

Thursday, August 5, 2010

Doctoral Consortium

Organizer: Robert St. Amant

8:00 am – 8:15 am **Registration [Bossone lobby]**

8:15 am – 9:00 pm **Doctoral Consortium [Hill Conference Room, LeBow 240*]**
(with lunch, dinner, and breaks)

* Directions: exit Bossone; walk down Market St. toward Center City skyscrapers and enter next building through either set of revolving doors; take stairs up one floor to room #240

CLARION Tutorial

Organizers: Nicholas Wilson & Michael Lynch

8:00 am – 9:00 am **Registration [Bossone lobby]**

9:00 am – 12:30 pm **Tutorial [Bossone 302, 3rd floor]**
(with 10:15 break in Bossone lobby, 1st floor)

Brahms Tutorial

Organizer: Maarten Sierhuis

12:30 pm – 1:00 pm **Registration [Bossone lobby]**

1:00 – 4:30 pm **Tutorial [Bossone 302, 3rd floor]**
(with 2:30 break in Bossone lobby, 1st floor)

ACT-R Workshop

Organizer: John R. Anderson

8:00 am – 8:45 am **Registration [Bossone lobby]**

8:45 am – 5:30 pm **Workshop [Bossone Auditorium, 1st floor]**
(with 10:15 and 2:30 breaks in Bossone lobby)

Friday, August 6, 2010

8:00 am **Registration** [Bossone lobby]

9:00 am **Welcome** [Bossone auditorium]
Dario Salvucci & Glenn Gunzelmann

9:10 am **Invited Talk**
Why Are Step-Based Tutoring Systems Almost as Effective as Human Tutors?
– *Kurt VanLehn*, Arizona State University

10:10 am **Break**

10:30 am **Talks: Knowledge & Performance**

- When to Switch? Understanding How Performance Tradeoffs Shape Dual-Task Strategy
– *Duncan P. Brumby, Nina del Rosario, & Christian P. Janssen*
- A Cognitively Bounded Rational Analysis Model of Dual-Task Performance Trade-Offs
– *Christian P. Janssen, Duncan P. Brumby, John Dowell, & Nick Chater*
- A Temporally Asymmetric Hebbian Network for Sequential Working Memory
– *Jared C. Sylvester, James A. Reggia, Scott A. Weems, & Michael Bunting*
- Combining Procedural and Declarative Knowledge in a Graphical Architecture
– *Paul S. Rosenbloom*

12:00 pm **Lunch**

1:30 pm **Talks: Developmental Milestones**

- A Cognitive Model of Theory of Mind
– *Laura M. Hiatt & J. Gregory Trafton*
- A Computational Model of Second-Order Social Reasoning
– *Leendert van Maanen & Rineke Verbrugge*
- A Computational Model of Functional Category Learning in a Cognitive Architecture
– *Yongjia Wang & John E. Laird*
- A New Approach to Exploring Language Emergence as Boundedly Optimal Control in the Face of Environmental and Cognitive Constraints
– *Jeshua Bratman, Michael Shvartsman, Richard L. Lewis, & Satinder Singh*

3:00 pm **Break**

3:30 pm **Symposium: Cognitive Control**
– *Andrew Howes, Richard Cooper, Matthew Botvinick, Richard Lewis, & Niels Taatgen*

5:00 pm **Poster Session [Bossone Atrium, 3rd floor]**

1. How to Investigate the Living Cognition: An Application to Dynamic Simulation of Mental Activities while Driving
– *Thierry Bellet, Pierre Mayenobe, & Jean-Charles Bornard*
2. Locating the Neural Correlates of the Problem State Resource: Analyzing fMRI Data on the Basis of a Computational Model
– *Jelmer Borst, Niels A. Taatgen, & Hedderik van Rijn*
3. “Hello Java” Linking ACT-R 6 with a Java Simulation
– *Philippe Büttner*
4. Linguistic Spatial Gestures
– *Leonard A. Breslow, Anthony M. Harrison, & J. Gregory Trafton*
5. Nomination and Prioritization of Goals in a Cognitive Architecture
– *Dongkyu Choi*
6. Proactive Interference in Location Learning: A New Closed-Form Approximation
– *Arindam Das & Wolfgang Stuerzlinger*
7. Cognitive Modeling of Strategies in Dynamic Tasks
– *Alberto De Obeso Orendain & Sharon Wood*
8. Dimensions of Leader-in-Context Models
– *Ceyhun Eksin, Barry G. Silverman, David Pietrocola, & Rui Kang*
9. An Algorithm for Self-Motivated Hierarchical Sequence Learning
– *Olivier L. Georgeon, Jonathan H. Morgan, Frank E. Ritter*
10. Answer Set Programming for Computational Psychological Models
– *Sara Girotto & Marcello Balduccini*
11. Towards a Cognitive Model of Conceptual Blending
– *Markus Guhe, Alan Smaill, & Alison Pease*
12. Modeling Interaction and Integration of Perception and Action
– *Pascal Haazebroek & Bernhard Hommel*
13. Guidelines for Developing Explainable Cognitive Models
– *Maaïke Harbers, Joost Broekens, Karel van den Bosch, & John-Jules Meyer*
14. Prediction Intervals for Performance Prediction
– *Tiffany S. Jastrzembski, Kelly Addis, Michael Krusmark, Kevin A. Gluck, & Stuart Rodgers*
15. Exploration of Costs and Benefits of Predictive Human Performance Modeling for Design
– *Bonnie E. John & Tiffany S. Jastrzembski*
16. Integrating Fast and Slow Cognitive Processes
– *William G. Kennedy & Magdalena Bugajska*

