

The 21st International Florida Artificial Intelligence Research Society Conference

Program of Events



**Sonesta Bayfront Hotel
Coconut Grove, Florida
May 15-17, 2008**



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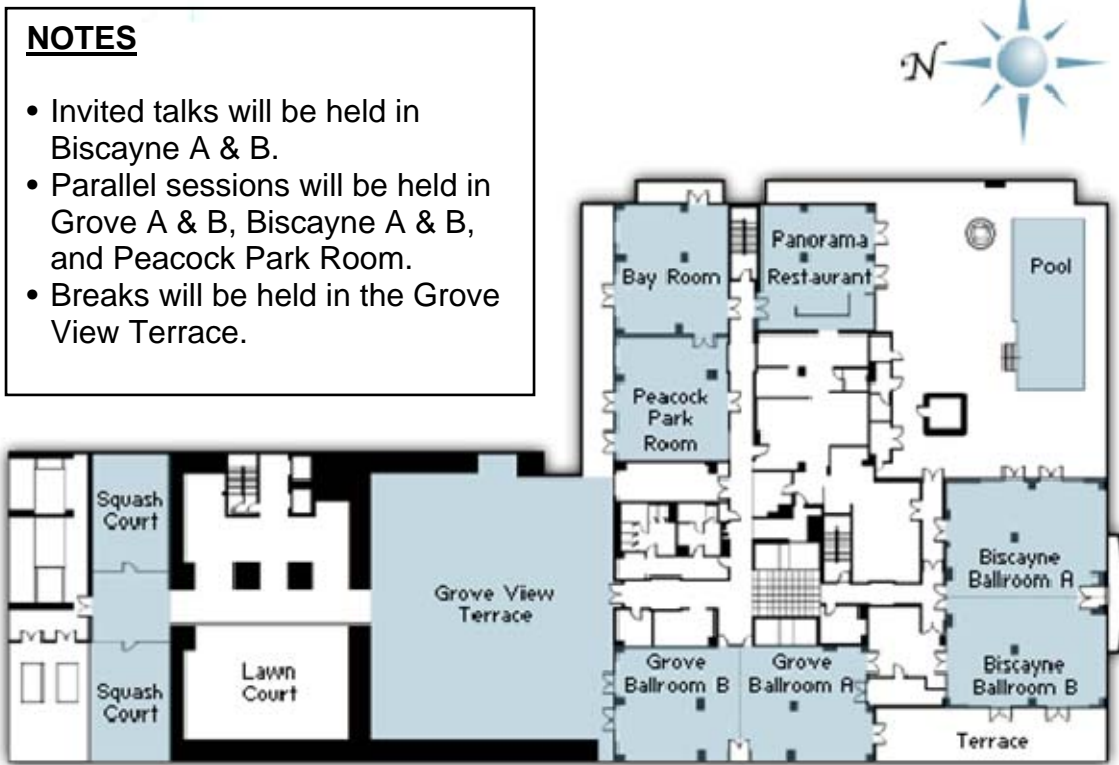
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Map of Sonesta (8th floor)



The 21st International Florida Artificial Intelligence Research Society Conference

FLAIRS-21 Program of Events



Sonesta Bayfront Hotel
Coconut Grove, Florida
May 15-17, 2008

Welcome from the Conference Chairs

Welcome to the 21st International FLAIRS conference and to the Grove! This program is the product of collaboration and hard work on the part of many people, with whom we have been privileged to work. We are very grateful for the efforts of the special track coordinator, Hans Guesgen, the special track organizers, and all of our general conference and special track program committee members and reviewers. We express our gratitude to the authors who submitted papers to FLAIRS, of both accepted and non-accepted papers. In addition to the diverse assortment of papers being delivered, we have an excellent set of keynote speakers, including Candace Sidner, Alfred Kobsa, and Bruce Buchanan. Several of the special tracks also feature invited talks from distinguished researchers in the track areas. Special thanks go to Jeanni Gerber for administering the conference, the Florida Artificial International Research Society for maintaining the conference series, AAAI for its cooperation with the conference, Mike Hamilton for organizing the publication of the proceedings, EasyChair for hosting the review process, and to the students and staff that have helped prepare and run the program.

We have been looking forward to the conference and to meeting in Coconut Grove. We hope you find the program exciting, the social events entertaining, and that you find time to enjoy and explore Coconut Grove!

– *Geoff Sutcliffe (General Chair), H. Chad Lane & David Wilson (Program Co-Chairs)*

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Conference Invited Speaker Abstracts

Biscayne Ballroom

Thursday, 15th May, 9:00am-10:00am (Session 1)
Embodied Intelligent Agents as Servants, Advisors, Companions and Jesters
Candace Sidner
BAE Systems Advanced Information Technologies, USA

In the 1970s, AI leaders believed we would soon see all kinds of intelligent agents, agents that would easily beat grand masters at chess, speak natural language fluently and continually learn new things. These problems turned out to be much harder than they thought. Subfields formed within AI to pursue specialized research in robotics, machine vision, natural language and so on. Speech research was joined with natural language to work towards spoken language. Happily, in past 25 years, these subfields have made significant progress, to the point that there are now commercially available robots of all shapes and sizes, speech recognition engines, and vision systems that can actually find and sometimes correctly identify faces, gaze, arms, and simple objects.

AI researchers are now putting all these pieces together, either as human-robot interaction (HRI) or, without the mechanical hardware, as on-screen agents (so called embodied conversational agents or ECAs). Building the first generation of such agents has required solving many engineering challenges, and many problems remain. In this talk, I'll give some examples of intriguing embodied intelligent agents, both the physical and on-screen types. However, to be a real success, not only must the engineering get simpler, but there must be some reason for people to want to interact with them. In this talk, I will also look at what some of these reasons might be, drawing on my own work as well as others in HRI and ECAs.

Friday, 16th May, 9:00am-10:00am (Session 5)
Using AI to Model Creativity
Bruce Buchanan
University of Pittsburgh, USA

The creative process, for centuries, has been infused with an element of magic, an unexplainability that is supposed to elevate some human minds above the rest - and certainly above mere machines. But creative ideas are, first and foremost, ideas. A fundamental axiom of AI is that the production of ideas can be explained as symbol manipulation and can be reproduced with a symbol manipulation machine. Thus we should be prepared to offer a model of the computational mechanisms by which creative ideas are produced. Some work in psychology and some AI programs suggest mechanisms we will explore as candidates for a model of creativity.

