WORKSHOP ON MULTI-AGENT LEARNING AND ITS OPPORTUNITIES IN THE ERA OF GENERATIVE AI

ABSTRACT

The rapid emergence of generative AI has revitalized interest in multi-agent learning as a foundation for building systems that can reason, coordinate, and adapt across diverse environments. This workshop seeks to explore the growing convergence between multi-agent learning and generative AI, emphasizing their mutual potential to advance both theoretical understanding and practical capability. We focus on three interrelated fronts where this integration is most visible: (1) LLM-based multi-agent systems, where large language models interact, cooperate, or compete in structured settings; (2) real-world distributed system control, where multi-agent learning offers scalable and data-driven coordination strategies for complex real-world systems such as smart cities; and (3) human-AI interaction, where generative AI enables richer modelling of human preferences, values, and behaviours, supporting more human-aligned multi-agent systems. By bringing together researchers from machine learning, game theory, cognitive science, and human-computer interaction, this workshop aims to bridge methodological insights and emerging applications, fostering a shared agenda for the age of multi-agent generative AI systems.

1 WORKSHOP SUMMARY

1.1 MOTIVATION

In the era of generative AI, **multi-agent generative systems** have emerged as a central paradigm driving progress across industry and research in AI, social science, and economics. This workshop aims to explore the evolving interplay between **multi-agent learning** and **generative AI**, focusing on three key domains where their integration is most evident: **LLM-based multi-agent systems**, **real-world distributed system control**, and **human-AI interaction**.

The rapid progress of large language models (LLMs) has increased interest in multi-agent learning, as these models increasingly operate within the framing of multi-agent systems that require coordination, communication, and adaptation. For example, LLM-based multi-agent systems are now used to explore novel social norms and conventions via simulating human behaviors (Park et al., 2023; Aher et al., 2023). As a further example, complex LLM agent systems (e.g. coding agents, deep research agents, etc.) are modularised via some structure like graphs or chains, where each module is an LLM exclusively responsible for a subtask (Hong et al., 2024; Qian et al., 2024). In these tasks, although the knowledge about traditional multi-agent systems can help clarify modelling specifications (Xi et al., 2025; Guo et al., 2024),[1] how agents can **learn** to complete a cooperative task in a theoretically justified manner, in multi-agent settings with incomplete and imperfect information still remain a question. To this end, multi-agent learning (Stone & Veloso, 2000; Albrecht & Stone, 2018) as an interdisciplinary research field connecting traditional multi-agent systems (Gasser, 1991; Wooldridge, 2009) and machine learning, is able to bridge this gap. Specifically, the long-standing and well-studied multi-agent learning paradigms of cooperative multi-agent learning, competitive multi-agent learning and ad hoc teamwork (Hernandez-Leal et al., 2019; Mirsky et al., 2022) have taken into consideration of environments. Therefore, it is evidential to predict that **the hands-on experience from multi-agent learning can potentially drive LLM system development in a more effective and rigorous manner**.

[1] The traditional multi-agent systems primarily provide the modelling techniques for describing a multi-agent interaction process, e.g. game-theoretic models. In contrast, it lacks advanced techniques, like what today's multi-agent learning realized, to deal with some realistic situations when the game-theoretic models are not fully provided, e.g. partial observability.

