

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. Elliott	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) <i>Short talks are 10 minutes plus 2 minutes for questions during changeover.</i> 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 17th

Time	Description
10:55 AM	Newell and Simon Award Presentation - Pat Langley
11:00 AM	Newell and Simon Talk - James Allen , University of Rochester and IHMC Conversational systems: Past, Present and future
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
1:15 PM	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
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) <i>Short talks are 10 minutes plus 2 minutes for questions during changeover.</i> 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, J. Bensemann, D. Benavides-Prado, Y. Chen, M. Gahegan, L. Lee, A. Y. Peng, P. Riddle and M. Witbrock.
4:40 PM	Break (with a Breakout Room for each short talk)
5:00 PM	Adjourn

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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) <i>Short talks are 10 minutes plus 2 minutes for questions during changeover.</i> 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

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