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Technical Program for Friday August 14, 2015

FrK	Salomon Hall
Keynote Lecture	
Chair: Serre, Thomas	Brown Univ.
09:00-10:00	FrK1
<i>The Developmental Neuromechanics of Primate Communication</i>	
Ghazanfar, Asif	Princeton Univ.
FrA1	Salomon Hall
Oral 1 (Regular Session)	
Chair: Deák, Gedeon	UCSD
10:30-10:50	FrA1.1
<i>A Neural Network Model of Curiosity-Driven Infant Categorization</i> , pp. 1-6.	
Twomey, Katherine	Lancaster Univ
Westermann, Gert	Lancaster Univ. UK
10:50-11:10	FrA1.2
<i>Bootstrapping Interactions with Objects from Raw Sensorimotor Data: A Novelty Search Based Approach</i> , pp. 7-12.	
Maestre, Carlos	Univ. Pierre Et Marie Curie
Cully, Antoine	Univ. Pierre Et Marie Curie (UPMC)
Gonzales, Christophe	Univ. Pierre Et Marie Curie
Doncieux, Stéphane	Pierre and Marie Curie Univ
11:10-11:30	FrA1.3
<i>Exploration Strategies for Incremental Learning of Object-Based Visual Saliency</i> , pp. 13-18.	
Craye, Céline	ENSTA Paristech
Filliat, David	ENSTA ParisTech
Goudou, Jean-François	Thales SIX Theresis
FrB1	Salomon Hall
Oral 2 (Regular Session)	
Chair: Nagai, Yukie	Osaka Univ
11:45-12:05	FrB1.1
<i>What Accounts for Developmental Shifts in Optic Flow Sensitivity?</i> , pp. 19-25.	
Gilmore, Rick	The Pennsylvania State Univ
Raudies, Florian	Boston Univ
Jayaraman, Swapnaa	Indiana Univ
12:05-12:25	FrB1.2
<i>Modeling Infant Visual Preference As Perceptual Oscillation</i> , pp. 26-32.	
Balas, Benjamin	North Dakota State Univ
Oakes, Lisa	Univ. of California, Davis
12:25-12:45	FrB1.3
<i>The Role of Contrast Sensitivity in the Development of Binocular Vision: Computational Study</i> , pp. 33-38.	
Priamikov, Alexander	Frankfurt Inst. for Advanced Studies
Narayan, Vikram	FIAS
Shi, Bertram Emil	Hong Kong Univ. of Science and Tech
Triesch, Jochen	Frankfurt Inst. for Advanced Studies

FrBB1	Salomon Hall
Babybot Challenge (Regular Session)	
Chair: Warlaumont, Anne S.	Univ. of California, Merced
Co-Chair: Schlesinger, Matthew	Southern Illinois Univ. Carbondale
14:45-16:30	FrBB1.1
<i>The Sequential Organization of Movement Is Critical to the Development of Reaching: A Neural Dynamics Account</i> , pp. 39-46.	
Zibner, Stephan Klaus Ulrich	Ruhr-Univ. Bochum
Tekülve, Jan	Ruhr-Univ. Bochum
Schöner, Gregor	Ruhr Univ. Bochum
14:45-16:30	FrBB1.2
<i>Babybot Challenge: Motor Skills</i> , pp. 47-54.	
Shaw, Patricia	Aberystwyth Univ
Lewkowicz, Daniel	Aberystwyth Univ
Giagos, Alexandros	Aberystwyth Univ
Law, James	The Univ. of Sheffield
Kumar, Suresh	Aberystwyth Univ
De Masson D'autume, Christian	Aberystwyth Univ
Lee, Mark	Univ. of Wales, Aberystwyth
Shen, Qiang	Aberystwyth Univ
14:45-16:30	FrBB1.3
<i>U-Shaped Motor Development Emerges from Goal Babbling with Intrinsic Motor Noise</i> , pp. 55-62.	
Narioka, Kenichi	Bielefeld Univ
Steil, Jochen J.	Bielefeld Univ
14:45-16:30	FrBB1.4
<i>Motor Experience Alters Action Perception through Predictive Learning of Sensorimotor Information</i> , pp. 63-69.	
Baraglia, Jimmy	Osaka Univ
Copete Vasco, Jorge Luis	Osaka Univ
Nagai, Yukie	Osaka Univ
Asada, Minoru	Osaka Univ
14:45-16:30	FrBB1.5
<i>Using Spatial Representations in Gesture to Facilitate Early Word Learning: A Priming Process Model</i> , pp. 70-77.	
Trafton, Greg	Naval Res. Lab
Harrison, Anthony	Naval Res. Lab
Lawson, Wallace	US Naval Res. Lab
FrPoster1	Sayles Hall
Poster 1 (Poster Session)	
17:30-18:30	FrPoster1.1
<i>Cross-Domain and Within-Domain Synaptic Maintenance for Autonomous Development of Visual Areas</i> , pp. 78-83.	
Guo, Qian	Fudan Univ
Wu, Xiaofeng	Fudan Univ
Weng, Juyang (John)	Michigan State Univ
17:30-18:30	FrPoster1.2
<i>Use of Speech and Motion Cues for Bootstrapping Complex Action Learning in Icub</i> , pp. 84-85.	
Ugur, Emre	Osaka Univ. Univ. of Innsbruck

