



BNAIC 2009

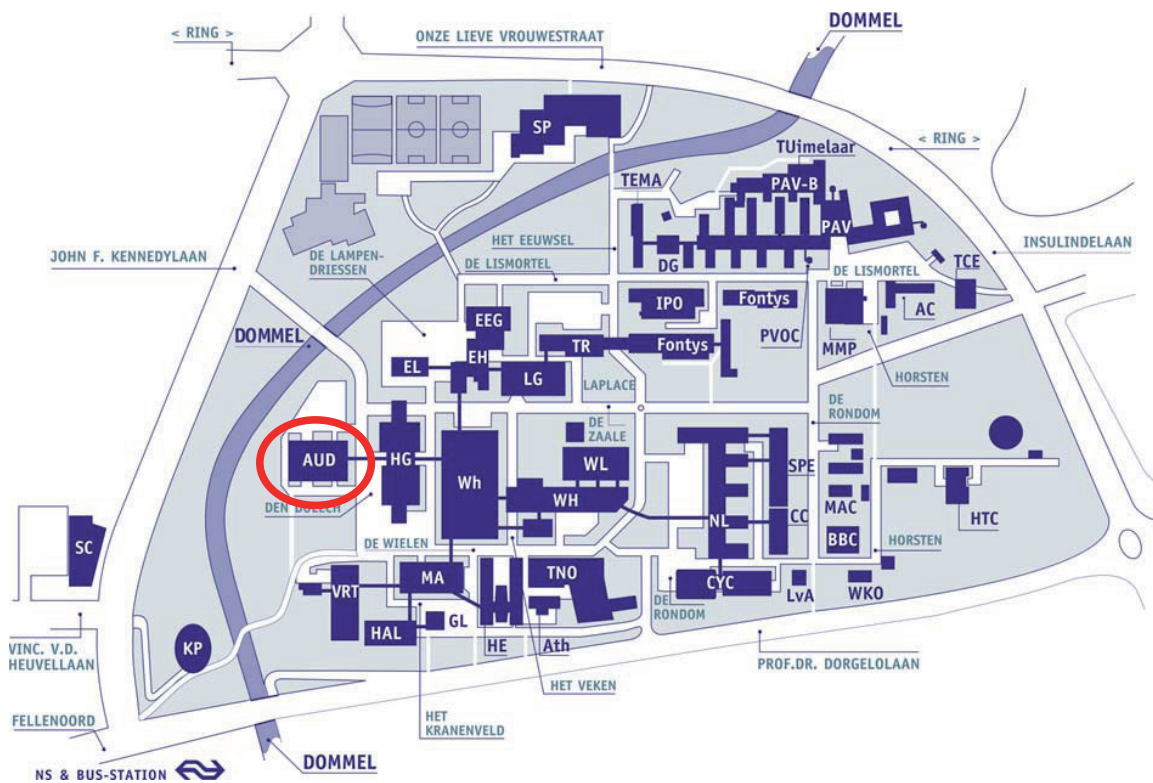
The 21st Benelux Conference on Artificial Intelligence

PROGRAM

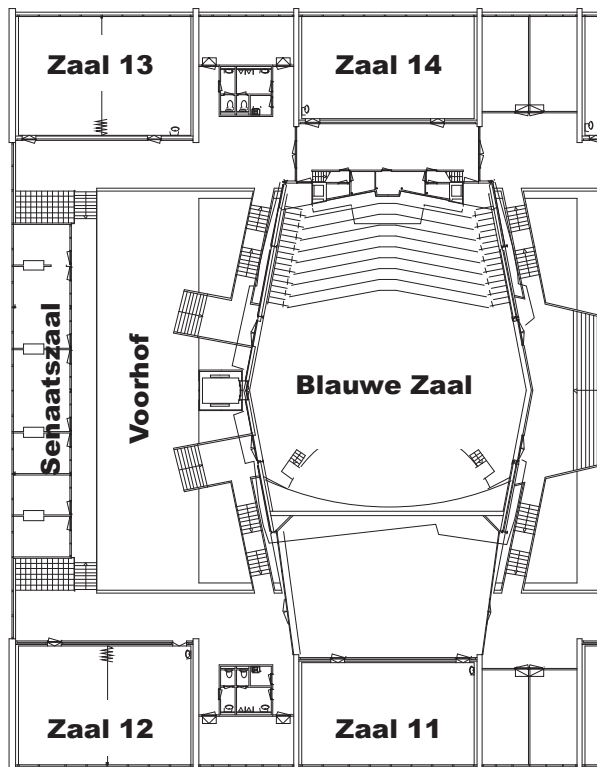
Benelux Conference on Artificial Intelligence

