

## ICDL 2004 Schedule

Locations for:

Invited Talks: Auditorium  
 Sessions 1 - 6: Auditorium  
 Poster Sessions: Foyer

Day One: Wednesday October 20

Registration booth opens: "8:00AM Coffee and Pastries"

Tutorial Session I (8:30-10:00)

- Developmental Psychology: Leslie Carver and Gedeon Deak (8:30-10:00)  
Location: Trustees Room
- Machine Learning: Sanjoy Dasgupta (8:30-10:00)  
Location: Auditorium

Coffee Break: (10:00-10:20)

Tutorial Session II (10:20-11:50)

- Neuroscience: Irene Merzlyak (10:20-11:50)  
Location: Trustees Room
- Autonomous Mental Development: Juyang Weng (10:20-11:50)  
Location: Auditorium

Lunch: (11:50-1:15)

Commencement / Welcome (1:15-1:30)

Invited Talk: Terry Sejnowski (1:30-2:15)  
 Learning from the Birds and Bees

Session 1 Part I: Attention and Learning in Social Systems (2:15-3:05)

Chair: Michael Arbib

- Explaining Eye Movements During Learning as an Active Sampling Process  
Jonathan Nelson, Gary Cottrell, Javier R. Movellan  
(2:15-2:40)
- Neural correlates of social referencing  
Leslie J. Carver  
(2:40-3:05)

Coffee Break: (3:05-3:25)

Session 1 Part II: Attention and Learning in Social Systems (3:25-5:05)

Chair: Michael Arbib

- Cumulative Learning of Hierarchical Skills  
Pat Langley, Seth Rogers  
(3:25-3:50)
- To Care or Not to Care: Analyzing the Caregiver in a Computational Gaze Following Framework  
Christof Teuscher, Jochen Triesch  
(3:50-4:15)
- Joint attention between a humanoid robot and users in imitation game  
Masato Ito, Jun Tani  
(4:15-4:40)
- Learning to manipulate objects: A quantitative evaluation of Motionese  
Katharina J. Rohlfing, Jannik Fritsch, Britta Wrede  
(4:40-5:05)

Neurocomputing Special Issue on Development and Learning (5:05-5:10)

**Organizer:** Gedeon Deák

**Location:** Auditorium

Reception / Poster Session A (5:05-7:00) \*See Last Pages\*

Day Two: Thursday October 21

Invited Talk: Dana Ballard (8:30-9:15)

On Learning in Embodied Systems

Session 2 Part I: Reinforcement and Neuromodulation (9:15-10:30)

Chair: Kenji Doya

- Learning by Imitation, Reinforcement and Verbal Rules in Problem Solving Tasks  
Frederic Dandurand, Melissa Bowen, Thomas R. Shultz  
(9:15-9:40)
- Caregivers and the Education of the Mirror System  
Patricia Zukow-Goldring, Michael Arbib  
(9:40-10:05)
- An Emergent Framework for Self-Motivation in Developmental Robotics  
James B. Marshall, Douglas Blank, Lisa Meeden  
(10:05-10:30)

Coffee Break: (10:30-10:50)

Session 2 Part II: Reinforcement and Neuromodulation (10:50-12:30)

Chair: Kenji Doya

- Intrinsically Motivated Learning of Hierarchical Collections of Skills  
Andrew G. Barto, Satinder Singh, Nuttapong Chentanez  
(10:50-11:15)

- An imaging study on human action selection using hierarchical rules  
Hidefumi Funakoshi, Wako Yoshida, Shin Ishii  
(11:15-11:40)
- MESO: Perceptual Memory to Support Online Learning in Adaptive Software  
E. P. Kasten, P. K. McKinley  
(11:40-12:05)
- Neuromodulation and open-ended development  
Kaplan, F., Oudeyer, P-Y.  
(12:05-12:30)

Lunch and Poster Preview (12:30-2:00)

Invited Talk: Jay McClelland (2:00-2:45)

A Complementary Learning Systems View of the Development of Causal and Conceptual Abilities

Session 3 Part I: Development of Language (2:45-3:35 )

Chair: Howard Poizner

- A Model of Frame and Verb Compliance in Language Acquisition  
Rutvik Desai  
(2:45-3:10)
- On-Line Cumulative Learning of Hierarchical Sparse n-grams  
Karl Pflieger  
(3:10-3:35)

Coffee Break: (3:35-3:55)

Session 3 Part II: Development of Language (3:55-5:10 )

Chair: Howard Poizner

- A Unified Model of Early Word Learning: Integrating Statistical and Social Cues  
Chen Yu, Dana H. Ballard  
(3:55-4:20)
- On Language and Age of Acquisition  
Arturo E. Hernandez  
(4:20-4:45)
- Developmental Stages of Perception and Language Acquisition in a Physically Grounded Robot  
Peter Ford Dominey, Jean-David Boucher  
(4:45-5:10)

ICDL 2004 Best Paper Award Ceremony (5:10-5:15)

MC: Tony Jebara.

