Questions? Write to:
hybridintelligence@ai.uni-kassel.de

Program and Speakers

Schedule

	21 August Monday	22 August Tuesday	23 August Wednesday	24 August Thursday	25 August Friday
08:00	TO Registration TO Opening	Open Transport	Paul Romanczuk	Guillermo Gallego	Heiko Hamann
10:00	Joerg Raisch	Georg Martius	Basil el Jundi	Cornelia Fermuller	Shohjay Park
11:00	Javier Alonso Mora	Xiaolong Wang	Mike Webster	Panel Discussion	Lauren Summer Bizzaey
12:00	Lunch	Lunch	Lunch	Lunch	Lunch
13:00	Networking	Sabine Hauert	Pia Bideau	Guido de Croon	Pia Bideau & Wolfgang Hönig
14:00	Wolfgang Hönig	Daniel Kappler	Daphne Cornelisse	Alexeo Franci	Sebastian Scherer
15:00	**Tutorial** Joerg Raisch	small dinner (paid for by participants)	**Tutorial** Pia Bideau & Wolfgang Hönig	**Tutorial** Guillermo Gallego	**Tutorial** Cornelia Fermuller
16:00	Tutorial Javier Alonso Mora	Berlin Excursion	Tutorial Sebastian Scherer	Tutorial Guido de Croon	Tutorial Daniel Kappler
17:00	Panel	Panel	Panel	Closing Panel with Sebastian	
18:00	Dinner (Gourmet)	Dinner (Gourmet)	Dinner (Mexican)		
19:00					

All lectures take place in room 2.057

Monday, August 21, 2023

Time	Activity
9:00 – 10:00	Opening and Welcome Words

10:00 – 11:00

Joerg Raisch

Professor

Achieving Consensus in Multi-Agent Systems

- About Speaker

Joerg Raisch is Head of Systems Control and Optimization at Ilmenau University and Head of Systems Theory at MPI Magdeburg. He received his PhD and Habilitation degree both from Dortmund University. He holds the chair for Control Systems Theory and Control Systems at Technical University Berlin and is speaking scientific manager of the Max Planck Institute for Dynamics of Complex Technical Systems. His main research interests are hybrid and discrete-event dynamical systems, control and optimization of networks, and distributed and hierarchical control in complex systems with applications in chemical, medical and power systems engineering. He was on the editorial boards of Automatica, IEEE Transactions on Automatic Control, IEEE Transactions on Control Technology, and Mechatronics, and served as chair of IFAC Technical Committee 1.3 (Discrete Event and Hybrid Systems). He is an the editorial board of Springer's Advanced Manufacturing Series and Foundations and Trends in Systems and Control.

- Abstract

11:00 – 12:00

Javier Alonso Mora

TU Delft

AI

- About Speaker

Javier Alonso Mora is an Associate Professor at the Cognitive Robotics department at the Delft University of Technology, where he is the director of the Autonomous Delivery Vehicles laboratory. He is a Principal Investigator at the Amsterdam Robotics and AI Research Institute and a member of the advisory Board of TU Delft Robotics Institute. His scientific research is in the field of robotics and artificial intelligence, including the Robotics Institutes, the Transportation Institute and the Mobility Institute.

His team research interests in navigation, motion planning and control of autonomous mobile robots, and a special emphasis on multi-robot systems, human-robot interaction, and learning. Applications of his research are in transport & dynamic and cooperative manipulation, and in the coordination of multiple drones and grains, including the DFG Rest Plastic Sand on Beach project, the Netherlands Organisation for Scientific Research (NWO) Crowdsourcing Drone Delivery project, and the Netherlands Organisation for Scientific Research (NWO) Free Robots project.

- Abstract

12:00 – 13:00 **Lunch & Group-Photo (2.057)**

13:00 – 16:00 **Networking**

14:00 – 15:00

Sabine Hauert

Professor

Swarms for People

- About Speaker

Sabine Hauert is Associate Professor (Reader) of Swarm Engineering at the University of Bristol. She uses swarms of robots to help people in agriculture, people, and rescue scenarios. Her research has interests for swarm theories, large-scale swarm design, and human-swarm interaction. She is co-founder of Bristol Robotics engineered swarms, co-founder of the swarm research network AFAR, and deployed swarms of flying robots at DFRC.

She is passionate about outreach, education, diversity, and exercise. Hauert is the recipient of the Young Inventor Prize, and has dedicated to combining her science and its communication to the public.

She has been involved in robotics research for 20 years of experience. Sabine is often asked to discuss the future of robots and is currently leading a journal feature, at the European Parliament, and at the Royal Society. Her work has been featured in Nature, Science Robotics, Wired, BBC, The Guardian, The Economist, TEDx, WIRED, and New Scientist.

- Abstract

15:00 – 17:00

Wolfgang Hönig

TU Berlin

Multi-Robot Coordination

- About Speaker

Wolfgang Hönig is an independent junior research group leader at TU Berlin. From **Hönig** he is part of the Robotics and Biomechatronics Center. Previously, he was a postdoctoral scholar at the Department of Aerospace, California Institute of Technology (Caltech) in the Multi-Robot Systems Lab. He received a Computer Science from the Max Planck Institute for Informatics, where he was advised by Nico Hanford. His research focuses on enabling large teams of robots to perform complex tasks in the real world. Hönig's work spans from informed search, optimization, and machine learning, intelligent behaviors. A single robot is not sufficient for executing tasks with complex dynamics, such as manipulation, or in environments with dynamic controls, motion planning, and general-purpose learning frameworks for a single robot to cooperate intensive. Thus, we discuss algorithms on how we can coordinate teams of robots with dynamics, kinematic constraints, limited communication, and uncertainty-aware.