Eindhoven, 29-30 October 2009

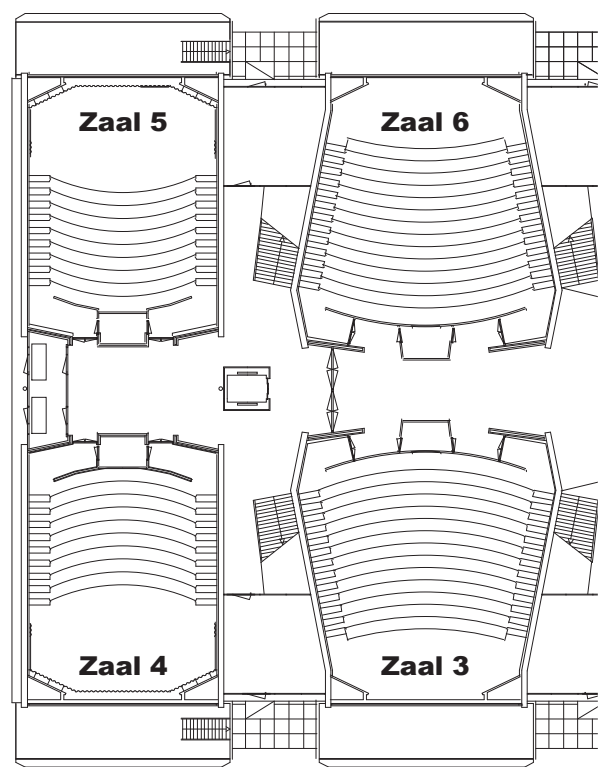
TU/e Campus



Conference Venue (Auditorium)



Upper floor



Ground floor

Program at a Glance

Thursday October 29th			
8:45 → 9:45	Registration		
9:45 → 10:00	Opening (<i>Blauwe zaal</i>)		
	Room A3	Room A5	Room A6
10:00 → 11:10	3P: MAL	3P: ABS	AP1
11:10 → 11:25	Coffee break		
11:25 → 13:00	4P: G	4P: L	4P: DM
13:00 → 14:30	Lunch (<i>Senaatszaal</i>) and Poster + demo session I (<i>Voorhof</i>)		
14:30 → 16:05	4P: IA1	4P: A&R	4P: ML1
16:05 → 16:30	Coffee break		
16:30 → 17:30	Keynote talk Wolfram Burgard (<i>Blauwe zaal</i>)		
17:30 → 17:35	Announcements (<i>Blauwe zaal</i>)		
18:30 → ...	Conference Dinner		

Friday October 30th			
9:00 → 10:00	Keynote talk Peter Flach (<i>Blauwe zaal</i>)		
	Room A3	Room A5	Room A6
10:00 → 10:45	2P: NLP	2P: EC	2P: ML2
10:45 → 11:05	Coffee break		
11:05 → 12:40	4P: KRR	4P: CS	Industry track
			Peter van der Putten
			2P
12:40 → 14:10	Lunch (<i>Senaatszaal</i>) and Poster + demo session II (<i>Voorhof</i>) - 13h: BNVKI meeting (A5)		
14:10 → 15:45	4P: IA2	4P: SW	1P: Industry Track
			3P: AP2
15:45 → 16:00	Coffee break		
16:00 → 16:30	Award Session (<i>Blauwe zaal</i>)		
16:30 → ...	Reception		

