

Week-Long Poster Program

Tuesday	
The evolution of pain	Alberto Acerbi, Domenico Parisi
Cell Tracking, genesis and epigenesis in an artificial organism	Alessandro Fontana
Stepwise Transition from Direct Encoding to Artificial Ontogeny in Neuroevolution	Benjamin Inden
Genotype Reuse More Important than Genotype Size in Evolvability of Embodied Neural Networks	Chad Seys, Randall Beer
Simulations of simulations in evolutionary robotics	Edgar Bermudez Contreras, Anil K. Seth
A Computational Morphogenesis Approach to Simple Structure Development	Enrique Fernández-Blanco, Julián Dorado, Juan R. Rabuñal, Marcos Gestal, Nieves Pedreira
Minimal Agency Detection of Embodied Agents	Hiroyuki Iizuka, Ezequiel Di Paolo
Controlling an Anthropomorphic Robot: A Preliminary Investigation	Hugo Marques, Richard Newcombe, Owen Holland
Self-organizing acoustic categories in sensor arrays	Iván Escobar, Erika Vilches, Edgar E. Vallejo, Martin L. Cody, Charles E. Taylor
Measuring Entropy in Embodied Neural Agents with Homeostatic Units: A Link between Complexity and Cybernetics	Jorge Simão
Neural Uncertainty and Sensorimotor Robustness	Jose A. Fernandez-Leon, Ezequiel A. Di Paolo
Formal Model of Embodiment on Abstract Systems: from Hierarchy to Heterarchy	Kohei Nakajima, Soya Shinkai, Takashi Ikegami
A Behavior-Based Model of the Hydra, Phylum Cnidaria	Malin Aktius, Mats Nordahl, Tom Ziemke
Adaptation to Sensory Delays. An Evolutionary Robotics Model of an Empirical Study	Marieke Rohde, Ezequiel Di Paolo
Transients of Active Tracking: a stroll in attractor spaces	Mario Negrello, Frank Pasemann
Evolution and Learning in an Intrinsically Motivated Reinforcement Learning Robot	Massimiliano Schembri, Marco Mirolli, Gianluca Baldassarre
Constructing the Basic Umwelt of Artificial Agents: An Information-Theoretic Approach	Philippe Capdepuy, Daniel Polani, Chrystopher Nehaniv
Grounding Action-Selection in Event-Based Anticipation	Philippe Capdepuy, Daniel Polani, Chrystopher Nehaniv
Embodied evolution and learning: The neglected timing of maturation	Steffen Wischmann, Kristin Stamm, Florentin Woergetter
Category Theoretical Distinction between Autopoiesis and (M,R) Systems	Tatsuya Nomura
Autonomy: a review and a reappraisal	Tom Froese, Nathaniel Virgo, Eduardo Izquierdo
Re-examination of Swimming Motion of Virtually Evolved Creature Based on Fluid Dynamics	Yoshiyuki Usami

Wednesday

Building Virtual Ecosystems from Artificial Chemistry	Alan Dorin, Kevin Korb
Designing a Methodology to Estimate Complexity of Protein Structures	Alejandro Balbin, Eugenio Andrade
Neutral Emergence and Coarse Graining	Andrew Weeks, Susan Stepney, Fiona Polack
Semi-Synchronous Activation in Scale-Free Boolean Networks	Christian Darabos, Mario Giacobini, Marco Tomassini
An Analysis of the Effects of Lifetime Learning on Population Fitness and Diversity in an NK fitness landscape	Dara Curran, Colm O'Riordan, Humphrey Sorensen
The Creativity Potential within Evolutionary Algorithms	David Iclanzan
Variance in Water Temperature as a factor in the modelling of Starfish and Mussel population density and diversity	David White
The application of the idea of Extended Cellular Automata for some pedestrian behaviours	Ewa Dudek-Dyduch, Jaroslaw Was, Bartlomiej Gudowski
Folding Protein-Like Structures with Open L-systems	Gemma Danks, Susan Stepney, Leo Caves
Artificial ecosystem selection for evolutionary optimisation	Hywel Williams, Tim Lenton
Energy Flows and Maximum Power on an Evolutionary Ecological Network Model	Jiang Zhang
Detecting non-trivial computation in complex dynamics	Joseph Lizier, Mikhail Prokopenko, Albert Zomaya
MBEANN: Mutation-Based Evolving Artificial Neural Networks	Kazuhiro Ohkura, Toshiyuki Yasuda, Yuichi Kawamatsu, Yoshiyuki Matsumura, Kanji Ueda
Asynchronous Graph-rewriting Automata and Simulation of Synchronous Execution	Kohji Tomita, Satoshi Murata, Haruhisa Kurokawa
Genotype Editing and the Evolution of Regulation and Memory	Luis M Rocha, Jasleen Kaur
Emergence of Genetic Coding: an Information-theoretic Model	Mahendra Piraveenan, Daniel Polani, Mikhail Prokopenko
Wavelet Network with Hybrid Algorithm to Linearize High Power Amplifiers	Nibaldo Rodriguez, Claudio Cubillos
Preliminary Investigations on the Evolvability of a Non-Spatial GasNet Model	Patricia A. Vargas, Ezequiel A. Di Paolo, Phil Husbands
Chemical Organizations at Different Spatial Scales	Pietro Speroni di Fenizio, Peter Dittrich
The Problems With Counting Ancestors in a Simple Genetic Algorithm	Robert Collier, Mark Wineberg

