

Program BNAIC'02

October 21–22, 2002

Faculty Club, Groot Begijnhof, Leuven, Belgium

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Katholieke Universiteit Leuven

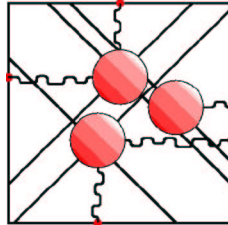
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EVEREST



Monday, October 21

09.00 – 09.45 **Registration**

09.45 – 10.00 **Opening**

10.00 – 11.00 **Invited talk:**
Hugues Bersini, Université Libre de Bruxelles
“The making of fruitful “out of control” software”

11.00 – 11.20 **Coffee Break**

11.20 – 12.20 **Paper presentations: Session 1**

Session 1A: Bayesian Reasoning I **(Van Croy)**

Chair: *Peter Lucas*

Marco A. Wiering	<i>Hierarchical Mixtures of Naive Bayesian Classifiers</i>	p. 363
Eveline M. Helsper & Linda C. van der Gaag	<i>Building Bayesian Networks through Ontologies</i>	p. 423
Wim Wiegerinck & Tom Heskes	<i>IPF for discrete chain factor graphs</i>	p. 499

Session 1B: Language I **(Van Hamaele)**

Chair: *Maarten de Rijke*

Antal van den Bosch & Sabine Buchholz	<i>Shallow parsing on the basis of words only: A case study</i>	p. 405
Paul Vogt	<i>Anchoring symbols to sensorimotor control</i>	p. 331
Joachim De Beule, Joris Van Looveren & Willem Zuidema	<i>From perception to language: grounding formal syntax in an almost real world</i>	p. 83

Session 1C: Multi-Agent Systems **(Lemaire)**

Chair: *Ann Nowé*

Nico Roos, Annette ten Teije, André Bos & Cees Witteveen	<i>Multi-Agent Diagnosis with spatially distributed knowledge</i>	p. 275
Niek Wijngaards, Benno Overeinder, Maarten van Steen & Frances Brazier	<i>Supporting Internet-Scale Multi-Agent Systems</i>	p. 501
J. Zutt, L.D. Aronson, R.P.J. van der Krogt, N. Roos & C. Witteveen	<i>Multi-Agent Transport Planning</i>	p. 387

12.20 – 13.20 **Lunch**

13.20 – 14.40 Paper presentations: Session 2

Session 2A: Machine Learning and Data Mining I

(Van Croy)

Chair: *Wim Wiegerinck*

Jeroen Eggermont	<i>Evolving Fuzzy Decision Trees for Data Classification</i>	p. 417
Jan C. Bioch & Viara Popova	<i>Monotone Decision Trees and Noisy Data</i>	p. 19
Nico Jacobs & Hendrik Blockeel	<i>Sequence Prediction with Mixed Order Markov Chains</i>	p. 147
Kurt Driessens & Saso Dzeroski	<i>Integrating Experimentation and Guidance in Relational Reinforcement Learning</i>	p. 415

Session 2B: Logic

(Van Hamaele)

Chair: *Maurice Bruynooghe*

Dagmar Proviijn	<i>How to obtain elegant Fitch-style proofs from Goal directed ones</i>	p. 243
Marc Denecker, Nikolay Pelov & Maurice Bruynooghe	<i>Ultimate Well-founded and Stable Semantics for Logic Programs with Aggregates</i>	p. 413
Henry Prakken	<i>An exercise in formalising teleological case-based reasoning</i>	p. 473
Alexander Serebrenik & Danny De Schreye	<i>Inference of termination conditions for numerical loops</i>	p. 479

Session 2C: Intelligent User Interfaces

(Lemaire)

Chair: *Catholijn Jonker*

Eveliëne de Vos, Cilia Witteman & Robbert-Jan Beun	<i>Embodied Conversational Agents in Human-Computer Interaction</i>	p. 339
P.P.A. Storms, E.J. Herweijer & C.J. van Aart	<i>Practical Design Guidelines for Embodied Conversational Agents</i>	p. 307
Vojtech Knezu & Leon J.M.Rothkrantz	<i>A System for Automated Bookmark Management</i>	p. 179
R.M. Schaar, L.J.M. Rothkrantz, M. Lassche & M.V. Jonkers	<i>Agent-Based Intelligent Personal Unified Messaging</i>	p. 283