(AP1) & (AP2)	Applications I and II	(NLP)	Natural Language Processing
(A&R)	Applications and Robotics	(ABS)	Agent-Based Simulation
(G)	Games	(IA1) & (IA2)	Intelligent Agents I and II
(L)	Logics in AI	(SW)	Semantic Web
(DM)	Datamining	(KRR)	Knowledge Representation and Reasoning
(ML1) & (ML2)	Machine Learning I and II	(CS)	Complex Systems
(EC)	Evolutionary Computation	(MAL)	Multi-Agent Learning

Thursday, October 29th

8:45 → 9:45	<i>Registration</i>
9:45 → 10:00	<i>Opening</i>
10:00 → 11:10	<i>3 parallel sessions</i>

(MAL) Multi-Agent Learning

Chair: Katja Verbeeck

Replicator Dynamics for Multi-agent Learning - An Orthogonal Approach

Michael Kaisers

Learning what to observe in multi-agent systems

Yann-Michaël De Hauwere, Peter Vrancx and Ann Nowé

Decentralized Learning in Wireless Sensor Networks

Mihail Mihaylov, Karl Tuyls and Ann Nowe

(ABS) Agent-Based Simulation

Chair: Frances Brazier

Comparison of Agent-Based and Population-Based Simulations of Displacement of Crime

Tibor Bosse, Charlotte Gerritsen, Mark Hoogendoorn, Syed Waqar Jaffry and Jan Treur

Using Agent-based Organisational Models for Crisis Management

Thomas B. Quillinan, Frances Brazier, Huib Aldewereld, Frank Dignum, Virginia Dignum, Loris Penserini and Niek Wijngaards

Modelling Social Learning of Adolescence-Limited Criminal Behaviour

Tibor Bosse, Charlotte Gerritsen and Michel C.A. Klein

(AP1) Applications I

Chair: Peter Bosman

Eye Movements Disclose Decisions in Set

Joost Broekens, Walter A. Kusters and Timo de Vries

Evolutionary Multiobjective Optimization for Dynamic Hospital Resource Management

Anke K. Hutzschenreuter, Peter A.N. Bosman and Han La Poutré

Stable Scheduling of Airport Ground Handling Services by Heterogeneous Agents

Xiaoyu Mao, Nico Roos and Alfons Salden

11:10 → 11:25	<i>Coffee break</i>
---------------	---------------------

11:25 → 13:00	<i>3 parallel sessions</i>
---------------	----------------------------

(G) Games

Chair: Jos Uiterwijk

A step in the right direction: Botdetection in MMORPGs using movement analysis

Marlieke van Kesteren, Jurriaan Langevoort and Franc Grootjen

Solving SameGame and its Chessboard Variant

Frank W. Takes and Walter A. Kusters

Monte-Carlo Tree Search in Poker using Expected Reward Distributions

Guy Van den Broeck, Kurt Driessens and Jan Ramon

Randomized Parallel Proof-Number Search

Jahn-Takeshi Saito, Mark H.M. Winands and H. Jaap van den Herik

(L) Logics in AI

Chair: Koen Hindriks

Preferential model and argumentation semantics

Nico Roos

Complete Extensions in Argumentation Coincide with Three-Valued Stable Models in Logic Programming

Martin Caminada and Yining Wu

Service Specification and Matchmaking using Description Logic

M. Birna van Riemsdijk, Rolf Hennicker, Martin Wirsing and Andreas Schroeder

Code Patterns for Agent-Oriented Programming

Peter Novak and Wojciech Jamroga

(DM) Datamining

Chair: Hendrik Blockeel

Approximation Bound for K-Means clustering of Binary Data

Nikolaj Tatti

Constraint Programming for Correlated Itemset Mining

Tias Guns, Siegfried Nijssen and Luc De Raedt

A new constraint for mining sets in sequences

Boris Cule, Bart Goethals and Céline Robardet

Descriptive Mining of Folk Music: A testcase

Jonatan Taminau, Ruben Hillewaere, Stijn Meganck, Darrell Conklin, Ann Nowé and Bernard Manderick