Doctoral Consortium Posters

17. Contextual Memory for Goals: On the Role of Context, Attention, and Intention in Cognitive Control
– *Michel E. Brudzinski, Rensselaer Polytechnic Institute*
18. Learning to Use Memory
– *Nicholas A. Gorski, University of Michigan*
19. Recognizing Behaviors and the Intentional State of the Participants
– *Wesley Kerr, University of Arizona*

20. A Probabilistic Model of Phonetic Cue Restructuring

– *James P. Kirby*, University of Chicago

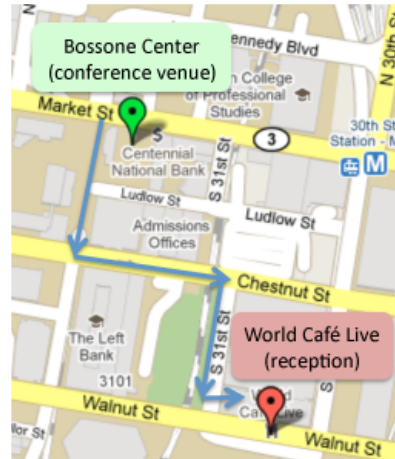
21. Modeling Memes, A Memetic View of Affordance Learning

– *Benjamin D. Nye*, University of Pennsylvania

6:30 pm **Break**

7:00 pm **Conference Reception**
World Café Live
 3025 Walnut Street

* Note: From 31st Street, climb the steps up to Walnut Street, enter through the main entrance, and go down to the lower floor of the venue



Saturday, August 7, 2010

9:00 am **Invited Talk**

– *Jonathan Gratch*, University of Southern California

10:00 am **Break**

10:30 am **Talks: Theory Comparison**

- Nice Graphs, Good R^2 , but Still a Poor Fit? How to Be More Sure Your Model Explains Your Data
– *Niels A. Taatgen & Hedderik van Rijn*
- Modelling the Correlation Between Two Putative Inhibition Tasks: A Simulation Approach
– *Richard P. Cooper & Eddy J. Davelaar*
- Rewards and Punishments in Iterated Decision Making: An Explanation for the Frequency of the Contingent Event Effect
– *Antonio Napoli & Danilo Fum*
- Neural Correlates of Temporal Credit Assignment
– *Matthew M. Walsh & John R. Anderson*

12:00 pm **Lunch**

Executive Planning Meeting [Hill Conference Room, LeBow 240*]

- * Anyone interested in helping to plan the future of ICCM is welcome to attend; advance notice of attendance would be appreciated but is not required
- * Lunch will be served at the meeting
- * Directions: exit Bossone; walk down Market St. toward Center City skyscrapers and enter next building through either set of revolving doors; take stairs up one floor to room #240

1:30 pm **Talks: Neural Correlates**

- Toward an Analog Neural Substrate for Production Systems
– *Patrick Simen, Marieke Van Vugt, Fuat Balci, David Freestone, & Thad Polk*
- Checking the Brain Mapping Hypothesis: Predicting and Validating BOLD Curves for a Complex Task Using ACT-R
– *Claus Möbus, Jan Charles Lenk, Arno Claassen, Jale Özyurt, & Christiane Thiel*
- Deductive Spatial Reasoning: From Neurological Evidence to a Cognitive Model
– *Marco Ragni, Thomas Fangmeier, & Sven Brüßow*
- Dynamic Behaviour of a Spiking Model of Action Selection in the Basal Ganglia
– *Terrence C. Stewart, Xuan Choo, & Chris Eliasmith*