14.40 – 15.30 Short presentations of demos and posters

Session I

(Van Croy)

Chair: Marc Denecker

Demos

Carlos Areces & Juan Heguiabehere	<i>HyLoRes: A hybrid logic prover based on direct resolution</i>	p. 511
Frances Brazier, David Mobach, Benno Overeinder, Etienne Posthumus, Sander van Splunter, Marten van Steen & Niek Wijngaards	<i>AgentScape Demonstration</i>	p. 513
M. Dastani, F. de Boer, F. Dignum, W. van der Hoek, M. Kroese & J. J. Meyer	<i>Implementing Cognitive Agents in 3APL</i>	p. 515
N.W.M. Schoot & W. Jansweijer	<i>Improving the quality of information in document based communications using a reusable multi-agent system</i>	p. 519

Posters

Christiaan Fluit, Marta Sabou & Frank van Harmelen	<i>Ontology-based Information Visualisation</i>	p. 419
Mar Marcos, Hugo Roomans, Annette ten Teije & Frank van Harmelen	<i>Improving medical protocols through formalisation: a case study</i>	p. 463
Bert Van Nuffelen	<i>Reasoning with preferences in ID-Logic</i>	p. 323
David Gilis & Marc Denecker	<i>Compositionality Results for Stratified Nonmonotone Operators</i>	p. 421
Alexander Serebrenik & Danny De Schreye	<i>On termination of meta-programs</i>	p. 481
Mehdi Dastani & Leon van der Torre	<i>An Extension of BDI_{CTL} with Functional Dependencies and Components</i>	p. 67
Mehdi Dastani, Virginia Dignum & Frank Dignum	<i>Organizations and Normative Agents</i>	p. 411
R.P.J. van der Krogt, L.D. Aronson, N. Roos, C. Witteveen & J. Zutt	<i>Tactical Planning using Heuristics</i>	p. 187
Stefan Kleijkers, Floris Wiesman & Nico Roos	<i>A Mobile Multi-Agent System for Distributed Computing</i>	p. 453
Veska Noncheva & Nuno Cavalhiero Marques	<i>Agent's Belief: A Stochastic Approach</i>	p. 227
M. Apistola, F.M.T. Brazier, O. Kubbe, A. Oskamp, M.H.M. Schellekens & M.B. Voulon	<i>Legal aspects of agent technology</i>	p. 399
Frances Brazier, Benno Overeinder, Maarten van Steen & Niek Wijngaards	<i>Generative Migration of Agents</i>	p. 409
Arjen Vollebregt, Henk Hesselink, Daan Hannessen & Jelle Beetstra	<i>Modelling Crew Assistants with Multi-Agent Systems in Aircraft</i>	p. 495
Kurt Schelfhout & Tom Holvoet	<i>"To do or not to do": The Individual's Model for Emergent Task Allocation</i>	p. 477

C.M. Jonker, A.P.G. de Kock, J. Meijer & B.J. Vermeulen	<i>Deliberate Evolution Agents: Comparing Reproduction Strategies</i>	p. 433
Catholijn M. Jonker & Jan Treur	<i>A Dynamic Perspective on an Agent's Mental States and Interaction with its Environment</i>	p. 439
C.M. Jonker, J.L. Snoep, J. Treur, H.V. Westerhoff & Wouter C.A. Wijngaards	<i>BDI-Modelling of Intracellular Dynamics</i>	p. 435
Catholijn M. Jonker, Jan Treur & Wouter C.A. Wijngaards	<i>Temporal Languages for Simulation and Analysis of the Dynamics Within an Organisation</i>	p. 447
Catholijn M. Jonker & Jan Treur	<i>Analysis of the Dynamics of Reasoning Using Multiple Representations</i>	p. 441
Catholijn M. Jonker, Jan Treur & Wouter C.A. Wijngaards	<i>Requirements Specification and Automated Evaluation of Dynamic Properties of a Component-Based Design</i>	p. 445

Session II

(Lemaire)