Baraglia, Jimmy	Osaka Univ
Schillingmann, Lars	Osaka Univ
Nagai, Yukie	Osaka Univ
17:30-18:30	FrPoster1.3
<i>Effect of Exploratory Perturbation on the Formation of Kinematic Synergies in Goal Babbling</i> , pp. 86-91.	
Narioka, Kenichi	Bielefeld Univ
Reinhart, Rene Felix	Bielefeld Univ
Steil, Jochen J.	Bielefeld Univ
17:30-18:30	FrPoster1.4
<i>A Learning Model for Essentialist Concepts</i> , pp. 92-97.	
Oved, Iris	Univ. of California, San Diego
Nichols, Shaun	Univ. of Arizona
Barner, David	Univ. of California, San Diego
17:30-18:30	FrPoster1.5
<i>Active Maintenance of Binocular Correspondence Leads to Orientation Alignment of Visual Receptive Fields</i> , pp. 98-103.	
Chandrapala, Thusitha N.	Hong Kong Univ. of Science and Tech
Shi, Bertram Emil	Hong Kong Univ. of Science and Tech
Triesch, Jochen	Frankfurt Inst. for Advanced Studies
17:30-18:30	FrPoster1.6
<i>Mastering Human-Robot Interaction Control Techniques Using Chinese Tai Chi Chuan: Mutual Learning, Intention Detection, Impedance Adaptation, and Force Borrowing</i> , pp. 104-105.	
Wang, Ker-Jiun	Univ. of Pittsburgh
Sun, Mingui	Univ. of Pittsburgh
Zhang, Lan	Horace Greeley High School, Chappaqua, NY
Mao, Zhi-Hong	Univ. of Pittsburgh
17:30-18:30	FrPoster1.7
<i>Infants Gaze Pattern Analyzing Using Contrast Entropy Minimization</i> , pp. 106-111.	
Mahdi, Ali	Southern Illinois Univ. Carbondale
Schlesinger, Matthew	Southern Illinois Univ. Carbondale
Amso, Dima	Brown Univ
Qin, Jun	Southern Illinois Univ. Carbondale
17:30-18:30	FrPoster1.8
<i>To Hear and to Hold: Maternal Naming and Infant Object Exploration</i> , pp. 112-113.	
Chang, Lucas	Univ. of California, San Diego
deBarbaro, Kaya	Univ. of California, San Diego
Deák, Gedeon	UCSD
17:30-18:30	FrPoster1.9
<i>The Developing Sense of Agency: Implications from Cognitive Phenomenology</i> , pp. 114-115.	
Zaadnoordijk, Lorijn	Radboud Univ. Nijmegen, Donders Inst. for Brain, Cognit
Hunnius, Sabine	Radboud Univ. Nijmegen, Donders Inst. for Brain, Cognit
Meyer, Marlene	Radboud Univ. Nijmegen, Donders Inst. for Brain, Cognit
Kwisthout, Johan	Radboud Univ. Nijmegen, Donders Inst. for Brain, Cognit
van Rooij, Iris	Radboud Univ. Nijmegen, Donders Inst. for Brain, Cognit