3:00 pm **Break**

3:30 pm Talks: Perception, Action, & Spatial Processing

- Modeling Visual Search of Displays of Many Objects: The Role of Differential Acuity and Fixation Memory
– *David Kieras*
- Task-Constrained Interleaving of Perceptual and Motor Processes in a Time-Critical Dual Task as Revealed Through Eye Tracking
– *Anthony J. Hornof & Yunfeng Zhang*
- Modeling the Effects of Work Shift on Learning in a Mental Orientation and Rotation Task
– *Tim Halverson, Glenn Gunzelmann, L. Richard Moore Jr., & Hans Van Dongen*
- Using Diverse Cognitive Mechanisms for Action Modeling
– *John E. Laird, Joseph Z. Xu, & Samuel Wintermute*

5:00 pm Poster Session [Bossone Atrium, 3rd floor]

1. Using A* Graph Traversal to Model Conflict Resolution in Air Traffic Control
– *Stefan Lehmann, Scott Bolland, Roger Remington, Michael S. Humphreys, & Andrew Neal*
2. Computational Models of Perceptual Learning across Multiple Auditory Tasks: Modeling Daily Learning Limits as Memory Decay
– *David Little & Bryan Pardo*
3. A Human-Markov Chain Monte Carlo Method For Investigating Facial Expression Categorization
– *Daniel McDuff*
4. Developing a Model of Cognitive Lockup for User Interface Engineering
– *Tina Mioch, Rosemarijn Looije, & Mark Neerincx*
5. Modeling Statistical Learning and Response Inhibition with the Change Signal Task
– *L. Richard Moore Jr., Glenn Gunzelmann, Joshua W. Brown*
6. Cognitive Modeling of the Acquisition of a Highly Inflected Verbal System
– *Jesús Oliva, José Ignacio Serrano, María Dolores del Castillo, & Ángel Iglesias*
7. Building Large Learning Models with Herbal
– *Jaehyon Paik, Jong W. Kim, Frank E. Ritter, Jonathan H. Morgan, Steven R. Haynes, & Mark A. Cohen*
8. Accountable Modeling in ACT-UP, a Scalable, Rapid-Prototyping ACT-R Implementation
– *David Reitter & Christian Lebiere*
9. Modeling a Three Term Fan Effect
– *Matthew F. Rutledge-Taylor, Aryn A. Pyke, Robert L. West, & Hana Lang*
10. A Computational Account of Complex Mental Image Construction
– *Jan Frederik Sima*
11. Deriving Behavior from Personality: A Reinforcement Learning Approach
– *Christopher Simpkins, Charles L. Isbell Jr., & Nicholas Marquez*
12. LETF: A Lisp-Based Exploratory Testing Framework for Computational Cognitive Models
– *Clayton T. Stanley*

13. A Cognitive Model of the Acquisition and Use of Referring Expressions
– *Jacolien van Rij, Hedderik van Rijn, & Petra Hendriks*
14. Interference and ACT-R: New evidence from the fan effect
– *Robert L. West, Aryn A. Pyke, Matthew F. Rutledge-Taylor, & Hana Lang*
15. An Online Database of ACT-R Parameters: Towards a Transparent Community-Based Approach to Model Development
– *Tsunhin John Wong, Edward T. Cokely, & Lael J. Schooler*

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16. Towards Descriptive and Prescriptive Double-Loop Learning Agents
– *Ceyhan Eksin, University of Pennsylvania*
17. Understanding Strategic Adaptation in Multitask Settings
– *Christian P. Janssen, University College London*
18. Canonical Behavior Patterns
– *Walter C. Mankowski, Drexel University*
19. Exploring a Novel Training Paradigm for Knowledge and Skills Acquisition
– *Jaehyon Paik, Pennsylvania State University*
20. Modeling of Modality Selection in Multimodal Human-Computer Interaction
– *Stefan Schaffer, Berlin Institute of Technology*
21. Visual Search Strategies and the Layout of the Display
– *Bella Z. Veksler, Rensselaer Polytechnic Institute*

6:30 pm End of Day

Sunday, August 8, 2010

9:00 am **Talks: Implementation & Scale**

- Towards Efficiently Supporting Large Symbolic Declarative Memories
– *Nate Derbinsky, John E. Laird, & Bryan Smith*
- Concurrent Knowledge Activation Calculation in Large Declarative Memories
– *Scott A. Douglass & Christopher W. Myers*
- Improving the Reading Rate of Double-R-Language
– *Mary Freiman & Jerry Ball*
- The Evolution of a Goal-Directed Exploration Model: Effects of Information Scent and Go-back Utility on Successful Exploration
– *Leonghwee Teo & Bonnie E. John*

10:30 am **Break**

11:00 am **Invited Talk**

Practice Makes Perfect: The Interplay between Science and Practical Application of Cognitive Modeling
– *Bonnie E. John, Carnegie Mellon University*

12:00 pm End of Conference