Chair: *Nikolay Pelov*

Posters

Herman ter Horst, Mark van Doorn, Natasha Kravtsova, Warner ten Kate & Daniel Siahaan	<i>Context-aware Music Selection Using Knowledge on the Semantic Web</i>	p. 131
Raymond Kosala, Jan Van den Bussche, Maurice Bruynooghe & Hendrik Blockeel	<i>Information Extraction in Structured Documents using Tree Automata Induction</i>	p. 455
Jaap Kamps & Maarten Marx	<i>Words with Attitude</i>	p. 449
Wojciech Jamroga	<i>Multiple Models of Reality and How to Use Them</i>	p. 155
Paul E.M. Huygen	<i>Use of Bayesian Belief Networks in legal reasoning</i>	p. 429
M.M. Drugan, D. Thierens & L.C. van der Gaag	<i>MDL-based Feature Selection for Bayesian Network Classifiers</i>	p. 99
Tom Heskes & Onno Zoeter	<i>Expectation propagation for approximate inference in dynamic Bayesian networks</i>	p. 425
Alexander Ypma & Tom Heskes	<i>Clustering web surfers with mixtures of hidden Markov models</i>	p. 505
H.H.L.M. Donkers, J.W.H.M. Uiterwijk & H.J. van den Herik	<i>Learning Opponent-Type Probabilities for PrOM Search</i>	p. 91
Jan van den Berg, Uzay Kaymak & Willem-Max van den Bergh	<i>Fuzzy Classification by Using Probability-Based Rule Weighting</i>	p. 401
Siegfried Nijssen & Joost Kok	<i>Tree Sets: Towards a Set-Oriented View on Multi-Relational Data Mining</i>	p. 219
Peter van der Putten, Martijn Ramaekers, Marten den Uyl & Joost Kok	<i>A Process Model for a Data Fusion Factory</i>	p. 251

Jan Struyf, Jan Ramon & Hendrik Blockeel	<i>Compact representation of knowledge bases in ILP</i>	p. 483
Edwin D. de Jong & Tim Oates	<i>A Coevolutionary Approach to Representation Development</i>	p. 431
E.M. Oost, S.H.G. ten Hagen & F.H. Schulze	<i>Extracting multivariate power functions from complex data sets</i>	p. 235
M.H. ter Brugge, J.A.G. Nijhuis & L. Spaanenburg	<i>Morphological Template Decomposition for DT-CNN</i>	p. 35
Berend Jan van der Zwaag, Kees Slump & Lambert Spaanenburg	<i>Process Identification Through Modular Neural Networks and Rule Extraction</i>	p. 507
T. Lenaerts, A. Defaweux, P. van Remortel & B. Manderick	<i>Multi-level Selection in a Simple Evolutionary Model</i>	p. 203
Piet van Remortel, Tom Lenaerts & Bernard Manderick	<i>Testing the Overall Functional Robustness of 2D CA Phenotypes for Development</i>	p. 259
Demos		
Mark Mastop & Michiel Lampe	<i>Knowledge Framework</i>	p. 517
Silvie Spreeuwenberg & Rik Gerrits	<i>VALENS verification component</i>	p. 521
Wim van Stokkum	<i>Knowledge Intensive Content Model Management Within Integrated Back offices</i>	p. 523
Evert van de Vrie	<i>LOK: Implementation of a platform for distributed development and use of educational tasks</i>	p. 525

15.30 – 15.50 Coffee Break

15.50 – 16.50 Invited talk:
Michael Wooldridge, University of Liverpool
“Time, Knowledge, and Cooperation: Alternating-time Temporal Epistemic Logic and its Applications”

16.50 – 18.05 Demo and Poster Sessions

18.30 – 20.00 Reception at Town Hall

20.15 – 23.00 Conference dinner

Tuesday, October 22

08.40 – 09.40 **Invited talk:**
Hector Levesque, University of Toronto
“Cognitive Robotics at the University of Toronto”

09.40 – 10.20 **Paper presentations: Session 3**

Session 3A: Planning **(Van Croy)**

Chair: *Han La Poutré*

Jeroen Valk, Cees Witteveen *Multi-Agent Coordination in Planning* p. 489

Hans Tonino, André Bos, Mathijs de Weerdt & Cees Witteveen *Plan Coordination by Revision in Collective Agent Based Systems* p. 487