17:30-18:30	FrPoster1.10
<i>Reinforcement Learning and Instance-Based Learning Approaches to Modeling Human Decision Making in a Prognostic Foraging Task</i> , pp. 116-122.	
Chelian, Suhas E.	HRL Lab. LLC
Paik, Jaehyon	LG Electronics
Pirolli, Peter	PARC Inst
Lebiere, Christian	Carnegie Mellon Univ
Bhattacharyya, Rajan	HRL Lab. LLC
17:30-18:30	FrPoster1.11
<i>Representations of Body Schemas for Infant Robot Development</i> , pp. 123-128.	
Shaw, Patricia	Aberystwyth Univ
Law, James	The Univ. of Sheffield
Lee, Mark	Univ. of Wales, Aberystwyth
17:30-18:30	FrPoster1.12
<i>Cross-Situational Noun and Adjective Learning in an Interactive Scenario</i> , pp. 129-134.	
Chen, Yuxin	ENSTA ParisTech - INRIA FLOWERS Team
Filliat, David	ENSTA ParisTech
17:30-18:30	FrPoster1.13
<i>Diversity-Driven Selection of Exploration Strategies in Multi-Armed Bandits</i> , pp. 135-142.	
Benureau, Fabien	Inria, Bordeaux Univ
Oudeyer, Pierre-Yves	Inria and Ensta ParisTech
17:30-18:30	FrPoster1.14
<i>The SB-ST Decomposition in the Study of Developmental Coordination Disorder</i> , pp. 143-149.	
Claudino, Leonardo	Univ. of Maryland at Coll. Park
Clark, Jane	Univ. of Maryland
Aloimonos, Yiannis	Univ. of Maryland
17:30-18:30	FrPoster1.15
<i>Robotic Framework with Multi-Modal Perception for Physio-Musical Interactive Therapy for Children with Autism</i> , pp. 150-151.	
Park, Chung Hyuk	New York Inst. of Tech
Jeon, Myoungsoon	Michigan Tech. Univ
Howard, Ayanna	Georgia Inst. of Tech
17:30-18:30	FrPoster1.16
<i>Developing Neural Networks with Neurons Competing for Survival</i> , pp. 152-153.	
Peng, Zhen	Max Planck Inst. for Biological Cybernetics
Braun, Daniel Alexander	Max Planck Inst. for Biological Cybernetics

Technical Program for Saturday August 15, 2015

SaK	Salomon Hall
Keynote Lecture	
Chair: Cangelosi, Angelo	Plymouth Univ.
09:00-10:00	SaK1
<i>How can I help you? Challenges in Designing, Implementing and Evaluating Companion Robots</i>	
Dautenhahn, Kerstin	Univ. of Hertfordshire
SaA1	Salomon Hall
Oral 3 (Regular Session)	
Chair: Rolf, Matthias	Osaka Univ
10:30-10:50	SaA1.1
<i>The Neural Dynamics of Goal-Directed Arm Movements: A Developmental Perspective</i> , pp. 154-161.	
Zibner, Stephan Klaus Ulrich	Ruhr-Univ. Bochum
Tekülve, Jan	Ruhr-Univ. Bochum
Schöner, Gregor	Ruhr Univ. Bochum
10:50-11:10	SaA1.2
<i>Do Infants' Gaze Sequences Predict Their Looking Time? Testing the Sequential-Learnability Model</i> , pp. 162-167.	
Schlesinger, Matthew	Southern Illinois Univ. Carbondale
Johnson, Scott	Univ. of California, Los Angeles
Amso, Dima	Brown Univ
11:10-11:30	SaA1.3
<i>Goal-Directed Learning of Hand-Eye Coordination in a Humanoid Robot</i> , pp. 168-175.	
Schmerling, Mathias	Bernstein Center Computational Neuroscience Berlin
Schillaci, Guido	Humboldt Univ. Zu Berlin
Hafner, Verena Vanessa	Humboldt-Univ. Zu Berlin
SaB1	Salomon Hall
Oral 4 (Regular Session)	
Chair: Spranger, Michael	Sony Computer Science Lab. Inc
11:45-12:05	SaB1.1
<i>Development of Compositional and Contextual Communication of Robots by Using the Multiple Timescales Dynamic Neural Network</i> , pp. 176-181.	
Park, Gibeom	KAIST
Tani, Jun	Professor, Department of Electrical Engineering, KAIST
12:05-12:25	SaB1.2
<i>When and Where Do Infants Follow Gaze?</i> , pp. 182-187.	
Deák, Gedeon	UCSD
12:25-12:45	SaB1.3
<i>Autonomous Development of Turn-Taking Behaviors in Agent Populations: A Computational Study</i> , pp. 188-195.	
Moulin-Frier, Clément	Univ. Pompeu Fabra
Sanchez Fibla, Marti	Univ. Pompeu Fabra (UPF)
Verschure, Paul	Catalan Inst. of Advanced Studies (ICREA), Foundation & Univ