Location: Auditorium

Reception / Poster Session B (5:10-7:00) \*See Last Pages\*

An Open Meeting: Preparing for the Future of ICDL (7:00-8:00)

Moderator: Juyang Weng

Location: Auditorium

Day Three: Friday October 22 (Focus Day)  
Plasticity, Development, and the Social Brain

Invited Talk: Eric Courchesne (8:30-9:15)  
Inside the Autistic Frontal Lobe

Session 4 Part I: Brain, Emotion, and Social Dynamics (9:15-10:05)  
Chair: Shoji Itakura

- Small-world Network Properties and the Emergence of Social Cognition: Evidence from Functional Studies of Autism  
Matthew K Belmonte, Simon Baron-Cohen  
(9:15-9:40)
- Social Dynamics: The Voice of Power and Influence  
Alex Pentland  
(9:40-10:05)

Coffee Break: (10:05-10:25)

Session 4 Part II: Brain, Emotion, and Social Dynamics (10:25-11:15)  
Chair: Shoji Itakura

- The emotional brain in autism : cerebral correlates of abnormal explicit processing of emotional information  
B. Wicker, B. Hubert, B. Gepner, C. Deruelle  
(10:25-10:50)
- Pathological brain growth patterns in Autism, and catastrophic interference in establishing long-distance connectivity  
John D. Lewis, Jeffrey L. Elman  
(10:50-11:15)

Invited Talk: Bill Greenough (11:15-12:00)  
The incredibly plastic brain: Most cell types are involved in developmental adaptation and learning

Lunch: (12:00-1:30)

Session 5 Part I: Perceptual Learning and Development (1:30-2:20)  
Chair: Joan Stiles

- Project PRAKASH: Development of object perception following long-term Visual deprivation  
Pawan Sinha  
(1:30-1:55)
- Four Blobs: "Y" or Face?  
Lingyun Zhang, Garrison W. Cottrell  
(1:55-2:20)

Invited Talk: Karen Dobkins (2:20 -3:05)

Enhanced Red/Green Color Input to Motion Processing in Infancy: Evidence for Increasing Dissociation of Color and Motion Information during Development

Coffee Break: (3:05-3:20)

Session 5 Part II: Perceptual Learning and Development (3:20-4:10)

Chair: Joan Stiles

- Using a Robot to Reexamine Looking Time Experiments  
Andrew Lovett, Brian Scassellati  
(3:20-3:45)
- Color perception in sensorimotor theory, or what do we really perceive?  
David Philipona, Kevin J. O'Regan, Olivier J. -M. D. Coenen  
(3:45-4:10)

Coffee Break: (4:10-4:25)

Session 6: Binding and Modularity (4:25-5:40 )

Chair: Douglas Nitz

- Cross-anchoring for binding tactile and visual sensations via unique association through self-perception  
Yuichiro Yoshikawa, Koh Hosoda, Minoru Asada  
(4:25-4:50)
- Object recognition, Adaptive Behavior and Learning in Brain-Based Devices  
Jeffrey L. Krichmar, Douglas A. Nitz, Gerald M. Edelman  
(4:50-5:15)
- Modularity and Specialized Learning: Reexamining Behavior-Based Artificial Intelligence  
Joanna J. Bryson  
(5:15-5:40)

Closing remarks (5:40)

Day Four: Saturday October 23

Torrey Pines Hike (8:30:10:00)

## POSTER SESSION A

**Social Robots**

1. Communicative behavior to the android robot in human infants  
Itakura, S., Kanaya, N., Shimada, M., Minato, T., Ishiguro, H.
2. Attention detection and manipulation between autonomous four-legged robots  
Kaplan, F., Hafner, V., Whyte, A
3. Can Robotic Brains be Social? Scientists Caught Back-peddling  
Colin T. Schmidt
4. Facial Expression in Social Interactions: Automatic Evaluation of Human-Robot Interaction  
G.C. Littlewort, M.S. Bartlett, I. Fasel, J. Chenu, T. Kanda, H. Ishiguro, J.R. Movellan
5. RUBI: A Robotic Platform for Real-time Social Interaction  
Bret Fortenberry, Joel Chenu, Javier R. Movellan
6. A Development Approach for Socially Interactive Humanoid Robot  
Takayuki Kanda, Hiroshi Ishiguro
7. Valerie the Roboceptionist: Designing Robots for Long-Term Social Interaction  
M. Michalowski, A. Bruce, J. Forlizzi, R. Gockley, A. Mundell, S. Rosenthal, A. Schultz, B. Sellner, R. Simmons, K. Snipes, J. Wang