Saturday, 17th May, 9:00am-10:00am (Session 10)
Privacy-Enhanced Personalization
Alfred Kobsa
University of California, Irvine, USA

Personalized interaction with computer systems can be at odds with privacy since it necessitates the collection of considerable amounts of personal data. Numerous consumer surveys revealed that computer users are very concerned about their privacy online. The collection of personal data is also subject to legal regulations in many countries and states. This talk presents work in the area of Privacy- Enhanced Personalization that aims at reconciling personalization with privacy through suitable human-computer interaction strategies and privacy-enhancing technologies.

Special Track Invited Talk Abstracts

Thursday, 15th May, 11:00am – 11:50am, Grove A (Session 2c: Case-Based Reasoning)

Provenance and Case-Based Reasoning

David Leake, University of Indiana, USA

Case-based reasoning is inextricably bound to memory: The storage and reuse of cases is at the heart of the CBR process. However, CBR research seldom exploits another aspect of remembering: remembering the provenance of derived information. This talk examines the value of tracking case provenance within CBR, for tasks such as guiding case-base maintenance, and also highlights opportunities for using case-based methods to leverage burgeoning activity in provenance tracking in areas such as e-science. Joint work with Scott Dial, Joseph Morwick, and Matthew Whitehead.

Thursday, 15th May, 3:55pm – 4:45pm, Grove A (Session 4c: Logics, General Ontologies, Cat. & Sem. Ann.)

Towards a Bridge between Cognitive Linguistics and Formal Ontology

Jean-Pierre Desclés, Université Paris-Sorbonne, France

To build an ontology of a domain, different entities and relations must be often identified inside linguistic segments (nominal phrases, clauses, sentences, paragraphs, titles) by means of syntactic and semantic annotations. The Cognitive and Applicative Grammar (CAG) is a logical and linguistic model, that opens a way to bring a sound bridge between Formal Ontology, Logics, Cognitive Linguistics and Natural Language Processing. CAG is polystratal with three levels of applicative representations: (i) the first level contains the syntactical and morphological configurations of sentences and texts; Extended Categorical Grammars are formal devices used to annotate sentences in a text; (ii) the second level expresses the applicative decompositions into operators and operands with semantic interpretations of grammatical operators (abstract cases: Agent, Localizer, Instrument, Experiencer, tenses and aspects, modalities, voices); (iii) at the third level, the meanings of lexical operators are described in terms of "change", "movement", "control of change or movement by an agent", "intentional teleonomy whose aim is fixed", "locating an object inside a locus", "topological determinations of loci (temporal, spatial, abstract loci)" Each unit (a *dejinendum*) of a level is decomposed into a complex of more elementary units (its *definiens*) of an upper level; the relation between *definiendum* and *definiens* is expressed by complex formal operators, called "combinators", using the Curry's Combinatory Logic (a logic without bound variables) framework.

Friday, 16th May, 10:30am-11:20am, Biscayne A (Session 6a: Intelligent Tutoring Systems)

Some Thoughts on Using Computers to Teach Argumentation

Kevin Ashley, University of Pittsburgh, USA

For some time, a small group of researchers has focused on using computer technology to teach humans argumentation skills, either in general or in application areas such as law, ethics, and the sciences. This research has yielded intellectual products including computational models of argumentation, techniques for integrating argumentation into human computer interfaces via argument diagrams or by engaging students in argument-making, techniques for assessing how well students learn argumentation skills, and many interesting questions. This talk surveys selected argumentation tutoring research and addresses questions about the reasons for using computers to teach argumentation, the argument features or patterns that should be represented, the utility of argumentation diagrams as teaching aids or as diagnostic tools, and how intelligent tutoring systems can adapt to teaching argumentation in ill-defined domains/tasks where there often is no one right answer. Answers to these questions have ramifications not only for the teaching of argumentation with computers but for the future direction and impact of AI research on argumentation.

Friday, 16th May, 3:30pm – 4:20pm, Grove B (Session 8d: Games & Entertainment)

AI In Digital Games: Past, Present, & Future

Florian Stadlbauer, DECK13 Interactive GmbH, German

Since the first days of digital games, developers concentrate on realistic graphical and technical effects to increase the player's awareness. Ever since games become more and more complex until today's next generation titles, which immerse the audience into a movie-like three dimensional game world, where computer controlled Characters behave almost like real humans. Development budgets for such titles easily exceed 10 to 15 million U.S. dollars. Large amount of these budgets are spent for innovative technologies behind the graphical effects. These efforts are intended to provide the player a realistic behaving and vivid world. Therefore, the development and implementation of several AI approaches in digital games is one of the key technologies. This talk will focus the phrase "game AI" which covers a collection of programming and design approaches which have to be adjusted for the game developers needs. Therefore the beginnings and the recent approaches regarding game AI will be depicted as a first step. Furthermore the talk will highlight a possible future fundamental change of game AI. Last but not least some possible links between game development and academia research efforts in the field of AI will be highlighted.

Special Track Panel Descriptions

Thursday, 15th May, 3:00pm – 3:25pm, Grove A (Session 3c: Case-Based Reasoning)

Case-Based Reasoning Research

Moderators: *Ian Watson & Santiago Ontañón*

Panelists: *David Aha, Kevin Ashley, & David Leake*

Each panelist will address themselves to a SWOT (Strengths, Weaknesses, Opportunities, & Threats) analysis of Case-Based Reasoning research, after which questions will be taken from the audience.

Friday, 16th May, 5:25pm – 6:15pm, Grove A (Session 9c: Logics, General Ontologies, Cat. & Sem. Ann.)

Logic, Ontologies, Cognitive Linguistics and Natural Language Processing

Moderator: *Anca Pascu*

Panelists: *Jean-Pierre Desclés, Ismail Biskri, Vera Goodacre, & Florence Le Priol*

This panelists will discuss problems concerning:

- Logic and categorization(What type of logics for categorization? What type of logic to build ontologies?)
- Categorical grammars as categorization tools
- Tools to build formal ontologies versus tools to build domain ontologies
- Semantic annotation: theoretical linguistic point of view and NLP point of view (Why annotation has to be semantic?)
- Statistical models versus linguistics based models.

