2025 IEEE Symposium on **Computational Intelligence in Artificial Life and Cooperative Intelligent Systems Companion** (ALIFE-CIS Companion 2025)

Trondheim, Norway 17-20 March 2025



IEEE Catalog Number: CFP258B3-POD

979-8-3315-0854-8

Copyright © 2025 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP258B3-POD

 ISBN (Print-On-Demand):
 979-8-3315-0854-8

 ISBN (Online):
 979-8-3315-0853-1

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400

Phone: (845) 758-0400 Fax: (845) 758-2633

E-mail: curran@proceedings.com Web: www.proceedings.com



Table of Contents

A transformer-based deep reinforcement learning approach to spatial navigation in a partially observable Morris Water Maze.....1

Marte Eggen (Norwegian University of Science and Technology)*; Inga Strumke (NTNU)

Impact of Communication Masking on Problem Solving in LLM Agent Networks.....6

Ilya Horiguchi (University of Tokyo, Department of General System Sciences)*;
Takashi Ikegami (University of Tokyo, Department of General System Sciences);
Michael Crosscombe (University of Tokyo, Department of General System Sciences)

The Evolution of Complex Attributes in a Species of Simulated Agents.....11

Jay Nash (Connecticut College); Gary Parker (Connecticut College)*; Jim O'Connor (Connecticut College)

Comparative Study of Decomposition and Merging Evolutionary Algorithms for Large-Scale Optimization Problems.....16

Zachary McGovarin (Brock University)*; Alanna McNulty (Brock University); Beatrice Ombuki-Berman (Brock University)

Applying Factored Evolutionary Algorithms to the B-Spline Knot Selection Problem....21

Eve Ginsberg (University of Virginia); Jordan Schupbach (Montana State University); John Sheppard (Montana State University)*; Nicholas Turk (Georgia Institute of Technology)

"I apologize for my actions": Emergent Properties and Technical Challenges of Generative Agents.....26

N'yoma Diamond (University of Cambridge); Soumya Banerjee (University of Cambridge)*

Learning Nonlinear Activation Functions in RL Through Evolutionary Computation.....31

Coen Nusse (VU Amsterdam); Jacob Kooi (VU Amsterdam)*

Analyzing the Dynamics and Structure of a Pandemic by Coupling Cellular Automata with an Algorithm for Neighborhood Generating.....36

Christina Klüver (CoBASC Research Group)*; Guido Fassbender (CoBASC Research Group)