- Abstract

16:00 – 20:00 **Dinner**

Tuesday, August 22, 2023

9:00 – 10:00

Marc Toussaint

TU Berlin

Action and Grasp Representations for Robotic Manipulation

- About Speaker

Marc Toussaint works at TU Berlin on Learning and Intelligent Systems. In his view, a key to artificial intelligence is how to learn, and how to learn learning and reasoning, where learning learns the prior for reasoning. Intelligent behavior requires reasoning, learning, and perception. He is interested in studying computational intelligence and experimentation to enable efficient learning and general-purpose physical reasoning, and demonstrating such capabilities in real-world robotic scenarios.

- Abstract

10:00 – 11:00

Georg Martius

Max Planck Institute for Intelligent Systems

Machine learning algorithms for autonomously learning robots

- About Speaker

Georg Martius works as group leader at the Max-Planck-Institute for Intelligent Systems in Tübingen, Germany, where he heads the Robot Learning research group. He obtained his diploma from Leipzig University and his PhD from the University of Göttingen. Thereafter, he conducted his postdoc at the University of California, Berkeley. His research focuses on the intersection of artificial intelligence and robotics. In particular, he develops algorithms that enable robots to learn on their own and to acquire the representation to guide robots to learn. He is the recipient of the NAF DAAD-Award, Sony Research Award, and Volkswagen Research Award.

- Abstract

11:00 – 12:00

Xiaolong Wang

University of California

Geometric Robot Learning for Generalizable Skills Acquisition

- About Speaker

Xiaolong Wang is an Assistant Professor in the ECE department at the University of California, San Diego. His research focuses on the intersection of Learning for Visual Computing Foundation/Robotics/Medical applications. Prior to joining UCSD, he was a postdoc at the Carnegie Mellon University. He received his training degree from the University of Chinese Academy of Sciences. He received Research Awards from Adobe, Amazon, Cisco, Google, Intel, Sony, and Sony.

- Abstract

12:00 – 13:00

Pia Bideau

TU Berlin

Individual Robot Perception and Learning

- About Speaker

Pia Bideau is a postdoctoral researcher at TU Berlin and part of the Cluster Science of Intelligence as of January 2020. Her research aims to address the gap between the perception of humans and machines in the context of motion and learning. Her research focuses on the perception of complex scenes from a moving camera, such as the ones from autonomous cars, or from a moving camera, such as the ones from autonomous cars, or from the two systems can learn from each other. She received her PhD from the University of Massachusetts Amherst. Currently, her postdoctoral training takes place at the University of California, Berkeley. Her research focuses on the intersection between computer vision and learning. Her research focuses on the intersection between computer vision and learning. Her research focuses on the intersection between computer vision and learning

structure, function and evolution of animal visual systems, with a focus on many-eyed organsims such as molluscs, spiders and echinoderms. The group uses a combination of digital morphology, neuroethology, evo-devo and comparative phylogenetic methods to study how and why animals use more than two eyes, and how these unusual visual systems evolve. Other research interests include the evolution of eye loss in dark habitats, the impacts of artificial light on visual ecology, and invertebrate neuroanatomy.

Abstract

12:00 – 13:00 **Lunch**

13:00 – 14:00

Martin Saska

Czech Technical University of Prague

Advantages and challenges of tightly cooperating aerial vehicles in real-world environment

About Speaker

Martin Saska works at the Czech Technical University of Prague. His research interests are motion planning, swarm robotics, modular robotics, and robotic simulators. During his PhD thesis he worked on “Identification, Optimization and Control with Applications in Modern Technologies.”

Abstract

14:00 – 15:00

Iain Couzin

Max Planck Institute of Animal Behavior in Konstanz

Title will follow

About Speaker

Iain Couzin works at the Max Planck Institute of Animal Behavior in Konstanz. He is Director of the Department of Collective Behavior (Max Planck Institute of Animal Behavior) and a Full Professor at the University of Konstanz, where he is also a spokesperson of the Cluster of Excellence ‘Centre for the Advanced Study of Collective Behaviour’. Previously he was a Full Professor in the Department of Ecology and Evolutionary Biology at Princeton University (2013), and prior to that a Royal Society University Research Fellow in the Department of Zoology, University of Oxford, and a Junior Research Fellow in the Sciences at Balliol College, Oxford (2002-2007).

Abstract

15:00 – 17:00

David Bierbach

Humboldt Universität zu Berlin

Tutorial: *Perception and Learning in Nature*

About Speaker

David Bierbach is a biologist working at Humboldt Universität zu Berlin. He is interested in topics that range from individual differences to large-scale collective behaviors. He integrates field-based studies with analytical and experimental approaches in the laboratory. Through his highly interdisciplinary work, he has developed several experimental techniques to study animal behavior in the most standardized ways, from video playbacks and computer animations to the use of bio-mimetic robots. His main research objectives are tropical freshwater fish like clonal mollies (Poecilia formosa), guppies (P. reticulata) or sulfur mollies (P. sulphuraria). At SCIoI, he is investigating how fish use anticipation in their social interactions and how information is effectively transferred within groups.

Abstract

17:00 – 19:00 **Closing Event**

Gefördert durch die Deutsche Forschungsgemeinschaft (DFG) im Rahmen der Exzellenzstrategie des Bundes und der Länder – EXC-2002/1 – Projektnummer 390523135 .

Funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany´s Excellence Strategy – EXC-2002/1 – Projectnumber 390523135.