13:00 → 14:30

Lunch, Poster Session I & Demos

14:30 → 16:05

3 parallel sessions

(IA1) Intelligent Agents I

Chair: Gerhard Weiss

Nash Social Welfare in Multiagent Resource Allocation

Sara Ramezani and Ulle Endriss

Computing the fault tolerance of multi-agent deployment

Yingqian Zhang, Efrat Manisterski, Sarit Kraus, V.S. Subrahmanian and David Peleg

A Distributed Agent-based Approach to Stabilization of Global Resource Utilization

Evangelos Pournaras, Martijn Warnier and Frances Brazier

Multi-player Multi-issue Negotiation with Complete Information

Mengxiao Wu, Mathijs de Weerd, Han La Poutre, Chetan Yadati, Yingqian Zhang and Cees Witteveen

(A&R) Applications and Robotics

Chair: Jaap van den Herik

A Personalized Tourist Trip Design Algorithm for mobile Tourist Guides

Wouter Souffriau, Pieter Vansteenwegen, Joris Vertommen, Greet Vanden Berghe and Dirk Van Oudheusden

Intelligent Agent Modeling as Serious Game

Rick D.W.F. van Krevelen

Humanoid Robots are Retrieving Emotion from Motion Analysis

Tino Lourens and Emilia Barakova

Local sampling for indoor flight

Guido C.H.E. de Croon, Christophe de Wagter, Bart Remes and Rick Ruijsink

(ML1) Machine Learning I

Chair: Walter Kusters

The Effect of Life Expectancy on Risk Aversion

Vincent van der Goes and Agoston E. Eiben

Probabilistic Relational Modelling of Mammographic Images

Nivea Ferreira and Peter J.F. Lucas

Improved mammographic CAD performance using multi-view information: A Bayesian network framework

Marina Velikova, Maurice Samulski, Peter J.F. Lucas and Nico Karssemeijer

Multi-Task Preference Learning with Gaussian Processes

Adriana Birlutiu, Perry Groot and Tom Heskes

16:05 → 16:30

Coffee break

16:30 → 17:30

Invited Talk

Reliable Life-long Navigation for Mobile Robots

Prof. Wolfram Burgard

Over the last years, there has been a tremendous progress in the area of mobile robot navigation. Robots are able to build large-scale maps of their environments and to use these maps for navigation. However, the final step towards fully autonomous robots in real-world scenarios and industrial applications has not entirely been taken. In this presentation, I will describe some state-of-the-art techniques for robot navigation, potentials, and open research questions for taking the leap towards truly autonomous robots operating over long periods of time in complex and dynamic application scenarios.

17:30 → 17:35

Announcements

18:30 → ...

Conference Dinner

Friday, October 30th

9:00 → 10:00

Invited Talk

Machine Learning: Unity in Diversity

Peter Flach

The last decade has seen the range of AI applications in everyday computing grow at an unprecedented rate. Necessitated by the ever-increasing volume of digital data, many of these applications involve some form of machine learning. That principles of machine learning are entering the computer science curriculum seems therefore entirely justifiable. Nevertheless, the field can appear impenetrable to a novice due to a bewildering diversity of possible methods and approaches. The aim of this talk is to emphasise the unifying elements in this diversity. Most of these elements have always been there but were perhaps not given the place they deserve. For instance, every machine learning model is built from features, yet features are typically taken for granted and discussed only in passing, if at all. I will also propose a novel and pragmatic distinction between splitting models and grading models, which offers several advantages over more common but ultimately somewhat arbitrary oppositions such as Bayesian, instance-based, rule-based, and the like.