**Social Systems**

8. Detecting Contingency Between Self and Other Triggers Social Behavior  
Yukie Nagai, Minoru Asada, Koh Hosoda
9. Cognitive foundations of conventions in social interaction  
Dale J. Barr
10. How children understand other's belief before they develop attentional flexibility?  
Yusuke Moriguchi, Shoji Itakura
11. Young children's understanding of perception and false belief: Hiding objects from others  
Manuel Sprung, Martin Doherty
12. Are you synching what I'm synching? Modeling infants' real-time detection of audiovisual contingencies between face and voice  
George Hollich, Eric J. Mislivec, Nathan A. Helder, Christopher G. Prince
13. Attention-sharing in human infants from 5 to 10 months of age in naturalistic conditions  
Gedeon Deak, Yuri Wakabayashi, Hector Jasso
14. Kinesthetic-visual matching and consciousness of self and other: How social minds are possible  
Robert W. Mitchell
15. Learning gaze following in space: a computational model  
Boris Lau, Jochen Triesch
16. Motion Recognition and Generation for Humanoid based on Visual-Somatic Field Mapping  
Masaki Ogino, Shigeo Matsuyama, Jun'ichiro Ooga, Minoru Asada
17. EEG dynamics during self-produced emotion feeling-states  
Julie Onton, Scott Makeig
18. Learning to Recognize and Reproduce Abstract Actions from Proprioception  
Karl F. MacDorman, Rawichote Chalodhorn, Hiroshi Ishiguro
19. Mu rhythm modulation during intentional and unintentional human and robot actions  
Shenk, L.M., Jacoby, B.P., McCleery, J.P., Ramachandran, V.S., Pineda, J.A.
20. The perception of direct gaze in human infants  
Teresa Farroni, Mark H. Johnson, Gergely Csibra

## POSTER SESSION B

**Perceptual Learning and Development**

1. Development of emotional facial processing: Event-related brain potentials to happy and angry facial expressions in 7-month-old infants and adults.  
Tobias Grossmann, Tricia Striano
2. An explanation of complex cell development by information separation.  
Akira Date, Koji Kurata
3. Information maximization in face processing.  
Marian Stewart Bartlett, Javier R. Movellan
4. Finding People by Contingency: An Infomax Controller Approach.  
Javier R. Movellan
5. Texture Segmentation in 2D vs. 3D: Did 3D Developmentally Precede 2D?  
Sejong Oh, Yoonsuck Choe

**Developmental Disorders**

6. Development of face processing in autism: A look into spatial frequencies and the inversion effect  
C. Deruelle, C. Rondan, B. Wicker
7. A toy-like robot in the playroom for children with developmental disorder.  
Hideki Kozima, Cocoro Nakagawa, Yuri Yasuda, Daisuke Kosugi
8. Comparing emotional expressions using eyes or mouths: a perceptual advantage in autism?  
A W Hendriks, P J Benson, M Jonkers, S Rietberg

**Learning and Development, Modeling, Algorithms and Architectures**

9. Cognitive Development in Context: Learning to Pay Attention  
Petra Bjorne, Christian Balkenius
10. Developmental Connectivity Schemes and Their Performance Implications.  
A. Felch, R.H. Granger
11. Modeling Cognitive Development in the Human Brain.  
L. Andrew Coward
12. Solving Complex Problems Using Hierarchically Stacked Neural Networks Modeled on Behavioral Developmental.  
Michael Lamport Commons, Myra Sturgeon White
13. Simulating Development in a Real Robot.  
Gabriel Gomez, Max Lungarella, Peter Eggenberger Hotz, Kojiro Matsushita, Rolf Pfeifer
14. A Theory of Developmental Architecture.  
Juyang Weng
15. Exact Inference in Robots Using Topographical Uncertainty Maps.  
Josh Susskind, John Hershey, Javier Movellan
16. A Virtual Reality Platform for Studying Cognitive Development.  
Hector Jasso, Jochen Triesch
17. Sparse Regression via the Winner-Take-All Networks.  
Nan Zhang, Shuqing Zeng, Juyang Weng
18. RobotCub: An Open Research Initiative in Embodied Cognition.  
G. Sandini, G. Metta, D. Vernon
19. Machine Emotional Intelligence: A Novel Method for Analysis of Spoken Affect.  
Irina Gorodnitsky, Claudia Lainscsek
20. Cross-Task Learning by a Developmental Robot  
Xiao Huang, Juyang Weng
21. Why do animals make their play more difficult?  
Stan Kuczaj