Friday, 16th May, 5:50pm-6:15pm, Grove B (Session 9d: Games & Entertainment)

An Open Discussion on Interests, Needs, and Research in Interactive AI

Moderators: *G. Michael Youngblood & Klaus Jantke*

Panelists: *You*

Games have always been a part of the AI community, but today's breed of highly-interactive, real-time games and entertainment-based applications pose new challenges for the community. We must think beyond the turn-based AI of yesterday, incorporate knowledge artifacts into interactive domains, utilize more anytime processing techniques to improve response (even if sub-optimal), and explore meaningful ways to evaluate interactive AI performance. Furthermore, these needs are not just limited to games and entertainment, but to all interactive applications. Are these challenges different in focus from Traditional AI, and are we seeing the rise of a new area in Interactive AI? This session is meant to be an open discussion for everyone where we can discuss this trend, our common interests, needs (research opportunities), and the work in this area being conducted by members of the FLAIRS community.

Meeting Descriptions

Thursday, 15th May, 2:35pm – 3:00pm, Grove A (Session 3c: Case-Based Reasoning)

Case-Based Reasoning Community Meeting

Moderators: *Ian Watson & Santiago Ontañón*

The CBR community session is a time for people with an interest in CBR to find out about forthcoming meetings and events of relevance to CBR and other opportunities for CBR researchers.

Saturday, 17th May, 3:30pm – 4:30pm, Peacock Park Room

FLAIRS BUSINESS MEETING

Douglas Dankel & Geoff Sutcliffe

The FLAIRS business meeting is a chance for FLAIRS attendees to discuss this year's conference as well as plans for future years. The organizers of FLAIRS-22, which will be held in May of 2009 on Sanibel Island, will be introduced.

Bios of Conference Invited Speakers

Bruce Buchanan, University of Pittsburgh, USA

Bruce Buchanan is University Professor of Computer Science Emeritus, and former Professor of Philosophy, Medicine, and Intelligent Systems at the University of Pittsburgh. He is a member of the National Academy of Science Institute of Medicine and has also served as President and Secretary-Treasurer of the AAAI. His main research interests are in machine learning, knowledge-based systems, medical expert systems, and computational biology, and is generally interested in applications of machine learning and artificial intelligence to problems in biology or medicine. His recent research includes: AI approaches to machine learning and discovery, applications of symbolic learning to problems in biology and medicine, and case-based reasoning with application to prediction of protein secondary structure.

Alfred Kobsa, University of California, Irvine, USA

Alfred Kobsa is a Professor in the Donald Bren School of Information and Computer Sciences of the University of California, Irvine. Before he was a Director of the Institute for Applied Information Technology (FIT) at the German National Research Center for Information Technology (GMD), and a Professor of Computer Science at the University of Essen, Germany. Dr Kobsa's research lies in the areas of user modeling and personalized systems (with applications in the areas of information environments, expert finders, and user interfaces for disabled and elderly people), privacy, and in information visualization. He is the editor of *User Modeling and User-Adapted Interaction*, editorial board member of *World-Wide Web*, *Universal Access in the Information Society* and *Information Technology and Decision Making*, and was the founding president of *User Modeling Inc.* Dr. Kobsa edited several books and authored numerous publications in the areas of user-adaptive systems, human-computer interaction and knowledge representation. He also co-founded a national workshop series and an international conference series in these areas.

Candace Sidner, BAE Systems Advanced Information Technologies, USA

Candace Sidner is a division scientist at BAE Systems Advanced Information Technologies. She was previously a senior research scientist at Mitsubishi Electric Research Laboratories. She earned her Ph.D. at the MIT Artificial Intelligence Laboratory. Sidner is a fellow and past councilor of AAAI, as well as having served as president of the Association for Computational Linguistics, chair of the 2001 and program cochair of the 2006 International Conference on Intelligent User Interfaces, and cochair of the 2004 SIGdial Workshop on Discourse and Dialogue, and general chair of the 2007 NAACL Human Language Technology conference.

Bios of Special Track Invited Speakers

David Leake, Indiana University, USA

David Leake is a Professor of Computer Science and the Associate Dean for Graduate Studies of the School of Informatics at Indiana University, as well as a member of the faculty of Indiana University's Cognitive Science and Human-Computer Interaction programs. He received his Ph.D. in Computer Science from Yale University in 1990. His research interests include case-based reasoning, context, explanation, human-centered computing, intelligent user interfaces, introspective reasoning, and knowledge management.

Jean-Pierre Desclés, Université Paris-Sorbonne, France

Jean-Pierre Desclés is professor in Computer Sciences applied to Human Sciences at Paris-Sorbonne University and head of the LaLIC laboratory (“Languages, Logics, Informatics and Cognition”). He is also a member of the International Academic of Philosophy of Sciences and has published several books and articles on relations between Logics, Computer Sciences and Semantic Analysis.

Kevin Ashley, University of Pittsburgh, USA

Kevin Ashley holds interdisciplinary appointments as a faculty member of the Graduate Program in Intelligent Systems at the University of Pittsburgh, a Senior Scientist at the Learning Research and Development Center, a Professor of Law, and Adjunct Professor of Computer Science. His goals are to contribute to Artificial Intelligence (AI) research on case-based and analogical reasoning, argumentation and explanation and to develop instructional systems for students and professionals in case-based domains such as law and ethics. He received a B.A. in philosophy (magna cum laude) from Princeton University in 1973, J.D. (cum laude) from Harvard Law School in 1976, and Ph.D. in computer science in 1988 from the University of Massachusetts where he held an IBM Graduate Research Fellowship. He is a Fellow of the American Association for Artificial Intelligence, and a past President of the International Association of Artificial Intelligence and Law.

Florian Stadlbauer, DECK13 Interactive GmbH, German

Florian Stadlbauer is founder and the Executive Director of the DECK13 Interactive GmbH. DECK13 is one of the leading German game studio and developer of the titles “Ankh” and “Jack Keane” which received a tremendous amount of peer and critical acclaim, including several awards from German Video Game Developer Awards 2005 and 2007. Dr. Stadlbauer studied business administration in Frankfurt and Munich and did his PhD at the Institute for Information Systems and New Media in Munich as well as at York Universities’ Schulich School of Business in Toronto.