Thursday

A Mechanism to Self-Assemble Patterns with Autonomous Robots	Anders Lyhne Christensen, Rehan O'Grady, Marco Dorigo
From the Outside-In: Embodied Attention in Toddlers	Carlos Delgado Mata, Ruth Aylett
EcoPS - a Model of Group-Foraging with Particle Swarm Systems	Cecilia Di Chio, Paolo Di Chio
Evolving Cultural Learning Parameters in an NK Fitness Landscape	Dara Curran, Colm O'Riordan, Humphrey Sorensen
Directed Evolution of Communication and Cooperation in Digital Organisms	David Knoester, Philip McKinley, Benjamin Beckmann, Charles Ofria
From artificial societies to new social science theory	Eric Silverman, John Bryden
Neuro-Evolution Methods for Designing Emergent Specialization	Geoff Nitschke
A distributed formation algorithm to organize agents with no coordinate agreement	Gregory Studer, Inman Harvey
How does niche construction reverse the Baldwin effect?	Hajime Yamauchi
Decentralized Control and Interactive Design Methods for Large-Scale Heterogeneous Self-Organizing Swarms	Hiroki Sayama
Evolution of cooperation in a population of selfish adaptive agents	Jorge M. Pacheco, Tom Lenaerts, Francisco C. Santos
Modeling Decentralized Organizational Change in Honeybee Societies	Mark Hoogendoorn, Martijn Schut, Jan Treur
Social Impact Theory based Optimizer	Martin Macas, Lenka Lhotska
Protolanguages that are Semi-Holophrastic	Mike Dowman
Institutional Robotics	Porfirio Silva, Pedro Lima
Investigating the Evolution of Cooperative Behaviour in a Minimally Spatial Model	Simon Powers, Richard Watson
Modelling the Effects of Colony Age on the Foraging Behaviour of Harvester Ants	Tom Diethel, Peter Bentley
Improving Search Efficiency in the Action Space of an Instance-Based Reinforcement Learning Technique for Multi-Robot Systems	Toshiyuki Yasuda, Kazuhiro Ohkura
Language Learning Dynamics: Coexistence and Selection of Grammars	Valery Tereshko
Binocular Vision-Based Robot Control with Active Hand-Eye Coordination	Wen-Chung Chang

Friday

Hermeneutic Resonance in Animats and Art	Alasdair Turner
Self-organizing Systems Based on Bio-inspired Properties	André Stauffer, Daniel Mange, Joël Rossier
Turing Complete Catalytic Particle Computers	Anthony M.L. Liekens, Chrisantha T. Fernando
Evolution of an Adaptive Sleep Response in Digital Organisms	Benjamin Beckmann, Philip McKinley, Charles Ofria
Where did I put my glasses? Determining trustfulness of records in episodic memory by means of an associative network	Cyril Brom, Klara Peskova, Jiri Lukavsky
Neuroevolution of Agents Capable of Reactive and Deliberative Behaviours in Novel and Dynamic Environments	Edward Robinson, Timothy Ellis, Alastair Channon
Catalysis by Self-Assembled Structures in Emergent Reaction Networks	Gianluca Gazzola, Andrew Buchanan, Norman Packard, Mark Bedau
Emergent Phenomena only belong to Biology	Hugues Bersini, Christophe Philemotte
On the Adaptive Disadvantage of Lamarckianism in Rapidly Changing Environments	Ingo Paenke, Bernhard Sendhoff, Jon Rowe, Chrisantha Fernando
Artificial Emotions: Are we ready for them?	Jackeline Freitas, João Queiroz
Investigating the Emergence of Phenotypic Plasticity in Evolving Digital Organisms	Jeff Clune, Charles Ofria, Robert T. Pennock
Construction of Hypercycles in Typogenetics with Evolutionary Algorithms	Kyubum Wee, Chohwa Gwak
A Signal Based Approach to Artificial Agent Modeling	Luís Morgado, Graça Gaspar
Robotic Superstrings Installation: A-Life Science & Art	Mauro Francaviglia, Marcella G. Lorenzi, Michael Petry
Symbiosis, Synergy and Modularity: Introducing the Reciprocal Synergy Symbiosis Algorithm	Rob Mills, Richard A. Watson
ALife and Pecking: Applying the Comparative Cognitive Robotics Framework to Chicken Intelligence	Roul Sebastian John, Ulas Türkmen, Radomir Zugic, Christian W. Werner
Aging in Artificial Learning Systems	Sarunas Raudys
Plazmid: An evolutionary agent-based architecture inspired by bacteria and bees	Susan Stepney, Tim Clarke, Peter Young
Simulation of the evolution of aging: effects of aggression and kin-recognition	Svetlana Krivenko, Mikhail Burtsev
Designing for Surprise	Telmo Menezes, Ernesto Costa
Program Evolvability under Environmental Variations and Neutrality	Tina Yu