or Bluetooth
- Motion capturing, user action and workflow recognition
- Etc.

Preliminary Schedule
Paper submission: 21.06.2009
Notification: 17.07.2009
Camera-ready version: 08.08.2009

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Self-X in mechatronics and other engineering applications

www.hni.upb.de/self-x-in-engineering

Many modern products are based on the close interaction of mechanics, electronics, and information technology, which is expressed by the term mechatronics. The integration of information technology and artificial intelligence enables new perspectives: engineering applications obtaining self-x-properties such as self-healing, self-coordination, self-organization or self-optimization. Self-optimization, for instance, enables mechatronic systems to react autonomously and flexibly on changing environmental conditions. Therefore they are capable of learning and optimizing their behavior during operation. Self-X properties are also used in other engineering disciplines such as production engineering or logistics.

The intention of this workshop is to join scientists and practitioners working on the implemenation of methods from artificial intelligence in classical engineering disciplines. Thus, the list of topics encompasses combinations of several methods and applications. Additionally, design methodologies and tools for technical systems with self-x-properties are highly relevant.

Methods: machine learning, evolutionary computation, planning and scheduling, multiagent systems, multiagent planning, fuzzy logic, probabilistic reasoning, swarm intelligence, expert systems
Applications: mechatronics, automotive systems, aeronautics, mechanical engineering, logistics, production engineering

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Design methodologies and tools: systems engineering, formal verification

Preliminary Schedule
Submission Deadline: 21.06.2009
Notification: 17.07.2009
Camera-Ready Paper: 08.08.2009

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Workshop on Human-Machine-Interaction

www.mmk.ei.tum.de/~waf/ki09hmi.html

Human–machine-interaction studies complex communication and interaction principles between people and computers. HMI research is concerned with a wide field of related topcis covering the realisation, evaluation of interactive machine and computing systems. It furthermore covers knowledge representation, displaying techniques, signal processing, pattern recognition, human factors, haptics and robotis, just to name a few.

The contributions of the workshop may cover:

- Ergonomic interfaces
- Human Factors
- Usability and Quality
- Adaptive and personalized interfaces
- Architectures for interaction
- Computer–augmented environments
- HMI for Robots
- Social Signal Processing
- Emotions
- Evaluation methods and techniques
- Gesture and eye–gaze based interaction
- Graphical user interface
- Non–verbal interfaces
- Speech and natural language interfaces
- User interface development environments

Important Dates
submission deadline: 05.06.2009
Notification: 10.07.2009
camera ready submission: 31.07.2009

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KI 2009 Tutorials

T1: Knowledge Representation and Reasoning for the Semantic Web – OWL 2 and Rules
Pascal Hitzler, Markus Krötzsch, Sebastian Rudolph, University of Karlsruhe (TH)

T2: Building Intelligent Mashups
Adrian Giurca, TU Cottbus
Emilian Pascalau, HPI, Potsdam

T3: Data Mining for Web 2.0
Andreas Hotho, University of Würzburg
Gerd Stumme, University of Kassel

T4: Humanoid Robots
Sven Behnke, University of Bonn

T5: Hybrid Planning – Theory and Applications
Susanne Biundo, Bernd Schattenberg, Ulm University