

## WIVACE 2024

### XVIII International Workshop on Artificial Life and Evolutionary Computation Namur, Belgium, 11-13 September 2024

**Venue:** Espace Amphithéâtre Pedro Arrupe (PA02), Rue de Bruxelles 5000, University of Namur, Namur

#### DAY 1 – Wednesday 11-9-2024

8:00 - 9:00	Registration
9:00 - 9:30	Welcome by T. Carletti + 1 minute poster presentation
9:30 - 10:30	1 <sup>st</sup> keynote speaker Dr Monika Scholz – Introduced by E. Tuci
Coffee break	
First session – Session chair A. Sion	
11:00 - 11:20	<b>Paper 8</b> - <i>Chemotactic swarming of C. elegans as a collective decision-making process</i> , N. Antonic, A. Vellinger, E. Tuci
11:20 - 11:40	<b>Paper 16</b> - <i>A General Framework to Agent-Based Modelling Techniques in Translational Systems Biology</i> , R. Bournes, R. Bauer, M. Chambers, B. Guo, S. Hingley-Wilson
11:40 - 12:00	<b>Paper 14</b> - <i>Using pseudo-attractors of genetic regulatory networks to analyze biological data</i> , G. D'Addese, C. Crovetti, R. Serra, M. Villani
12:00 - 12:20	<b>Paper 1</b> - <i>The influence of finite diffusion rates on protocell synchronization</i> , M. Villani, R. Serra
12:20 - 12:40	<b>Paper 10</b> - <i>Steps to chemically embodied cognition</i> , S. Rubin, P. Stano, A. Roli, L. Damiano
Lunch	
Second session – Session chair J-F. de KEMMETER	
14:00 - 14:20	<b>Paper 33</b> - <i>Latent agency: A proto-cognitive property of autonomous systems</i> , F. Rodriguez, P. Husbands
14:20 - 14:40	<b>Paper 36</b> - <i>Educational Robotics: from Computational to Complexity Thinking</i> , O. Gigliotta, M. Ponticorvo, E. Chinzer, D. Giorgini, A. Vitanza
14:40 - 15:00	<b>Paper 38</b> - <i>An Ecological Model of Cancer Development and Control</i> , E. Tzafestas
15:00 - 15:20	<b>Paper 4</b> - <i>Gossip: Perspective Taking to Establish Cooperation</i> , S. Righi, K. Takács
15:20 - 15:40	<b>Paper 5</b> - <i>Analysing Opinion Dynamics via a Cognitive Model of Structured Beliefs</i> , E. Michaelidou, E. Ioannou, K. Tapper, B.D. Goddard, G.R. Moreno
Coffee break – with Poster session	

	<p><b>Paper 11</b> - <i>A Comparative Study on Decision-Making Mechanisms in a Site Selection Task</i>, A. Almansoori, D. Trendafilov, M. Alkilabi, E. Tuci</p> <p><b>Paper 17</b> - <i>Costs of Information Gathering Strategies and Their Impact on Animal Dispersal</i>, A. Sion, M. Marcantonio, S. Masier, E. Tuci</p> <p><b>Paper 18</b> - <i>Optimal UAVs deployment for traffic network observability</i>, J. Pietquin, A. Mauroy</p> <p><b>Paper 22</b> - <i>Enhancing categorical variable management in a genetic algorithm</i>, S. Pool Marquez, A Sartenaer, C. Beauthier, R. F. Coelho, C. Sainvitu</p> <p><b>Paper 26</b> - <i>Pose Estimation for Grasping Transparent Objects in Industrial Applications</i>, M. Alkilabi, E. Tuci, B. Potier, G. Reichling</p> <p><b>Paper 30</b> - <i>Detecting evolutionary bias in the decision-making of robotic swarms</i>, D. Trendafilov, A. Almansoori, N. Bredeche, T. Carletti, E. Tuci</p> <p><b>Paper 37</b> - <i>Enhancing Data Clustering with the OpenAI-ES Algorithm</i>, P. Pagliuca, N. Milano, F. Palumbo, O. Gigliotta</p>
16:40 - 17:40	2 <sup>nd</sup> keynote speaker Prof Aldo Genovesio – Introduced by E. Tuci
19:30	Social dinner “Les Tanneurs” Rue des Tanneries 13, 5000 Namur, Belgium

