Ninth Advances in Cognitive Systems Conference

Schedule: November 15-18, 2021

Monday, November 15th

Goal Reasoning Workshop:

Schedule for Goal Reasoning Workshop 2021			
Times (EST)	**Session**	**Authors and Title**	
9:30	Opening remarks	Sravya Kondrakunta	
9:40	Invited Talk	Dustin Dannenhauer	Dungeon Crawl Stone Soup as a Goal Reasoning Challenge Problem
10:30	Talk	Mark Wilson and David Aha	A Goal Reasoning Model for Autonomous Underwater Vehicles
10:50	Talk	Venkatsampath Raja Gogineni, Sravya Kondrakunta and Michael Cox	Multi-agent Goal Delegation
11:10 – 11:30	Break		
11:30	Talk	Adan Gomez	Self-Control Mechanisms for an GDA-Based Tutor Module of an Intelligent Tutoring System
11:50	Talk	Sravya Kondrakunta, Venkatsampath Raja Gogineni and Michael Cox	Agent Goal Management using Goal Operations
12:10	Talk	David Winer and Garrett Wang	Plan-design Goal Recognition with Autoencoding Transformer for the Cerbrec Modeling Platform
12:30 – 1:30	Lunch Break		
1:30	Invited Talk	Pat Langley	Rational Agency and Radical Autonomy in Open Worlds
2:20	Talk	Philip Jackson	Toward Human-Level Goal Reasoning with a Natural Language of Thought
2:40 – 3:00	Break		
3:00	Talk	Laura Marquez, Heider Zapa and Adan Gomez	Computational Representation of a Cognitive Control Mechanism for a Goal-based Executive Function of a Cognitive System
3:20	Talk	Xinmiao Yu, Riccardo Morri and Fernanda M. Eliott	EDA, An Empathy-Driven Computational Architecture
3:40	Talk	Kenji Brameld, Germán Castro, Claude Sammut, Mark Roberts and David Aha	Human-Centric Goal Reasoning with Ripple-Down Rules
4:00	Closing remarks	Sravya Kondrakunta	

Workshop on Pedagogical Advances in Cognitive Systems:

For further information, contact the organizer, Tom Williams twilliams@mines.edu.

Tuesday, November 16th

Time	Description
10:45 AM	**Welcome and Logistics** - Mark Burstein and Mohan Sridharan
11:00 AM	**Session 1** An Analysis and Comparison of ACT-R and Soar, John Laird. Deep Goal Reasoning: An Analysis, Weihang Yuan and Hector Munoz-Avila. Scaling Challenges in Explanatory Reasoning, Pat Langley and Mohan Sridharan.
12:30 PM	**Break**
1:00 PM	**Invited talk - Gerd Gigerenzer** Director of the Harding Center for Risk Literacy, University of Potsdam Psychological AI: Simplicity and Transparency in Prediction
1:45 PM	**Session 2** Scales and Hedges in a Logic with Analogous Semantics, H.R.Schmidtke and S. Coelho. Hierarchical Problem Networks for Knowledge-Based Planning, Pat Langley and Howard Shrobe
2:45 PM	**Break**
3:00 PM	**Session 3 (Short Talks)** *Short talks are 10 minutes plus 2 minutes for questions during changeover.* Signature Entrenchment and Conceptual Changes in Automated Theory Repair, Xue Li, Alan Bundy and Eugene Philalithis Operationalizing Tactical Representations, Thomas Hinrichs and Kenneth Forbus. From Unstructured Text to Causal Knowledge Graphs: A Transformer-Based Approach, Scott Friedman, Ian Magnususon, Vasanth Sarathy and Sonja Schmer-Galunder.
3:40 PM	**Break (with a Breakout Room for each short talk)**
4:00 PM	**Session 4** OpenMIND: Planning and Adapting in Domains with Novelty, D. Musliner, M. Pelican, M. McLure, S. Johnston, R. Freedman and C. Knutson Learning Norms via Natural Language Teachings, Taylor Olson and Ken Forbus.
5:00 PM	**Adjourn**

**Schedule still subject to change. Please note that all times are Eastern Time (GMT-5). Talks will be recorded and made available on YouTube.*