Schedule: Thursday May 15th

Thu 15th	Lobby	Biscayne A	Biscayne B	Grove A	Grove B
8:00am	Registration				Poster preparation & setup
9:00am		1: Invited Talk: Embodied Intelligent Agents as Servants, Advisors, Companions and Jesters - <i>Candace Sidner</i>			
10:00am		Break & Poster Session (Terrace & Grove B)			Poster Session
11:00am		2a: General Track: Foundations	2b: Artificial Intelligence Education	2c: Case-Based Reasoning	
12:15pm		Lunch (Terrace)			
1:45pm		3a: General Track: Machine Learning	3b: Design, Evaluation, & Refinement of Intelligent Systems	3c: Case-Based Reasoning	3d: Uncertain Reasoning
3:25pm		Break (Terrace and Ballrooms)			
3:55pm		4a: General Track: Machine Learning	4b: Design, Evaluation, & Refinement of Intelligent Systems	4c: Logics, Ontologies, +	4d: Uncertain Reasoning
6:00pm		Reception (Chart House) Best papers and poster awards			

Session 1: Invited Talk - Chair: H. Chad Lane (Biscayne A&B)

9:00am **Embodied Intelligent Agents as Servants, Advisors, Companions and Jesters**
Candace Sidner, BAE Systems Advanced Information Technologies, USA.

10:00am Poster Session & Break (Grove B, posters will remain up until 12:30)

General Track

A Causal Bayesian Network view of Reinforcement Learning

Charles Fox, Neil Girdhar, & Kevin Gurney

Fuzzy Clustering Paradigm and the Shape-Based Image Retrieval

Nan Xing, & Imran Shafiq Ahmad

Using Contexts to Supervise a Collaborative Process

Avelino Gonzalez, Setsuo Tsuruta, Yoshitaka Sakurai, Johann Nguyen, Kouhei Takada, & Uchida Ken

The Introspective Robot: Using Self-Prediction to Improve Robot Learning

James B. Marshall, Neil K. Makhija, & Zachary D. Rothman

Causal reasoning with contexts using dependent types

Richard Dapoigny & Patrick Barlatier

Toward a Generic Infrastructure to Adjust the Autonomy of Soar Agents

Scott Wallace & Matthew Henry

Resolving Data Heterogeneity issues in Open Distributed Communication Middleware

Omar Shafiq

Temporal Representation and Reasoning for the Semantic Web

Sebastian Hübner & Ubbo Visser

Data Mining

Combining Naive Bayes and Decision Tables

Mark Hall & Eibe Frank

Co-SOFT-Clustering: An Information Theoretic approach to obtain overlapping clusters from co-occurrence data

P. Swaminathan & Balaraman Ravindran

Applied Natural Language Processing

ARIDA: An Arabic Interlanguage Database and Its Applications: A Pilot Study

Anna Feldman, Ghazi Abuhakema, & Eileen Fitzpatrick

Adapting Decision Trees for Learning Selectional Restrictions

Sean Szumlanski & Fernando Gomez

A Hybrid Machine Translation System for Typologically Related Languages

Petr Homola & Vladislav Kubon

Multilingual Approach to e-Learning from a Monolingual Perspective

Vladislav Kubon & Miroslav Spousta

Thursday, 15th May, 10:00am – 11:00am

Poster Session & Break continued (Grove B)

Design, Evaluation, and Refinement of Intelligent Systems

Towards Verification of Storyboards

Rainer Knauf, Horst Duesel

ARD+ Design and Visualization Tool-Chain Prototype in Prolog

Grzegorz Nalepa & Igor Wojnicki

Games and Entertainment

Narratoria, an Authoring Suite for Digital Interactive Narrative

Martin van Velsen

Win, Lose, or Get Out the Way – Eliminating Unnecessary Evaluation in Game Search

Hsiu-Chin Lin & Colleen van Lent

AI Planning and Scheduling

Combining Heuristic Search with Hierarchical Task-Network Planning: A Preliminary Report

Ugur Kutur, Nathaniel Waisbrot, & Tolga Konik

Neptune: A Mixed-Initiative Environment for Planning and Scheduling

Pauline Berry, Blazej Bulka, Bert Peintner, Mark Roberts, & Neil Yorke-Smith

Feeder Setup Optimization in SMT Assembly

Jan Kelbel & Zdenek Hanzalek

Intelligent Tutoring Systems

A new emotional architecture for cognitive tutoring agents

Usef Faghihi, Daniel Dubois, Pierre Poirer, Mohamed Gaha, & Roger Nkambou

An intelligent tutoring architecture for simulation-based training

Dave Gomboc, Mark Core, H. Chad Lane, Ashish Karnavat, & Milton Rosenberg

Thursday, 15th May, 11:00am-12:15pm

Session 2a: General Conference - Foundations - Chair: Susan Haller (Biscayne A)

11:00am State Space Compression with Predictive Representations

Boularias Abdeslam, Masoumeh Izadi, & Brahim Chaib-Draa

11:25am Modelling Uniformity and Control during Knowledge Acquisition

Bernhard Heinemann

11:50am Small Models of Large Machines

Pramod Lakshmi Narasimha, Sanjeev Malalur, & Michael Manry

Session 2b: Artificial Intelligence Education - Chair: Todd Neller (Biscayne B)

11:00am Leveraging laptops: Resources for low-cost low-level AI

Zachary Dodds

11:25am From Foundations to Current Work in a One Quarter Course on Artificial Intelligence

Michael Wollowski

11:50am Concept of an Interactive Web Portal for Teaching Prolog

Grzegorz Nalepa & Igor Wojnicki

Session 2c: Case-based Reasoning - Chair: Ian Watson (Grove A)

11:00am **Invited talk: Provenance and Case-Based Reasoning**

David Leake, University of Indiana, USA

11:50am Learning Continuous Action Models in a Real-Time Strategy Environment

Matthew Molineaux, David Aha, & Philip Moore

Thursday, 15th May, 1:45pm-3:25pm

Session 3a: General Track - Machine Learning - Chair: Bruce Buchanan (Biscayne A)