Session 3B: Game Playing **(Van Hamaele)**

Chair: *Joost Kok*

Erik van der Werf, Jos Uiterwijk & Jaap van den Herik *Solving Ponnuki-Go on Small Boards* p. 347

Mark H.M. Winands, Levente Kocsis, Jos W.H.M. Uiterwijk & H. Jaap van den Herik *Learning in Lines of Action* p. 371

Session 3C: Language II **(Lemaire)**

Chair: *Antal van den Bosch*

Gabriel G. Infante-Lopez, Maarten de Rijke & Khalil Sima'an *A General Probabilistic Model for Dependency Parsing* p. 139

Yiu-Fai Cheung, Dietrich Klakow, Georg Bauer & Leon Rothkrantz *Broadcast Information Topic Segmentation - BITS -* p. 51

10.20 – 10.40 **Coffee Break**

10.40 – 12.20 Paper presentations: Session 4

Session 4A: Knowledge based Systems & Ontologies (Van Croy)

Chair: *Guus Schreiber*

Jan van den Berg, Uzay Kaymak & Willem-Max van den Bergh	<i>Probabilistic Reasoning in Fuzzy Rule-Based Systems</i>	p. 11
Christof Monz & Maarten de Rijke	<i>Knowledge-Intensive Question Answering</i>	p. 467
Henk-Jan Lebbink, Cilia L.M. Witteman & John-Jules Ch. Meyer	<i>Ontology-Based Knowledge Acquisition for Knowledge Systems</i>	p. 195
Ian Horrocks, Peter F. Patel-Schneider & Frank van Harmelen	<i>Reviewing the Design of DAML+OIL: an Ontology Language for the Semantic Web</i>	p. 427
Heiner Stuckenschmidt	<i>Approximate Information Filtering with Multiple Classification Hierarchies</i>	p. 485

Session 4B: Applications (Van Hamaele)

Chair: *Ida Sprinkhuizen-Kuyper*

Pim van Leeuwen, Henk Hesselink & Jos Rohling	<i>Scheduling Aircraft Using Constraint Satisfaction</i>	p. 461
Laura Maruster, Ton Weijters, Geerhard de Vries, Antal van den Bosch & Walter Daelemans	<i>Logistic-Based Patient Grouping for Multi-disciplinary Treatment</i>	p. 465
Frans Voorbraak	<i>Uncertainty in AI and Bioinformatics</i>	p. 497
Radboud Winkels, Alexander Boer & Rinke Hoekstra	<i>Lessons Learned in Legal Information Serving</i>	p. 503
Chris van Aart, Kris Van Marcke, Ruurd Pels & Jan Smulders	<i>International Insurance Traffic with Software Agents</i>	p. 397

Session 4C: Machine Learning and Data Mining II (Lemaire)

Chair: *Jef Wijsen*

Davy Janssens, Tom Brijs, Koen Vanhoof & Geert Wets	<i>Evaluating the performance of Cost-based Discretization versus Entropy- and Error-based Discretization</i>	p. 163
Danielle Sent & Linda C. van der Gaag	<i>Test Selection: the Gini Index and the Shannon Entropy Behave Differently</i>	p. 291
Birgit Hay, Geert Wets & Koen Vanhoof	<i>Web Usage Mining by means of Multidimensional Sequence Alignment Methods</i>	p. 123
Jeannette M. de Graaf, Walter A. Kusters, Wim Pijls & Viara Popova	<i>A Theoretical and Practical Comparison of Depth First and FP-growth Implementations of Apriori</i>	p. 115
J.J. Verbeek, N. Vlassis & B. Kröse	<i>Coordinating Principal Component Analyzers</i>	p. 493

12.20 – 13.10 Lunch

13.10 – 13.40 BNVKI meeting

13.40 – 15.20 Paper presentations: Session 5

Session 5A: Bayesian Reasoning II (Van Croy)

