

# IWAI 2021

September 13th, 2021 (*all times in CEST timezone*)

**9:30 Zoom session opens**

**9:45 - 10:00 Welcome**

**10:00 - 10:45 Keynote 1**

Zafeirios Fountas - *Deep active inference agents using Monte-Carlo methods*

**10:45 - 12:00 Presentations**

10:45 - 11:00 Aswin Paul, Noor Sajid, Manoj Gopalkrishnan and Adeel Razi - *Active Inference for Stochastic Control*

11:00 - 11:15 Mohamed Baioumy, Corrado Pezzato, Carlos Hernández Corbato, Nick Hawes and Riccardo Ferrari - *Towards Stochastic Fault-tolerant Control using Precision Learning and Active Inference*

11:15 - 11:30 Ajith Anil Meera and Martijn Wisse - *On the Convergence of DEM's Linear Parameter Estimator*

11:30 - 11:45 Nathaniel Virgo, Martin Biehl and Simon McGregor - *Interpreting Physical Systems as Bayesian Reasoners*

11:45 - 12:00 Tore Erdmann and Christoph Mathys - *Rule learning through active inductive inference*

**12:00 - 13:00 Lunch break**

**13:00 - 14:00 Poster session**

Peter Thestrup Waade, Nace Mikus and Christoph Mathys - *Inferring in Circles: Active Inference in Continuous State Space using Hierarchical Gaussian Filtering of Sufficient Statistics*

Mohamed Baioumy, Bruno Lacerda, Paul Duckworth and Nick Hawes - *On Solving a Stochastic Shortest-Path Markov Decision Process as Probabilistic Inference*

Paul Kinghorn, Beren Millidge and Christopher Buckley - *Habitual and Reflective Control in Hierarchical Predictive Coding*

N.T.A. van Hoeffelen and Pablo Lanillos - *Deep active inference for pixel-based discrete control: evaluation on the car racing problem*

Daniel Burghardt and Pablo Lanillos - *Robot Localization and Navigation through Predictive Processing using LiDAR*

Kanako Esaki, Tadayuki Matsumura, Kiyoto Ito and Hiroyuki Mizuno - *Sensorimotor Visual Perception on Embodied System Using Free Energy Principle*

Alexander Vyatkin, Ivan Metelkin, Alexandra Mikhailova, Rj Cordes and Daniel Friedman - *Active Inference & Behavior Engineering for Teams*

Casper Hesp, Natalie Kastel, Phil Norberts, Tiffany Matej and Richard Ridderinkhof - *Social opinions, needs and cliques emerging in multi-agent affective inference*

#### **14:00 - 14:45 Keynote 2**

Inês Hipólito - *The world as we know it: Adaptation and evolution as free energy gradients*

#### **14:45 - 16:00 Presentations**

14:45 - 15:00 Toon Van de Maele, Tim Verbelen, Ozan Catal and Bart Dhoedt - *Disentangling what and where for 3D object-centric representations through active inference*

15:00 - 15:15 Morten Henriksen - *Blankets All the Way Up - The Economics of Active Inference*

15:15 - 15:30 Mark Miller and Ben White - *Filtered States: Active Inference, Social Media and Mental Health*

15:30 - 15:45 Natalie Kastel and Casper Hesp - *Ideas Worth Spreading: A Free Energy Proposal For Cumulative Cultural Dynamics*

15:45 - 16:00 Adam Safron and Zahra Sheikhbahaei - *Dream To Explore: 5-HT<sub>2A</sub> as adaptive temperature parameter for sophisticated affective inference*

#### **16:00 - 16:30 - Closing**