1:45pm vacant

2:10pm Utilizing Content to Enhance a Usage-Based Method for Web Recommendations based on Q-Learning
Nima Taghipour

2:35pm The Utility of Knowledge Transfer with Noisy Data
Steven Gutstein, Olac Fuentes, & Eric Freudenthal

3:00pm Contrast Pattern Mining with Gap Constraints for Peptide Folding Prediction
Chinar C. Shah & Xingguan Zhu

Session 3b: Design, Evaluation, and Refinement of Intelligent Systems - Chair: Rainer Knauf (Biscayne B)

1:45pm Granular Logic with Variables for Implementation of Extended Tabular Trees
Antoni Ligeza & Grzegorz Nalepa

2:10pm Declarative Evaluation of Rule-Based Systems
Dietmar Seipel & Joachim Baumeister

2:35pm Alignment of Heterogeneous Ontologies: A Practical Approach to Testing for Similarities and Discrepancies
Neli Zlatareva & Maria Nisheva

3:00pm Visualization Techniques for the Evaluation of Knowledge Systems
Joachim Baumeister, Martina Menge, & Frank Puppe

Session 3c: Case-based Reasoning - Chair: Santi Ontañón (Grove A)

1:45pm Reinforcement of Local Pattern Cases for Playing Tetris
Houcine Romdhane & Luc Lamontagne

2:10pm A Case-based Reasoning Approach to Imitating RoboCup Players
Michael Floyd, Babak Esfandiari, & Kevin Lam

2:35pm **CBR Community Meeting**
Ian Watson & Santi Ontañón

3:00pm **Panel: Case-Based Reasoning Research**
Ian Watson, Santi Ontañón, David Aha, Kevin Ashley, & David Leake

Session 3d: Uncertain Reasoning - Chair: Yang Xiang (Grove B)

1:45pm Parallel Rollout for Online Solution of Dec-POMDPs
Camille Besse & Brahim Chaib-draa

2:10pm Planning for Welfare to Work
Liangrong Yi, Raphael Finkel, & Judy Goldsmith

2:35pm Stability of Coalitions in Belief-based Non-transferable Utility Games
Chi-Kong Chan & Ho-fung Leung

3:00pm Belief Update Using Graphs
Konstantinos Georgatos

Thursday, 15th May, 3:55pm-5:35pm

Session 4a: General Track - Machine Learning - Chair: Ingrid Russell (Biscayne A)

3:55pm Learning in the Lexical-Grammatical Interface

Tom Armstrong & Tim Oates

4:20pm vacant

4:45pm Genetic Approach for Optimizing Ensembles of Classifiers

Francisco Javier Ordoñez, Agapito Ledezma, & Araceli Sanchis

5:10pm A Backward Adjusting Strategy and Optimization of the C4.5 Parameters to Improve C4.5's Performance

Jason Beck, Maria Garcia, Mingyu Zhong, & Michael Georopoulos

Session 4b: Design, Evaluation, and Refinement of Intelligent Systems - Chair: Neli Zlatareva (Biscayne B)

3:55pm A Priori Evaluation & Refinement of Curricula by Data Mining over Storyboards

Rainer Knauf, Ronald Boeck, Yoshitaka Sakurai, & Setsuo Tsuruta

4:20pm Towards Formalization of ARD+ Conceptual Design and Refinement Method

Grzegorz Nalepa & Igor Wojnicki

4:45pm Semi-Automatic Refinement and Assessment of Subgroup Patterns

Martin Atzmueller & Franke Puppe

5:10pm UServ Case Study, Conceptual Design with ARD+ Method

Grzegorz Nalepa

Session 4c: Logics, General Ontologies, Categorization and Sem. Annotation - Chair: Florence Le Priol (Grove A)

3:55pm **Invited talk: Towards a Bridge between Cognitive Linguistics and Formal Ontology**

Jean-Pierre Desclés, Université Paris-Sorbonne, France

4:45pm Attribute-value formalization in the framework of the logic of determination of objects (LDO) and categorization

Anca Pascu & Jean-Pierre Desclés

5:10pm Combinators Introduction: an Algorithm

Ismail Biskri & Adam Joly

Session 4d: Uncertain Reasoning - Chair: Kevin Grant (Grove B)

3:55pm Insensitivity of Constraint-Based Causal Discovery Algorithms to Violations of the Assumption of Multivariate Normality

Mark Voortman & Marek Druzdzal

4:20pm Learning Dynamic Bayesian Classifiers

Miriam Martínez & Luis Enrique Sucar

4:45pm Evolutionary Learning of Dynamic Naive Bayesian Classifiers

Miguel A. Palacios-Alonso, Carlos Alberto Brizuela, & Luis Enrique Sucar

5:10pm Distance Metric Learning for Conditional Anomaly Detection

Michal Valko & Milos Hauskrecht

Schedule: Friday May 16th

Fri 16th	Lobby	Biscayne A	Biscayne B	Grove A	Grove B
8:00am	Registration				
9:00am		5: Invited Talk: Using AI to Model Creativity - <i>Bruce Buchanan</i>			
10:00am		Break (Terrace and Ballrooms)			
10:30am		6a: Intelligent Tutoring Systems	6b: Applied NLP	6c: Logics, Ontologies, +	6d: Uncertain Reasoning
12:15pm		Lunch (Terrace)			
1:45pm		7a: Intelligent Tutoring Systems	7b: Applied NLP	7c: Logics, Ontologies, +	7d: Uncertain Reasoning
3:00pm		Break (Terrace and Ballrooms)			
3:30pm		8a: Intelligent Tutoring Systems	8b: Applied NLP	8c: Logics, Ontologies, +	8d: Games & Entertainment
4:45pm					
5:00pm		9a: General Track	9b: Applied NLP	9c: Logics, Ontologies, +	9d: Games & Entertainment
6:00pm to 12:00pm		SoBe Bus - shuttle buses between the hotel and South Beach.			