SaC1	Salomon Hall
Oral 5 (Regular Session)	
Chair: Asada, Minoru	Osaka Univ
14:15-14:35	SaC1.1
<i>Incremental Grounded Language Learning in Robot-Robot Interactions - Examples from Spatial Language</i> , pp. 196-201.	
Spranger, Michael	Sony Computer Science Lab. Inc
14:35-14:55	SaC1.2
<i>The Effects of Learning and Retrieval Contexts on Cross-Situational Word Learning</i> , pp. 202-207.	
Chen, Chi-hsin	Indiana Univ
Yu, Chen	Indiana Univ
14:55-15:15	SaC1.3
<i>Seeing [u] Aids Vocal Learning: Babbling and Imitation of Vowels Using a 3D Vocal Tract Model, Reinforcement Learning, and Reservoir Computing</i> , pp. 208-213.	
Murakami, Max	Frankfurt Inst. for Advanced Studies
Kröger, Bernd J.	RWTH Aachen Univ
Birkholz, Peter	Univ. Hospital Aachen and RWTH Aachen Univ
Triesch, Jochen	Frankfurt Inst. for Advanced Studies
SaD1	Salomon Hall
Oral 6 (Regular Session)	
Chair: Moulin-Frier, Clément	Univ. Pompeu Fabra
15:30-15:50	SaD1.1
<i>Enhancing Agent Safety through Autonomous Environment Adaptation</i> , pp. 214-219.	
Rosman, Benjamin	CSIR
Hayes, Bradley	Yale Univ
Scassellati, Brian	Yale
15:50-16:10	SaD1.2
<i>Active Learning Strategies and Active Control of Complexity Growth in Naming Games</i> , pp. 220-227.	
Schueller, William	ENS De Lyon, INRIA & ENSTA ParisTech
Oudeyer, Pierre-Yves	Inria and Ensta ParisTech
16:10-16:30	SaD1.3
<i>Active Learning of Local Predictable Representations with Artificial Curiosity</i> , pp. 228-233.	
Lefort, Mathieu Thomas Sylvain	ENSTA UIIS - INRIA Flowers
Gepperth, Alexander R.T.	ENSTA ParisTech
SaPoster1	Sayles Hall
Poster 2 (Poster Session)	
17:30-18:30	SaPoster1.1
<i>Towards Hierarchical Curiosity-Driven Exploration of Sensorimotor Models</i> , pp. 234-235.	
Forestier, Sébastien	Inria and ENS Rennes
Oudeyer, Pierre-Yves	Inria and Ensta ParisTech
17:30-18:30	SaPoster1.2
<i>The Dynamics of Idealized Attention in Complex Learning Environments</i> , pp.	