10:00 → 10:45

3 parallel sessions

(NLP) Natural Language Processing

Chair: Antal van den Bosch

Token merging in language model-based confusable disambiguation

Herman Stehouwer and Menno van Zaanen

Predicting the Past: Memory Based Copyist and Author Discrimination in Medieval Epics

Mike Kestemont and Karina Van Dalen-Oskam

(EC) Evolutionary Computation

Chair: Ida Sprinkhuizen

On Empirical Memory Design, Faster Selection of Bayesian Factorizations and Parameter-Free Gaussian EDAs

Peter A.N. Bosman

Evolving and Transferring Probabilistic Policies for Relational Reinforcement Learning

Martijn van Otterlo and Tim De Vuyst

(ML2) Machine Learning II

Chair: Peter Lucas

Using a satisfiability solver to identify deterministic finite state automata

Marijn Heule and Sicco Verwer

Adaptive Concept Drift Detection

Anton Dries and Ulrich Rickert

10:45 → 11:05

Coffee break

(KRR) Knowledge Representation and Reasoning*Chair: Birna van Riemsdijk***Identifying disease-centric subdomains in very large medical ontologies, a case-study on breast-cancer concepts in SNOMED***Krystyna Milian, Zharko Aleksovski, Richard Vdovjak, Frank van Harmelen and Annette ten Teije***Preferring maximum confirmation diagnoses***Nico Roos***Ontology-based Business Activity Monitoring Agent***Duco Ferro, Mark Hoogendoorn and Catholijn M. Jonker***Determining the Environment: A Modal Logic for Closed Interaction***Jan Broersen, Rosja Mastop, John Jules Ch. Meyer and Paolo Turrini***(CS) Complex Systems***Chair: Martijn Schut***The Complex Dynamics of Sponsored Search Markets***Valentin Robu, Han La Poutré and Sander Bohte***Behavioral differences and the evolution of cooperation in adaptive social networks***Sven Van Segbroeck, Francisco C. Santos, Tom Lenaerts and Jorge M. Pacheco***Adaptive Learning in Evolving Task Allocation Networks***Tomas Klos and Bart Nooteboom***The Windmill Method for Setting up Support for Resolving Sparse Incidents in Communication Networks***Duco N. Ferro, Catholijn M. Jonker and Alfons H. Salden***Industry Track***Chair: Mykola Pechenizkiy***Invited Talk****AI in the Wild: Decisioning, Predictive Analytics and Simulation for Customer Experience Optimization***Peter van der Putten*

To put it mildly, the field of marketing doesn't always have a positive image with the general public. To a large extent companies themselves are to blame because of bombarding random customers with untargeted, irrelevant and untimely sales messages. Companies are starting to realize that they are better off if they balance business priorities with actual customer needs at an individual customer level, and that interactions that the customer initiates are perhaps a better moment in time to make real time recommendations on how to get more value out of the company, leading to an improved customer experience. More visionary marketers are using rule and machine learning based technologies such as real time predictive data mining and decisioning on a massive scale to enable this. In this talk I would like to give a peak behind the scenes and provide real world examples of the extent and type of use and what some the challenges are when deploying these technologies out of the lab, into the wild.

A Modular Hybrid Recommender Engine*Marco Tiemann, Steffen Pauws and Fabio Vignoli***Applying Bayesian Networks for Intelligent Adaptable Printing Systems***Arjen Hommersom, Peter Lucas, Ren Waarsing and Pieter Koopman*

14:10 → 15:45

3 parallel sessions

(IA2) Intelligent Agents II

Chair: Ann Nowé

Automated Visual Attention Manipulation (Extended Abstract)

Tibor Bosse, Rianne van Lambalgen, Peter-Paul van Maanen and Jan Treur

Filtering Algorithm for Agent-Based Incident Communication Support in Mobile Human Surveillance

Duco N. Ferro, and Catholijn M. Jonker

Coordination by design and price of autonomy

Chetan Yadati, Adriaan ter Mors, Cees Witteveen and Yingqian Zhang

Approximating the Qualitative Vickrey Auction by a Negotiation Protocol

Koen V. Hindriks, Dmytro Tykhonov and Mathijs de Weerd

(SW) Semantic Web

Chair: Leon van der Torre

Reasoning with Spatial Plans on the Semantic Web

Rinke Hoekstra, Radboud Winkels and Erik Hupkes

Using Semantic Distances for Reasoning with Inconsistent Ontologies

Zhisheng Huang and Frank van Harmelen

Knowledge Engineering rediscovered: Towards Reasoning Patterns for the Semantic Web

