FROM ANIMALS TO ANIMATS 16: The 16th International Conference on the Simulation of Adaptive Behavior (SAB2022)

20-23 Septembre 2022 Cergy-Pontoise (France) & Online

https://sab2022.sciencesconf.org

PROGRAM

20 September 2022: Tutorials

9h00 – 12h00, Tutorial 1: "Design Principles for Neurorobotics", Jeffrey L. Krichmar, Department of Cognitive Sciences, University of California, Irvine, USA.

12h00 – 13h45 Lunch

13h45 – 15h45, Tutorial 2: "Introduction to Soft Robotics", Alex Pitti, ETIS – CYU, ENSEA, CNRS UMR 8051

16h00 – 18h00, Tutorial 3: "Simulation of Large-Scale Neural Networks with Online Learning and Real-Time Constraints: Promethé, 30 Years of NN Development for Animat Control", Philippe Gaussier, ETIS – CYU, ENSEA, CNRS UMR 8051

21 September 2022:

8h15 – 8h55: Registration
8h55 – 9h: Welcome (*Philippe Gaussier, Lola Cañamero*)

- *Session 1: Collective Intelligence I (Chair: Guy Theraulaz)*

9h00 - 9h40: Guy Theraulaz, "The collective intelligence of superorganisms"
9h45 - 10h25: Heiko Hamann, "Opportunities of Bio-hybrid Systems with Natural Plants: Shaping and Sensing"
10h30 – 10h50: Antoine Sion, Andreagiovanni Reina, Mauro Birattari, Elio Tuci, "Impact of the Update Time on the Aggregation of Robotic Swarms through Informed Robots" (contributed paper)

10h 50 – 11h10: Coffee break

- *Session 1: Collective Intelligence II (Chair: Guy Theraulaz)*

11h10 - 11h50: Sabine Hauert, "Swarms for people"
11h55 - 12h35: Elio Tucci, "Heterogeneity in swarm robotics as a tool to generate desired collective responses"

12h35 – 14h : lunch

- *Session 2: Affective and social cognition and interaction I (Chair: Lola Cañamero)*

14h00 - 14h40: Jeff Krichmar, "Neuromodulation and Behavioral Trade-Offs"
14h45 - 15h25: Christian Balkenius, "Can robots have empathy?"

- *Poster Spotlights session (15h30 - 15h55)*

15h55 – 16h30: Coffee break & Posters

- *Session 2: Affective and social cognition and interaction II (Chair: Lola Cañamero)*

16h30 - 17h10: Kerstin Dautenhahn, "Interaction Studies with Social Robots"
17h15 - 17h55: AJung Moon, "The road to designing interactive robots with ethics in mind"

22 September 2022:

8h45: Registration

- *Session 3: Bio-inspired Vision I (Chair Jochen Triesch)*

9h00 - 9h40: Jochen Triesch, "Self-calibration of active vision: from brains to robots"
9h45 - 10h25: Jenny Read, "Stereoscopically sensitive behaviour without correspondence"

10h 25 – 10h45: Coffee break

- *Session 3: Bio-Inspired Vision II (Chair Jochen Triesch)*

10h45 – 11h25: Benoit Cottereau, "Emergence of motion and depth selectivity in primate
visual cortex through experience-driven plasticity"
11h30 – 12h10: Stéphane Viollet, "From insects to robots and vice versa"

12h10 – 14h: lunch

- *Session 4: Embodiment (Chair: Alexandre Pitti)*

14h – 14h40: Josh Bongard, "From rigid to soft to biological robots"
14h45 – 15h05: Felix Woolford and Matthew Egbert, "Investigating a Minimal Categorical
Perception Task with a Node-Based Sensorimotor Map" (contributed paper)
15h10 – 15h30: Nopparada Mingchinda, Vatsanai Jaiton, Binggwong Leung, Poramate
Manoonpong, "Neural Body Bending Control with Temporal Delays for Millipede-Like
Turning Behaviour of a Multi-Segmented, Legged Robot" (contributed paper)