236-241.	Pelz, Madeline	Univ. of Rochester
	Piantadosi, Steven	Univ. of Rochester
	Kidd, Celeste	Univ. of Rochester
17:30-18:30		SaPoster1.3
<i>A Generative-Discriminative Learning Model for Noisy Information Fusion</i> , pp. 242-247.		
	Gepperth, Alexander R.T.	ENSTA ParisTech
	Hecht, Thomas	ENSTA ParisTech
17:30-18:30		SaPoster1.4
<i>COSMO, a Bayesian Computational Model of Speech Communication: Assessing the Role of Sensory vs. Motor Knowledge in Speech Perception</i> , pp. 248-249.		
	Barnaud, Marie-Lou	GIPSA-LAB
	Diard, Julien	Univ. Pierre-Mendès-France -- CNRS
	Bessière, Pierre	CNRS
	Schwartz, Jean-Luc	GIPSA-LAB
17:30-18:30		SaPoster1.5
<i>A Neurorobotic Model of Learning to Shake a Rattle</i> , pp. 250-251.		
	Yeh, Forrest	Univ. of California, Merced
	Warlaumont, Anne S.	Univ. of California, Merced
	Chen, YangQuan	Univ. of California, Merced
	Shea, Timothy M.	Univ. of California, Merced
	Stark, Brandon	MESA Lab, UC Merced
17:30-18:30		SaPoster1.6
<i>Learning to Pick up Objects through Active Exploration*</i> , pp. 252-253.		
	Oberlin, John	Brown Univ
	Tellex, Stefanie	Brown
17:30-18:30		SaPoster1.7
<i>Which Criteria for Autonomously Shifting between Goal-Directed and Habitual Behaviors in Robots?</i> , pp. 254-260		
	Renaudo, Erwan	Inst. Des Systèmes Intelligents Et De Robotique, UPMC
	Girard, Benoit	Cnrs / Upmc
	Chatila, Raja	ISIR
	Khamassi, Mehdi	Inst. Des Systèmes Intelligents Et De Robotique, UPMC
17:30-18:30		SaPoster1.8
<i>Biological and Simulated Neuronal Networks Show Similar Competence on a Visual Tracking Task</i> , pp. 261-266.		
	Shultz, Abraham	Univ. of Massachusetts Lowell
	Lee, Sangmook	Univ. of Massachusetts Lowell
	Shea, Thomas	Univ. of Massachusetts Lowell
	Yanco, Holly	UMass Lowell
17:30-18:30		SaPoster1.9
<i>Comparison of Absolute and Relative Learning Strategies to Encode Sensorimotor Transformations in Tool-Use</i> , pp. 267-268.		
	Braud, Raphaël	CNRS UMR 8051, ENSEA, Cergy-Pontoise Univ
	Pitti, Alexandre	Univ. of Cergy Pontoise
	Gaussier, Philippe	CNRS UMR 8051, ENSEA, Cergy-Pontoise Univ
17:30-18:30		SaPoster1.10
<i>Biologically Inspired Incremental Learning for High-Dimensional Spaces</i> , pp. 269-275.		