Session 5: Invited talk - Chair: H. Chad Lane (Biscayne A&B)

9:00am **Using AI to model creativity**
Bruce G. Buchanan, University of Pittsburgh, USA

Friday, 16th May, 10:30am-12:15pm

Session 6a: Intelligent Tutoring Systems - Chair: Chas Murray (Biscayne A)

10:30am **Invited talk: Some Thoughts on Using Computers to Teach Argumentation**
Kevin Ashley, University of Pittsburgh, USA

11:20am The Coverage of Error Diagnosis in Logic Programming Using Weighted Constraints - The case of an ill-defined domain
Nguyen-Thinh Le & Wolfgang Menzel

11:45am Graph Grammars: An ITS Technology for Diagram Representations
Niels Pinkwart, Kevin Ashley, Vincent Alevan, & Collin Lynch

Session 6b: Applied Natural Language Processing - Chair: Philip McCarthy (Biscayne B)

10:30am Gender Differences across Correlated Corpora: Preliminary Results
Roberta Sabin, Kerri A. Goodwin, Jade Goldstein-Stewart, & Joseph A. Pereira

10:55am A Semantic Method for Textual Entailment
Andrew Neel, Max Garzon, & Vasile Rus

11:20am Paraphrase Identification with Lexico-Syntactic Graph Subsumption
Vasile Rus, Lintean Mihai, Philip McCarthy, Danielle McNamara, & Arthur Graesser

11:45am A Semantic Parser for Neuro-degenerative Disease Knowledge Discovery
Burak Ozyurt

Friday, 16th May, 10:30am-12:15pm

Session 6c: Logics, General Ontologies, Categorization and Sem. Annotation - Chair: Jean-Pierre Desclés (Grove A)

10:30am Applicative and Combinatory Categorical Grammar: Analysis of the French interrogative sentences

Aurélie Rossi

10:55am Categorical Grammars, Combinatory Logic and the Korean Language Processing

Juyeon Kang & Jean-Pierre Desclés

11:20am A typed logic for the categorial annotation of coordination in Arabic

Ismail Biskri

11:45am Categorization of the < SEATS >: Examples of a Domain of Notions In the Lexical Field

Pierre Boudon

Session 6d: Uncertain Reasoning - Special session in honor of Henry Kyburg - Chair: Yang Xiang (Grove B)

10:30am On the compilation of possibilistic default theories

Salem Benferhat & Yahi Safa

10:55am Toward Markov Logic with Conditional Probabilities

Jens Fisseler

11:20am A new justification of the unnormalized Dempster's rule of combination from the Least Commitment Principle

Frédéric Pichon & Thierry Denoëux

11:45am Preference-Based Default Reasoning

Manuela Ritterskamp & Gabriele Kern-Isberner

<p>The Uncertain Reasoning (UR) track is holding this special session in honor of Henry Kyburg, who passed away recently. The UR track has been running for 12 years and Henry has had close ties to the track, including as author of many papers as well as a PC member in the track. As a member of Institute for Human and Machine Cognition (IHMC) at Pensacola, FL, Henry was also closely associated with FLAIRS and was once an invited speaker.</p>
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Friday, 16th May, 1:45pm-3:00pm

Session 7a: Intelligent Tutoring Systems - Chair: Art Ward (Biscayne A)

1:45pm Diagnosing natural language answers to support adaptive tutoring

Myroslava Dzikovska, Gwendolyn Campbell, Charles Callaway, Natalie Steinhauser, Elaine Farrow, Johanna Moore, Leslie Butler, & Colin Matheson

2:10pm Content-Learning Correlations in Spoken Tutoring Dialogs at Word, Turn and Discourse Levels

Amruta Purandare & Diane Litman

2:35pm Learning to Assess Low-level Conceptual Understanding

Rodney Nielsen, Wayne Ward, & James Martin

Session 7b: Applied Natural Language Processing - Chair: Scott Crossley (Biscayne B)

1:45pm Learning a probabilistic model of event sequences from Internet weblog stories

Mehdi Manshadi, Reid Swanson, & Andrew Gordon

2:10pm Unsupervised Discovery of Event Scenarios from Texts

Cosmin Bejan

2:35pm Unsupervised Learning of General-Specific Noun Relations from the Web

Gaël Dias, Raycho Mukelov, & Guillaume Cleuziou

Friday, 16th May, 1:45pm-3:00pm

Session 7c: Logics, General Ontologies, Categorization and Semantic Annotation - Chair: Ismail Biskri (Grove A)

- 1:45pm Exceptions in ontologies: when topology meets typicality
Christophe Jouis & Julien Bourdaillet
- 2:10pm Multi-Prototype Concept and Object Typicality in Ontology
Yi Cai, Ho-fung Leung, & Ada Wai-chee Fu
- 2:35pm Answer Set Programming on Expert Feedback to Populate and Extend Dynamic Ontologies
Mathias Niepert, Cameron Buckner, & Colin Allen

Session 7d: Uncertain Reasoning - Chair: Kevin Grant (Grove B)

- 1:45pm A New Approach to Model-Based Diagnosis Using Probabilistic Logic
Nikita Sakhanenko, Roshan Rammohan, George Luger, & Carl Stern
- 2:10pm Second-Order Risk Constraints
Love Ekenberg, Aron Larsson, & Mats Danielson
- 2:35pm A First-Order Bayesian Tool for Probabilistic Ontologies
Paulo Costa, Rommel Carvalho, Marcelo Ladeira, Kathryn Laskey, Laecio Santos, & Shou Matsumoto

Friday, 16th May, 3:30pm-4:45pm

Session 8a: Intelligent Tutoring Systems - Chair: Niels Pinkwart (Grove A)

- 3:30pm A Framework for Evaluating Semantic Knowledge in Problem-Solving-Based Intelligent Tutoring Systems
Philippe Fournier-Viger, Roger Nkambou, & Andre Mayers
- 3:55pm Problem posing in AnimalWatch: An interactive system for student-authored content
Mike Birch, Carole Beal, & Erin Shaw
- 4:20pm Trialog: How Peer Collaboration Helps Remediate Errors in an ITS
Robert Hausmann, Brett van de Sande, & Kurt VanLehn

Session 8b: Applied Natural Language Processing - Chair: Gilles Richard (Biscayne B)