15h30 – 16h10: Coffee break & Posters

- *SAB steering committee meeting: 16h15 – 17h15*

17h55 – 23h30: Social Event & Diner (Chateau d'Auvers-sur-Oise)

23 September 2022:

8h45: Registration

- *Session 5: Brain-Inspired Control Architectures for Adaptation, and Learning I (Chair: Mehdi Khamassi)*

9h00 - 9h40: Tony Prescott, "Understanding the layered architecture of the mammalian brain
through robotics"

9h45 – 10h05: Trond Tjøstheim, Birger Johansson, Christian Balkenius, "Adaptive Inhibition for Optimal Energy Consumption by Animals, Robots and Neurocomputers" (contributed paper)

10h10 – 10h30: Nathan Trouvain, Nicolas Rougier, Xavier Hinaut, "Create Efficient and Complex Reservoir Computing Architectures with ReservoirPy" (contributed paper)

10h30 – 11h: Coffee Break

- *Session 5: Brain-Inspired Control Architectures for Adaptation, and Learning II (Chair: Mehdi Khamassi)*

11h05 – 11h25: Manuel Baum, Lukas Schattenhofer, Theresa Rössler, Antonio Osuna Mascaró, Alice Auersperg, Alex Kacelnik, Oliver Brock, "Yoking-Based Identification of Learning Behavior in Artificial and Biological Agents" (contributed paper)

11h30 – 12h10: Mehdi Khamassi, "Some applications of the model-based / model-free reinforcement learning framework to Neuroscience and Robotics"

12h10 – 14h: lunch

- *Session 6: Bio-Inspired Navigation I (Chair: Francesca Sargolini)*

14h00 – 14h40: Andy Philippides, "Ants and robots: Insect-inspired visual navigation"

14h45 – 15h25: Francesca Sargolini, "Grid cells and spatial navigation"

15h25 – 16h00: Coffee break

- *Session 6: Bio-Inspired Navigation II (Chair: Francesca Sargolini)*

16h00 – 16h40: Caswell Barry, "Plus ça Change - homeostasis and visually driven transitions in place cells"

16h45 – 17h25: Denis Sheynichovich, "A panoramic visual representation in the parietal-medial temporal pathway and its role in spatial and non-spatial behaviors"

17h30 – 17h50: Jeff Krichmar, Nicholas Ketz, Praveen Pilly, Andrea Soltoggio, "Flexible Path Planning in a Spiking Model of Replay and Vicarious Trial and Error" (contributed paper)

- *Final discussion and wrap-up (17h50 – 18h15)*

POSTERS:

- Jinwei Xing, Xinyun Zou, Praveen Pilly, Nicholas Ketz, Jeffrey Krichmar. Adapting to Environment Changes through Neuromodulation of Reinforcement Learning
- Jose A Fernandez Leon, Marcelo Arlego, Gerardo Acosta. Is free energy an organizational principle in spiking neural networks?
- Jianyong Xue, Frédéric Alexandre. Multi-task learning with modular reinforcement learning.
- Mingda Ju, Philippe Gaussier. Contribution of the retrosplenial cortex to path integration signatures and spatial codes
- Pablo J. Salazar, Tony J. Prescott. Deep Gaussian Processes for Angle and Position Discrimination in Active Touch Sensing
- Tristan Gillard, Jérémy Fix, Alain Dutech. Exploring sensitization in the context of extending the behavior of an artificial agent

- Vincent Rist, Manfred Hild. How to Design Morphologies. A Design Process for Autonomous Robots.
- Cyr André, Frédéric Thériault. Same/different concept: an embodied spiking neural model in a learning context
- Sylvain Colomer, Nicolas Cuperlier, Guillaume Bresson, Olivier Romain. Sparse and topological coding for visual localisation of autonomous vehicles
- Elpida Tzafestas. On the Adaptive Value of Mood and Mood Contagion