Frank van Harmelen, Annette ten Teije and Holger Wache

Genetic Algorithms for RDF Chain Query Optimization

Alexander Hogenboom, Viorel Milea, Flavius Frasincar and Uzay Kaymak

Industry Track & Applications II

Industry Track

Chair: Mykola Pechenizkiy

Data mining for intelligence led policing

Rob van der Veer

(AP2) Applications II

Chair: Virginia Dignum

Multi-Agent Based Simulation for Boarding

Jan Audenaert, Katja Verbeeck and Greet Vanden Berghe

Automatic Web Site Authoring with SiteGuide

Viktor de Boer, Vera Hollink and Maarten van Someren

The Free Speech Engine: Conversational web service compatibility for free

Ruud Stegers, Frank van Harmelen and Annette ten Teije

15:45 → 16:00

Coffee Break

16:00 → 16:30

Award Session

16:30 → ...

Farewell Reception

Posters

Poster Session I

Thursday, Lunchbreak, Voorhof

Meaningful Representations Prevent Catastrophic Interference

Jordi Bieger, Ida Sprinkhuizen-Kuyper and Iris van Rooij

Checking Consistency in role oriented Dependence Networks

Guido Boella, Valerio Genovese, Leon van der Torre and Serena Villata

Bayesian Networks: the Range of the Prior Convergence Error

Janneke H. Bolt

White Manipulation in Judgment Aggregation

Davide Grossi, Gabriella Pigozzi and Marija Slavkovic

Immobile Random Sensor Networks for Surveillance and Rescue

Theo M. Hupkens, Raymundo R. Hordijk and Oscar J.G. Somsen

False information and the emergence of conflict

Steven de Jong

Exploring Stable and Emergent Network Topologies

Paul D. van Klaveren, Herman Monsuur, Rene H.P. Janssen, Martijn C. Schut and Aguston E. Eiben

Negotiation Protocols in Distributed Nurse Rostering

Ruben Lagatie, Stefaan Haspeslagh and Patrick De Causmaecker

The application of complex systems concepts in a military context

Anthonie van Lieburg, Nanne Le Grand and Martijn Schut

Optimized online learning for QoE prediction

Vlado Menkovski, Adetola Oredope, Antonio Liotta and Antonio Cuadra Sánchez

Towards prediction of algorithm performance in real world optimisation problems

Tommy Messelis, Stefaan Haspeslagh, Burak Bilgin, Patrick De Causmaecker and Greet Vanden Berghe

Using Intelligent Search Techniques to Play the Game Khet

Pim J.A.M. Nijssen and Jos W.H.M. Uiterwijk

Visual Concept Detection using MOD Salient Points

Ard Oerlemans, Erwin M. Bakker and Michael S. Lew

Matching and Maximizing? A neurally plausible model of stochastic reinforcement learning

Jered Vroon, Iris van Rooij and Ida Sprinkhuizen-Kuyper

Combining Visual Exploration and Searching for Interactive Texture Retrieval

Bart Thomee, Mark. J. Huiskes, Erwin Bakker and Michael S. Lew

An Agent Model of Temporal Dynamics in Relapse and Recurrence in Depression

Azizi A. Aziz, Michel C.A Klein, and Jan Treur

Development of Virtual Agents with a Theory of Emotion Regulation

Tibor Bosse and Frank P. J. de Lange

Discrimination Aware Classification

Faisal Kamiran and Toon Calders

Poster Session II

Friday, Lunchbreak, Voorhof

An Agent Model for a Human's Functional State and Performance

Tibor Bosse, Fiemke Both, Rianne M. van Lambalgen and Jan Treur

Truth, Lies and BS; distinguishing classes of dishonesty

Martin Caminada

Reasoning About Multi-Attribute Preferences

Koen V. Hindriks, Catholijn M. Jonker and Wietske Visser

The Influence of Culture on ABMP Negotiation Parameters

Gert Jan Hofstede, Catholijn M. Jonker and Tim Verwaart

Incorporating BDI agents into human-agent decision making research

Bart Kamphorst, Arlette van Wissen, Virginia Dignum

AH 12 Years Later: a Comprehensive Survey of Adaptive Hypermedia Methods and Techniques