- 3:30pm On Using SVM and Kolmogorov Complexity for Spam Filtering
Gilles Richard & Sihem Belabbes
- 3:55pm A Semantic Feature for Verbal Predicate and Semantic Role Labeling using SVMs
Hansen A. Schwartz, Fernando Gomez, & Christopher Millward
- 4:20pm Candel: An Algorithm for Same-Sentence Pronominal Resolution
Cristina Nicolae & Gabriel Nicolae

Session 8c: Logics, General Ontologies, Categorization and Sem. Annotation - Chair: Anca Pascu (Grove A)

- 3:30pm Automatic annotation of images, pictures or videos comments for text mining guided by no textual data
Florence Le Priol
- 3:55pm A Multilingual Approach to the Discourse Automatic Annotation: Application to French and Bulgarian
Iana Atanassova, Antoine Blais, & Jean-Pierre Desclés
- 4:20pm Automatic Retrieval of Definitions in Texts, in accordance with a General Linguistic Ontology
Charles Teissedre, Brahim Djioua & Jean-Pierre Desclés

Session 8d: Games & Entertainment - Chair: Klaus Jantke (Grove B)

- 3:30pm **Invited talk: AI in Digital Games: Past, Present & Future**
Florian Stadlbauer, DECK13 Interactive GmbH, Germany
- 4:20pm Longboard: A Sketch Based Intelligent Storyboarding Tool for Creating Machinima
Arnav Jhala, Curtis Rawls, Samuel Munilla, & R. Michael Young

Friday, 16th May, 5:00pm-6:15pm

Session 9a: General Conference - Chair: Antonio Lopez, Jr. (Biscayne A)

5:00pm On Applying Unit Propagation-Based Lower Bounds in Pseudo-Boolean Optimization
Federico Heras Viaga, Vasco Manquinho, Joao Marques-Silva

5:25pm Conditional and Composite Constraints with Preferences
Malek Mouhoub & Amrudee Sukpan

5:50pm Non-rigid image registration
Rhoda Baggs & Dan Tamir

Session 9b: Applied Natural Language Processing - Chair: Roberta Sabin (Biscayne B)

5:00pm Assessing Forward-, Reverse-, and Average-Entailment Indices on Natural Language Input from the Intelligent Tutoring System, iSTART

Philip McCarthy, Vasile Rus, Scott Crossley, Arthur Graesser, & Danielle McNamara

5:25pm Analyzing Dialog Coherence using Transition Patterns in Lexical and Semantic Features
Amruta Purandare & Diane Litman

5:50pm Using Latent Semantic Analysis to Explore Second Language Lexical Development
Scott Crossley, Thomas Salsbury, Philip McCarthy, & Danielle McNamara

Session 9c: Logics, General Ontologies, Categorization and Sem. Annotation - Chair: Anca Pascu (Grove A)

5:00pm Categorizations and annotations of Citation in Research Evaluation
Marc Bertin

5:25pm **Panel: Logic, Ontologies, Cognitive Linguistics, and Natural Language Processing**
Anca Pascu, Jean-Pierre Desclés, Ismail Biskri, Anca Pascu, Vera Goodacre, & Florence Le Priol

Session 9d: Games & Entertainment - Chair: G. Michael Youngblood (Grove B)

5:00pm Memory-Bounded D* Lite
Denton Cockburn & Ziad Kobti

5:25pm German Girls are Goofy. An Investigation into the Knowledge Deficiencies of Digital Games that are Designed for Learning
Klaus Jantke

5:50pm **Panel: An Open Discussion on Interests, Needs, and Research in Interactive AI**
G. Michael Youngblood & Klaus Jantke (moderators)

Schedule: Saturday May 17th

Sat 17th	Lobby	Biscayne A	Biscayne B	Grove A	Peacock Park Room
8:00am	Registration				
9:00am		10: Invited Talk: Privacy-enhanced Personalization - <i>Alfred Kobsa</i>			
10:00am		Break (Terrace and Ballrooms)			
10:30am		11a: AI Planning & Scheduling	11b: Applied NLP	11c: Data Mining	11d: Spatio-Temporal Reasoning
12:15pm		Lunch (Terrace)			
1:45pm		12a: AI Planning & Scheduling	12c: Data Mining	Vacant	Vacant
3:30pm					FLAIRS Business Meeting
4:30pm		END OF CONFERENCE			

Session 10: Invited talk - Chair: David Wilson (Biscayne A&B)

9:00am **Privacy-enhanced Personalization**

Alfred Kobsa, University of California, Irvine, USA

Saturday, 17th May, 10:30am-12:15pm

Session 11a: AI Planning & Scheduling - Chair: Roman Barták (Biscayne A)

10:30am Reasoning with Conditional Time-intervals

Philippe Laborie & Jerome Rogerie

10:55am Recovering from Inconsistency in Distributed Simple Temporal Networks

Anthony Gallaher & Stephen Smith

11:20am Distributed University Timetabling with Multiply Sectioned Constraint Networks

Yang Xiang

11:45am A Novel Prioritization Technique for Solving Markov Decision Processes

Jilles Steeve Dibangoye, Brahim Chaib-draa, & Mouaddib Abdel-illah

Session 11b: Applied Natural Language Processing - Chair: Vasile Rus (Biscayne B)

10:30am Ontology-based Question Answering Using Predefined Question Patterns and Textual Entailment

Shiyuan Ou, Orasen Constantin, Dalila Mekhaldi, & Laura Hasler

10:55am QueSTS: A Query Specific Text Summarization System

Sravanthi M, Ravindranath Chowdary C, & Sreenivasa Kumar P

11:20am Automatic Measurement of Syntactic Complexity Using the Revised Developmental Level Scale

Xiaofei Lu

11:45am Incorporating Latent Semantic Indexing into Spectral Graph Transducer for Text Classification

Xinyu Dai, Baoming Tian, Junsheng Zhou, & Jiajun Chen

Session 11c: Data Mining - Chair: Istvan Jonyer (Grove A)

10:30am Machine Learning to predict the incidence of Retinopathy of Prematurity

Aniket Ray, Vilas Kumar, Balaraman Ravindran, & Aditya Verma

10:55am Building Useful Models from Imbalanced Data with Sampling and Boosting

Christopher Seiffert, Taghi Khoshgoftaar, Jason Van Hulse, & Amri Napolitano

11:20am Selecting minority examples from misclassified data for over-sampling

Jorge de la Calleja, Olac Fuentes, Jesús Antonio, & González Bernal

11:45am Semantic Analysis of Association Rules

Ping Chen, Rakesh Verma, Janet Meininger, & Wenyaw Chan

Saturday, 17th May, 10:30am-12:15pm

Session 11d: Spatio-Temporal Reasoning - Chair: Hans Guesgen (Peacock Park Room)