Chair: *Marco Wiering*

Peter Lucas	<i>Restricted Bayesian Network Structure Learning</i>	p. 211
Michiel van Wezel & Walter Kusters	<i>Numerical Integration by Cubature Formulae in Bayesian Neural Networks</i>	p. 355
Wojciech Zajdel & Ben Kröse	<i>Bayesian network for multiple hypothesis tracking</i>	p. 379
Hilbert J. Kappen & Wim Wiegerinck	<i>Novel iteration schemes for the Cluster Variation Method</i>	p. 451
Peter Antal, Geert Fannes, Yves Moreau & Bart De Moor	<i>Using Literature and Data to Annotate and Learn Bayesian Networks</i>	p. 3

Session 5B: Evolutionary Computing I (Van Hamaele)

Chair: *Bernard Manderick*

Michel van Dartel, Eric Postma & Jaap van den Herik	<i>Universal Properties of Adaptive Behaviour</i>	p. 59
Peter A.N. Bosman & Dirk Thierens	<i>Multi-objective optimization with diversity preserving mixture-based iterated density estimation evolutionary algorithms</i>	p. 407
Siegfried Nijssen & Thomas Bäck	<i>An Analysis of the Behaviour of Simplified Evolutionary Algorithms on Trap Functions</i>	p. 469
W. B. Langdon	<i>Size of Random Programs to ensure Uniformity</i>	p. 459
Jeroen Eggermont & Tom Lenaerts	<i>Dynamic Optimization using Evolutionary Algorithms with a Case-based Memory</i>	p. 107

Session 5C: Agents I (Lemaire)

Chair: *Cees Witteveen*

Martin Caminada	<i>Agent Dialogues using Hang Yourself Arguments</i>	p. 43
Jan Broersen, Mehdi Dastani & Leendert van der Torre	<i>Relating functionality descriptions to proof rules of input/output logic</i>	p. 27
Katja Verbeeck, Ann Nowé & Johan Parent	<i>Social Agents Playing a Periodical Policy</i>	p. 491
Steve Kremer & Jean-François Raskin	<i>Game Analysis of Abuse-free Contract Signing</i>	p. 457
Catholijn M. Jonker, Jacky L. Snoep, Jan Treur, Hans V. Westerhoff & Wouter C.A. Wijngaards	<i>Putting Intentions into Cell Biochemistry: An Artificial Intelligence Perspective</i>	p. 437

15.20 – 15.40 Coffee Break

15.40 – 16.40 Paper presentations: Session 6

Session 6A: Evolutionary Computing II (Van Croy)

Chair: *Bill Langdon*

Karl Tuyls , Tom Lenaerts, Katja Verbeeck, Sam Maes & Bernard Manderick	<i>Towards a Relation Between Learning Agents and Evolutionary Dynamics</i>	p. 315
Pieter Spronck, Ida Sprinkhuizen-Kuyper & Eric Postma	<i>Improving Opponent Intelligence by Machine Learning</i>	p. 299
Robert E. Keller, Walter A. Kusters, Martijn van der Vaart & Martijn D.J. Witsenburg	<i>Genetic Programming Produces Strategies for Agents in a Dynamic Environment</i>	p. 171

Session 6B: Qualitative Reasoning (Van Hamaele)

Chair: *Jaap van den Herik*

Paulo Salles, Bert Bredeweg, Simone Araujo & Walter Neto	<i>Qualitative Models of Interactions Between Two Populations</i>	p. 475
Niels Peek	<i>Representation of decision-theoretic plans as sets of symbolic decision rules</i>	p. 471
Silja Renooij, Simon Parsons & Pauline Pardieck	<i>Using Kappas as Indicators of Strength in QPNs</i>	p. 267

Session 6C: Agents II (Lemaire)

Chair: *Floris Wiesman*

Sander Bohte, Enrico Gerding & Han La Poutré	<i>Competitive Market-based Allocation of Consumer Attention Space</i>	p. 403
Catholijn M. Jonker, Jan Treur & Wieke de Vries	<i>Temporal Analysis of the Dynamics of Beliefs, Desires, and Intentions</i>	p. 443
Mehdi Dastani & Leendert van der Torre	<i>What is a Normative Goal?</i>	p. 67

16.40 – 17.00 Awards ceremony & closing
BNAIC prize for best original paper
SKBS prize for best demo/application