Wednesday, November 17 th

Time	Description
11:00 AM	**Invited talk - Ute Schmid** Head of the Cognitive Systems Group, University of Bamberg Reconciling knowledge-based and data-driven AI for human-in-the-loop machine learning
11:45 AM	**Session 5** Knowledge Engineering in the Long Game of Artificial Intelligence: The Case of Speech Acts, Marjorie McShane, Jesse English and Sergei Nirenburg. Language Models as a Knowledge Source for Cognitive Agents, Robert Wray, James Kirk and John Laird.
12:45 PM	**Break**
1:10 PM	**Herbert A. Simon Award Presentation** - Pat Langley
1:15 PM	**Herbert A. Simon Award Talk - James Allen** University of Rochester and IHMC, Founding Fellow of AAAI Conversational systems: Past, Present and future
2:00 PM	**Session 6** The Impact of Partner Expressions on Felt Emotion in the Iterated Prisoner's Dilemma: An Event-level Analysis, M. Angelika-Nikita, C.M. de Melo, K. Terada, G. Lucas and J. Gratch. Towards a Cognitive Model of Collaborative Memory, Willa Mannering, Suparana Rajaram and Michael Jones.
3:00 PM	**Break**
3:15 PM	**Session 7 (Short Talks)** *Short talks are 10 minutes plus 2 minutes for questions during changeover.* Language Generation for Broad-Coverage, Explainable Cognitive Systems, Marjorie McShane and Ivan Leon. Physical Reasoning in an Open World, Zhuoran Zeng and Ernest Davis. Task Modifiers for HTN Planning and Acting, W. Yuan, H. Munoz-Avila, V.R.Gogineni, S. Kondrakunta, M. Cox and L. He. Finding Trolls Under Bridges: Preliminary Work on a Motif Detector, W.V. Yarlott, A. Ochoa, A. Acharya, L. Bobrow, D. C. Estrada, D. Gomez, J. Zeng, D. McDonald, C. Miller and M. A. Finlayson Lensing Machines: Representing Perspective in Latent Variable Models, Karthik Dinakar and Henry Lieberman. An explainability analysis of a sentiment prediction task using a transformer-based attention filter, Neşet Özkan Tan, Joshua Bensemann, Diana Benavides-Prado, Yang Chen, Mark Gahegan, Lia Lee, Alex Yuxuan Peng, Patricia Riddle and Michael Witbrock.
4:40 PM	**Break (with a Breakout Room for each short talk)**
5:00 PM	**Adjourn**

Thursday, November 18th

Time	Description
11:00 AM	**Session 8** Computational Metacognition, Michael Cox, Zahiduddin Mohammad, Sravya Kondrakunta, Ventaksamapth Raja Gogineni, Dustin Dannenhauer and Othalia Larue Self-directed Learning of Action Models using Exploratory Planning, D. Dannenhauer, M. Molineaux, M. Floyd, N. Reifsnyder and D. Aha. Rational Selection of Goal Operations and the Integration of Search Strategies with Goal-Driven Autonomy, S. Kondrakuntam V. Gogineni, M. Cox, D. Coleman, X. Tan, T. Lin, M. Hou, F Zhang, F. McQuarrie, C. Edwards.
12:30 PM	**Break**
1:00 PM	**Invited talk - Anthony Cohn** Professor of Automated Reasoning, University of Leeds Manipulation in cluttered environments and interacting with robots
1:45 PM	**Panel Discussion - Research Directions for Cognitive Systems**
2:30 PM	**Session 9** Active Observer Visual Problem-Solving Methods are Dynamically Hypothesized, Deployed and Tested, Markus Solbach and John Tsotsos.
3:00 PM	**Break**
3:15 PM	**Session 10 (Short Talks)** *Short talks are 10 minutes plus 2 minutes for questions during changeover.* A System for Image Understanding using Sensemaking and Narrative, Zev Battad and Mei Si. An Initial Description of Capabilities and Constraints for Designing a Computational Auditory System (an Artificial Ear) for Cognitive Architectures, Frank Ritter, Mathieu Brener and Jeffrey Bolkhovsky. Convolutional Cobweb: A Model of Incremental Learning from 2D Images, Christopher Maclellan and Harshil Thakur. A Computational Perspective on Some Cognitive Illusions, Kenneth Forbus. Automatic Item Generation of Figural Analogy Problems: A Review and Outlook, Yuan Yang, Deepayan Sanyal, Joel Michelson, James Ainooson and Maithilee Kunda. Structural Alignment as an Abductive Integer Linear Programming Problem, Clifton McFate.
4:35 PM	**Break (with a Breakout Room for each short talk)**
5:00 PM	**Closing comments and adjournment**

**Schedule still subject to change. Please note that all times are Eastern Time (GMT-5). Talks will be recorded and made available on YouTube.*