10:30am A Framework for Merging Qualitative Constraints Networks
Jean-François Condotta, Souhila Kaci, & Nicolas Schwind

10:55am Reasoning about Topological and Positional Information in Dynamic Settings
Marco Ragni & Stefan Woelfl

11:20am An Inference Mechanism for Point-Interval Logic
Mashhood Ishaque, Faisal Mansoor, & Abbas K. Zaidi

11:45am ThomCat: A Bayesian Blackboard model of Hierarchical Temporal Perception [based on Hofstadter's CopyCat, with a musical domain]
Charles Fox

Saturday, 17th May, 1:45pm-3:30pm

Session 12a: AI Planning & Scheduling - Chair: Philippe Laborie (Biscayne A)

1:45pm A New Approach to Heuristic Estimations for Cost-Based Planning
Raquel Fuentetaja, Daniel Borrajo, & Carlos Linares

2:10pm Tractable Class of a Problem of Goal Satisfaction in Mutual Exclusion Network
Pavel Surynek

2:35pm Towards getting domain knowledge: Plans analysis through investigation of actions dependencies
Lukas Chrupa & Roman Barták

3:00pm Reformulating Constraint Models for Classical Planning
Roman Barták & Daniel Toropila

Session 12c: Data Mining - Chair: David Bisant (Biscayne B – *note room change from 11c*)

1:45pm Using Genetic Programming to Increase Rule Quality
Rikard König, Ulf Johansson, & Lars Niklasson

2:10pm Complementary Analysis of High-Order Association Patterns and Classification
Thomas W.H. Lui & David K.Y. Chiu

2:35pm Extending Nearest Neighbor Classification with Spheres of Confidence
Ulf Johansson, Henrik Boström, & Rikard König

3:00pm A Mixture Imputation-Boosted Collaborative Filter
Xiaoyuan Su, Taghi Khoshgoftaar, & Russell Greiner

Map of Coconut Grove



Things to do and places to eat in The Grove

- Have a drink at Fat Tuesdays in CocoWalk.
- Have good Cuban food at Las Culebrinas, up 27th Avenue past Bird Road.
- For a strictly non-vegetarian experience, eat at The Kife (an Argentinian steak house) on Main Highway.
- Relax at one of the sidewalk cafes on Main Highway and Commodore Plaza.
- Enjoy a cold drink on the waterfront at Scotty's (just north of the City Hall) or Monty's (Aviation Avenue).
- Hang out with UM students in the Sandbar, on Grand Avenue west of CocoWalk.

Conference at a Glance (8th Floor)

Wed 14th	Lobby	Biscayne A	Biscayne B	Grove A	Grove B	
12-6pm	Registration					
6-9pm					Poster prep & setup	
Thu 15 th	Lobby	Biscayne A	Biscayne B	Grove A	Grove B	
8:00am	Registration					Poster prep & setup
9:00am		1: Invited Talk (Biscayne): Embodied Intelligent Agents as Servants, Advisors, Companions and Jesters - <i>Candace Sidner</i>				
10:00am		Break (Terrace and Ballrooms)				Poster Session
11:00am		2a: GT	2b: AIE	2c: CBR*		
12:15pm		Lunch (Terrace)				
1:45pm		3a: GT: ML	3b: DERIS	3c: CBR❶	3d: UR❷	
3:25pm		Break (Terrace and Ballrooms)				
3:55pm		4a: GT: ML	4b: DERIS	4c: LGOCSA*	4d: UR	
6:00pm		Reception (Chart House)				
Fri 16th	Lobby	Biscayne A	Biscayne B	Grove A	Grove B	
8:00am	Registration					
9:00am		5: Invited Talk (Biscayne): Using AI to Model Creativity - <i>Bruce Buchanan</i>				
10:00am		Break (Terrace and Ballrooms)				
10:30am		6a: ITS*	6b: ANLP	6c: LGOCSA	6d: UR	
12:15pm		Lunch (Terrace)				
1:45pm		7a: ITS	7b: ANLP	7c: LGOCSA	7d: UR	
3:00pm		Break (Terrace and Ballrooms)				
3:30pm		8a: ITS	8b: ANLP	8c: LGOCSA	8d: G&E*	
5:00pm		9a: GT	9b: ANLP	9c: LGOCSA❶	9d: G&E❶	
6:00pm - 12:00pm	SoBe Bus - shuttle between the hotel and South Beach (leaves every hour, returns every half hour)					
Sat 17th	Lobby	Biscayne A	Biscayne B	Grove A	Peacock Park Rm	
8:00am	Registration					
9:00am		10: Invited Talk (Biscayne): Privacy-enhanced Personalization - <i>Alfred Kobsa</i>				
10:00am		Break (Terrace and Ballrooms)				
10:30am		11a: AIPS	11b: ANLP	11c: DM	11d: STR	
12:15pm		Lunch (Terrace)				
1:45pm		12a: AIPS	12c: DM	12b: vacant	12d: vacant	
3:30pm						FLAIRS Business Mtg
4:30pm		END OF CONFERENCE				

* A special track invited talk occurs during these sessions (CBR, LGOCSA, ITS, and G&E)

❶ A panel is held during these sessions (CBR, LGOCSA, and G&E)

❷ Special session dedicated to the memory of Henry Kyburg (part of the Uncertain Reasoning special track)

AIE – Artificial Intelligence Education

AIPS – Artificial Intelligence, Planning, & Scheduling

ANLP – Applied Natural Language Processing

CBR – Case-Based Reasoning

DERIS – Design, Evaluation & Refinement of Intelligent Systems

DM – Data Mining

G&E – Games & Entertainment

GT – General Track

ITS – Intelligent Tutoring Systems

LGOCSA – Logics, General Ontologies, Categorization, & Semantic Annotation

ML – Machine Learning

STR – Spatio-Temporal Reasoning

UR – Uncertain Reasoning