DAY 2 – Thursday 12-9-2024

On day 2, the registration desk will be open from 8:00 am

9:00 - 10:00	3 <sup>rd</sup> keynote speaker Dr Yara Khaluf – Introduced by T. Carletti
	Third session – Session chair T. Njougouo
10:00 - 10:20	<b>Paper 25</b> - <i>Cross-inhibition prevents decision deadlocks in the presence of social noise</i> , R. Zakir, A. Reina, M. Dorigo
10:20 - 10:50	Coffee break
	Third session
10:50 - 11:10	<b>Paper 29</b> - <i>Towards the implementation of the response to synchronization in e-puck2 robots</i> , C. Tomaselli, G.M. Ramirez-Avila, L.V. Gambuzza, M. Frasca, E. Tuci, T. Carletti
11:10 - 11:30	<b>Paper 9</b> - <i>Factors Impacting Landscape Ruggedness in Control Problems: a Case Study</i> , M. El Saliby, E. Medvet, G Nadizar, E. Salvato, S.L. Thomson
11:30 - 11:50	<b>Paper 32</b> - <i>A UNITY Approach to swarmalator network systems</i> , C. Lambu, S. Kongni, P. Louodop
11:50 - 12:10	<b>Paper 31</b> - <i>Attractive –repulsive challenge in swarmalators dynamics with speed actualisation</i> , S.J. Kogni, T. Njougouo, P. Louodop, R. Tchitnga, H. Cerdeira
12:10 - 12:30	<b>Paper 6</b> - <i>Pinning control of chimera states on nonlocal hyperrings</i> , R. Muolo, L.V. Gambuzza, H. Nakao, M. Frasca
12:30-14:00	Lunch
	Fourth session – Session chair Aymeric Vellingier
14:00 - 14:20	<b>Paper 21</b> - <i>Empowerment-based prediction of swarm performance in collective perception</i> , D. Trendafilov. A. Almansoori, N. Bredeche, T. Carletti, E. Tuci
14:20 - 14:40	<b>Paper 24</b> - <i>Incorporating a green component into the design and development of evolutionary algorithms</i> , I. Fister, D. Novak, V. Podgorelec, I. Fister Jr.
14:40 - 15:00	<b>Paper 13</b> - <i>Mixed-variable surrogate-based optimization using affinity features to improve the distance for categorical variables</i> , C. Beauthier, R. F. Coelho, S.P. Marquez, C. Sainvitu, A. Sartenaer
15:00 - 15:20	<b>Paper 7</b> - <i>On when is Reservoir Computing with Cellular Automata Beneficial?</i> T.E. Glover, E. Osipov, S. Nichele
15:20 - 15:40	<b>Paper 28</b> - <i>Koopman Operator Analysis and Dynamic Mode Decomposition for Elementary Cellular Automata: a Brief Review</i> , K. Taga, Y. Yamazaki, H. Nakao
15:40 - 16:10	Coffee break

16:10 - 16:30	<b>Paper 23</b> - <i>Explainable Multi-label Classification for Predictive Maintenance</i> , A. Hubermont, A. vellinger, E. Tuci
16:30 - 17:30	4 <sup>th</sup> keynote speaker Prof Pietro Liò – Introduced by T. Carletti

DAY 3 – Friday 13-9-2024

On day 3, the registration desk will be open from 8:00 am

9:00 - 9:30	5 <sup>th</sup> keynote speaker Dawi Brunet – Introduced by T. Carletti
	Fifth session – session chair M. Moriamé
9:30 - 9:50	<b>Paper 3</b> - <i>Autonomous Traffic Management: Integrating Vissim Traffic Model with Swarm of Drone</i> , D. Alahvirdi, J. Pietquin, A. Mauroy, E. Tuci
9:50 - 10:10	<b>Paper 12</b> - <i>Emergent naming system in an unknown dynamic environment: Collective Perception scenario</i> , D.N.T. Hoang, N. Cambier
10:10 - 10:30	<b>Paper 19</b> - <i>Cooperation in Evolved Modular Soft Robots</i> , Paolo Baldini, M. Braccini, F. Benvenuti, E. Medvet, A. Roli, F. Rusin
10:30 - 11:00	Coffee break
	Sixth session – session chair D. Alahvirdi
11:00 - 11:20	<b>Paper 2</b> - <i>Emergent Dynamics in Heterogeneous Life-Like Cellular Automata</i> , A. Shrestha, F. Reimers, S. Jain, P. Baldini, M. Braccini, A. Roli, S. Nichele
11:20 - 11:50	<b>Paper 20</b> - <i>Energy-Aware Neural Architecture Search: Leveraging Genetic Algorithms for Optimising CNNGen</i> , A. Gratia, P. Temple, P-Y. Schobbens, G. Perrouin
11:50 - 12:10	<b>Paper 27</b> - <i>Tracking the Learning Behavior of a CNN</i> , C. Zaugg, R. Ingold, D. Trendafilov, A. Fischer
12:10 – 12:30	<b>Paper 15</b> - <i>Stability of Input Representations in Biological Neural Network Reservoirs</i> , T.A.E. Lindell, O.H. Ramstad, I. Sandvig, A. Sandvig, S. Nichele
12:30- 12:50	<b>Paper 34</b> - <i>A "Plug and Play" Table for Composable Molecular Neural Networks Built with DNA</i> , E.T. Collinson, H. Fellermann
12:50	Lunch
Conclusions, end of workshop	

The Espace Amphithéâtre Pedro Arrupe can be accessed from:

- 1) Rue Bruxelles, Faculty of Science, big gate entrance, and then through the building in front of the gate
- 2) Rue Grandgagnage, little street on the left coming from Rue Bruxelles, just before the Library
- 3) Rue Grafé, turning right just before the car park exit, coming from Rue Bruxelles

All three access points are signposted.

03/07/2024, 16:29

Espace Amphithéâtre Pedro Arrupe - Google Maps