Gepperth, Alexander R.T. Lefort, Mathieu Thomas Sylvain	Honda Res. Inst. Europe GmbH ENSTA UIIS - INRIA Flowers
17:30-18:30	SaPoster1.11
<i>Grounding Object Perception in a Naive Agent's Sensorimotor Experience</i> , pp. 276-282.	
Laflaquière, Alban Hemion, Nikolas	AI Lab, Aldebaran Aldebaran Robotics
17:30-18:30	SaPoster1.12
<i>First Steps towards the Development of the Sense of Object Permanence in Robots</i> , pp. 283-285.	
Bechtle, Sarah Schillaci, Guido Hafner, Verena Vanessa	Bernstein Center for Computational Neuroscience Humboldt Univ. Zu Berlin Humboldt-Univ. Zu Berlin
17:30-18:30	SaPoster1.13
<i>Adaptive Joint Trajectory Generator Based on a Chaotic Recurrent Neural Network</i> , pp. 285-290.	
Folgheraiter, Michele Tazhigaliyeva, Nazgul Niyetkaliyev, Aibek	Nazarbayev Univ Nazarbayev Univ Nazarbayev Univ
17:30-18:30	SaPoster1.14
<i>A Biologically Inspired Approach to Learning Spatio-Temporal Patterns</i> , pp. 291-297.	
Rekabdar, Banafsheh Nicolescu, Monica Nicolescu, Mircea Kelley, Richard	Univ. of Nevada Reno Univ. of Nevada, Reno Univ. of Nevada, Reno Univ. of Nevada
17:30-18:30	SaPoster1.15
<i>A Bayesian Approach towards Affordance Learning in Artificial Agents</i> , pp. 298-299.	
Stramandinoli, Francesca Tikhonoff, Vadim Pattacini, Ugo Nori, Francesco	Istituto Italiano Di Tecnologia Italian Inst. of Tech Istituto Italiano Di Tecnologia Istituto Italiano Di Tecnologia
17:30-18:30	SaPoster1.16
<i>Cognitive Robotics for the Modelling of Cognitive Dysfunctions: A Study on Unilateral Spatial Neglect</i> , pp. 300-301.	
Conti, Daniela Di Nuovo, Santo Di Nuovo, Alessandro	Univ. of Catania Univ. of Catania Plymouth Univ

Technical Program for Sunday August 16, 2015

SuK	Salomon Hall
Keynote Lecture	
Chair: Sobel, David	Brown Univ.
09:00-10:00	SuK1
<i>Riding the Wave: Event Processing as Predictability Monitoring</i>	
Baldwin, Dare	Univ. of Oregon
SuA1	Salomon Hall
Oral 7 (Regular Session)	
Chair: Warlaumont, Anne S.	Univ. of California, Merced
10:30-10:50	SuA1.1
<i>Predictive Learning with Uncertainty Estimation for Modeling Infants' Cognitive Development with Caregivers: A Neurorobotics Experiment</i> , pp. 302-307.	
Murata, Shingo	Waseda Univ
Tomioka, Saki	Waseda Univ
Nakajo, Ryoichi	Waseda Univ
Yamada, Tatsuro	Waseda Univ
Arie, Hiroaki	Waseda Univ
Ogata, Tetsuya	Waseda Univ
Sugano, Shigeki	Waseda Univ
10:50-11:10	SuA1.2
<i>The Development of Cooperation in Evolving Populations through Social Importance</i> , pp. 308-313.	
Sequeira, Pedro	INESC-ID / Inst. Superior Técnico, Univ. of Lisbon
Mascarenhas, Samuel	INESC-ID / Inst. Superior Técnico, Univ. of Lisbon
Melo, Francisco S.	Inst. Superior Tecnico
Paiva, Ana	INESC-ID and Inst. Superior Técnico, Tech. Univ. Of
11:10-11:30	SuA1.3
<i>Designing a Socially Assistive Robot for Personalized Number Concepts Learning in Preschool Children</i> , pp. 314-319.	
Clabaugh, Caitlyn	Univ. of Southern California
Ragusa, Gisele	Univ. of Southern California
Sha, Fei	Univ. of Southern California
Mataric, Maja	Univ. of Southern California
SuB1	Salomon Hall
Oral 8 (Regular Session)	
Chair: Rosman, Benjamin	CSIR
11:45-12:05	SuB1.1
<i>A Deep Learning Neural Network for Number Cognition: A Bi-Cultural Study with the Icub</i> , pp. 320-325.	
Di Nuovo, Alessandro	Plymouth Univ
De La Cruz, Vivian M.	Univ. of Catania
Cangelosi, Angelo	Univ. of Plymouth
12:05-12:25	SuB1.2
<i>Acquisition of Viewpoint Representation in Imitative Learning from Own</i>	

Sensory-Motor Experiences, pp. 326-331.

Nakajo, Ryoichi

Waseda Univ

Murata, Shingo

Waseda Univ

Arie, Hiroaki

Waseda Univ

Ogata, Tetsuya

Waseda Univ

12:25-12:45

SuB1.3

What Are Goals? and If So, How Many?, pp. 332-339.

Rolf, Matthias

Osaka Univ

Asada, Minoru

Osaka Univ