Evgeny Knutov, Paul De Bra and Mykola Pechenizkiy

Argumentation Mining: The Detection, Classification and Structuring of Arguments in Text

Raquel Mochales Palau and Marie-Francine Moens

Towards nature-inspired communication in Peer-To-Peer networks

Christophe Guéret

Social diversity favors the emergence of cooperative behavior

Francisco C. Santos, Marta D. Santos, Sven Van Segbroeck and Jorge M. Pacheco

Dynamic Service Reconfiguration and Enactment Using an Open Matching Architecture

Sander van Splunter, Frances Brazier, Julian Padget and Omer Rana

Quiescence Search for Stratego

Maarten P.D. Schadd and Mark H.M. Winands

Opponent Modeling in Stratego

Jan A. Stankiewicz and Maarten P.D. Schadd

Intelligent Assistants in Crisis Management: from PDA to TDA

Jurriaan van Diggelen, Robbert-Jan Beun and Peter J. Werkhoven

Extracting the Main Content from HTML Documents

Samuel Louvan

Prediction of Successful Participation in a Lifestyle Activity Program using Data Mining Techniques

Marten Pijl, Joyca Lacroix, Steffen Pauws and Annelies Goris

In Search for Intelligence: Automatically Estimating the Implicitness of Police Officers Observation Messages, an Ongoing Action Research

Xandra van de Putte, Paul Oling and Jan-Kees Schakel

eHealth Personalization in the Next Generation RPM Systems

Aleksandra Tesanovic, Goran Manev, Mykola Pechenizkiy and Ekaterina Vasilyeva

Context Aware Sales Prediction

Indrė Žliobaitė, Jorn Bakker and Mykola Pechenizkiy

Demonstrations

Friday & Thursday, Lunchbreak, Voorhof

Developing Novel Extensions to Support Prototyping for Interactive Social Robots

Martijn ten Bhömer, Christoph Bartneck, Jun Hu, Rene Ahn, Karl Tuyls, Frank Delbressine and Loe Feijs

Cobes: The clean, safe and hospitable metro

Tom van Bergen, Maarten Bruggmans, Bart Dohmen and Niels Molenaar

SmartGoals: a Hybrid Human-Agent Soccer Training System

Mark de Graaf, Harm van Essen and Pepijn Rijnbout

Tourist Decision Support for Mobile Navigation Systems: a Demonstration

Joris Maervoet, Wouter Souffriau, Pieter Vansteenwegen, Greet Vanden Berghe and Dirk Van Oudheusden

Finding malfunctions in HVAC installations

Siem Opschoor

Simulating Knowledge and Dishonesty in a Client-Consultant Setting

Eugen Staab and Martin Caminada

Multi-agent Train Driver Rescheduling: Simulating Environment Dynamics

Erwin J.W. Abbink, Pieter-Jan Fioole, David Mobach, Leo Kroon, Eddy van der Heijden and Niek Wijngaards

Large Scale Text Mining with Highly Accurate Detection of Negatives

Jakub Zavrel, Remko Bonnema, Martijn Spitters, Gert Meijerink and Gerard Mulder

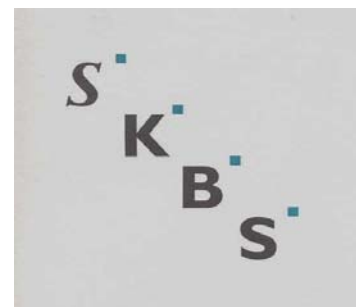
Notes

Notes

Notes

Notes

Sponsors



<http://www.tue.nl>
<http://www.unimaas.nl/bnvki/>
<http://www.research.philips.com>
<http://www.siks.nl>
<http://www.nwo.nl>
<http://www.d-cis.nl>
<http://www.maastrichtuniversity.nl>