Beyond the relation to LLMs, the multi-agent learning itself is useful for addressing complex, real-world dynamic systems that require distributed control. For example, in a smart city where agents are mixed with humans and AI agents (e.g., autonomous vehicles and smart household power generators), it would be non-trivial for any AI agent to make decisions when interacting with various types of agents (Xing et al., 2021). The reason is that this emerging complicated scenarios are difficult to be modelled at a fine granularity from the legacy mathematical perspectives (e.g., ODE and PDE) (Kundur et al., 2007; Chung et al., 2018), and therefore the traditional engineering approaches—e.g., stochastic optimization (Fouskakis & Draper, 2002) and control theory (Khalil & Grizzle, 2002)—strongly relying on the formally described environments could become insufficient to deal with the upcoming challenges of AI. To overcome this challenge, multi-agent learning—blending mathematical modelling in coarse granularity for describing interaction processes (and environments) (Osborne et al., 2004; Oliehoek et al., 2016), and eliciting the fine-grained dynamics through data (Albrecht et al., 2024)—is a promising solution. Although the pioneering work in multi-agent learning has paid efforts on investigating novel paradigms (e.g., cooperative multi-agent learning, competitive multi-agent learning and ad hoc teamwork), whether these paradigms are well-defined enough to tackle the future challenges of AI is still an open question. To this end, **the strong generative AI techniques is meaningful to be incorporated into modules of multi-agent learning** (e.g., reward models and agent-type inference), so that the extreme performance of the existing multi-agent learning paradigms can be well explored.

More recently, the growing interest in human-AI interaction has highlighted the need for AI agents to learn and make decisions in collaboration with people—receiving human feedback, following instructions, and adapting to human goals within multi-agent settings. One example is human-intervened multi-agent systems (Chung et al., 2020), where human knowledge represented in multimodality (e.g., language, images, etc.) is potential to help guide multi-agent learning to solving some emerging realistic scenarios (e.g., multi-robot teams for inventory logistics and smart cities). Another example is configuring a human model to support an AI agent in learning to adapt to human behaviours with no requirement of real-time human feedback, where the ecosystem consisting of a human and an AI agent still forms a multi-agent system. Some recent works on **training a human model through some generative AI techniques** have achieved success to some extent, such as the LLMs that capture human preferences (Huang et al., 2023), reward models reflecting human value systems (Wu et al., 2023), or behavioural models that simulate human decision-making patterns enabling more human-aligned agents (Liang et al., 2024). Nevertheless, due to the recently increasing awareness of AI safety/security in the society (Gyevnar & Kasirzadeh, 2025), **endowing those human models with interpretability and predictable performance** remains a challenge.

1.2 Objective

As per the above motivating examples, the main objective of this workshop is to **encourage thinking and discussion about the opportunities of fundamental multi-agent learning research in the era of generative AI**. A good adaptation of existing theoretical and methodological approaches to new problems requires participation of all stakeholders (e.g., theorists, practitioners, and engineers). To this end, we commit to

1. Designing a workshop involving speakers and panellists from diverse backgrounds to express various positions;
2. Gathering normal paper submissions about some matured ideas of related topics;
3. Initiating a 4-page blueprint paper track (tiny paper track) gathering open ideas about how multi-agent learning will be benefited from and improve generative AI.

We believe this would be an effective way to align the prospects of all parties. Moreover, we will initiate and share a networking deck with all participant information for attendees to get in touch with others of like interests more easily. This workshop is expected to **advance both generative AI and multi-agent learning, to support the age of multi-agent generative AI systems**.

1.3 Overview of Topics of interest

The workshop will cover a range of topics, including but not limited to:

1. **Multi-Agent Learning Paradigms for LLMs**
   (a) Cooperative multi-agent reinforcement learning for improving coordination between modules within the multi-agent system LLMs (LLM orchestration)
   (b) Adversarial training for improving the generalizability of the single LLM training
   (c) Open multi-agent reinforcement learning/ad hoc teamwork for a multi-agent system LLMs to deal with some unknown and situational function/data providers
   (d) Formalism of full/partial information required in modelling multi-agent system LLMs and the minimal information each agent needs
   (e) Strengths/weaknesses of natural language as both the action space and the observation space in the multi-agent system LLMs
   (f) Criteria for evaluating a "well structured" multi-agent system LLMs in completing a task (e.g., game-theoretic approaches and models)
   (g) Coordination mechanisms for improving performance of multi-agent system LLMs, which can be either predefined or learned from data
   (h) Structures (e.g., chains, graphs, etc.) to represent a multi-agent system for LLMs
   (i) Application of coordination graphs (e.g., DAGs, factor graphs, etc.) on decomposing reward functions for training multi-agent system LLMs
2. **Generative AI for Multi-Agent Learning**
   (a) World models for improving the data quality for multi-agent learning
   (b) Reward models for improving multi-agent learning with sparse rewards
   (c) Generative AI to generate a diverse set of agent models
   (d) Generative models (e.g., diffusion models) for improving multi-agent learning
   (e) Graph-based generative AI for improving graph-structured multi-agent learning and emergent communication between agents
   (f) Multi-agent systems for the modular generative models
3. **Multi-Agent Exploration for Generative AI**
   (a) Multi-agent exploration for coordinating modules in the modular generative AI models
   (b) The role of entropy of agent policies (generators) in the modular generative AI learning
4. **Environments for Testing and Developing Multi-Agent Learning**
   (a) Environments of real-world decentralised or distributed control problems
   (b) Computationally efficient environments for generative AI-based multi-agent learning
   (c) Light environments (without LLMs) for simulating the human-AI interaction process
   (d) JAX environments for accelerating multi-agent simulation processes
5. **Human-AI Interaction**
   (a) Learning paradigms for improving the capability of AI agents to adapt to human instructions or proactively guide humans
   (b) Capable and interpretable (explainable) human models trained by generative AI
   (c) Appropriate medium of conveying human instructions to AI agents (e.g., natural language, formal methods and learning embeddings)
   (d) Approaches for estimating human intentions enabling AI agents to make better decision

2 Call for Paper Submissions

We warmly invite submissions from researchers, practitioners, and students working at the intersection of multi-agent learning and generative AI. Our workshop aims to bring together diverse perspectives to spark discussion, share insights, and inspire new research directions.

Accepted papers will be presented as posters, with a selection of outstanding submissions invited for spotlight or oral presentations. The workshop is non-archival, meaning authors are free to submit their work to other conferences or journals.

TRACKS AND PAPER TYPES

We welcome submissions from two tracks, where we specifically introduce a **Blueprint Track supporting short or tiny papers**, designed to encourage early-stage, forward-looking, and inclusive contributions. Alongside this, we also welcome full papers in the **Main Research Track**, which **have not** been published in other conferences on machine learning.

- **Main Research Track (6-8 pages)**: Full papers presenting novel methods, theoretical analyses, or comprehensive empirical results related to the workshop topics.
- **Blueprint Track (2-4 pages)**: Visionary, exploratory, or critical perspectives, including but not limited to:
  - Conceptual framework for bridging multi-agent learning and generative AI
  - Preliminary research with modest but insightful conclusions or results
  - New perspectives, critiques, or re-analyses of existing findings
  - Tools, benchmarks, or environments for multi-agent learning and generative AI

This track particularly encourages submissions from newcomers, under-resourced researchers, and under-represented groups, aligning with our workshop's mission to "launch an initiative for encouraging thinking and discussion."

All submissions must use the official ICLR 2026 LaTeX template. Page limits exclude references and appendices.

IMPORTANT DATES

- **Paper Submission Deadline**: 5 February 2026, 11:59pm AOE
- **Notification of Acceptance**: 1 March 2026, 11:59pm AOE
- **Camera-Ready Due**: 3 April 2026, 11:59pm AOE

REVIEW PROCESS

- **Submission Platform**: All submissions will be managed through **OpenReview**.
- **Double-Blind Review**: We will enforce a double-blind review policy to ensure anonymity and impartiality for both authors and reviewers.
- **Reviewer Assignment**: Each submission will be evaluated by **at least two members** of the program committee with expertise in multi-agent learning, generative AI, or related fields.
- **Final Decisions**: Final acceptance decisions will be made by the organizing committee based on reviewer feedback and a thorough discussion period.
- **Conflict of Interest**: We will strictly adhere to the ICLR policy on Conflicts of Interest (COI). Reviewers will be required to declare any potential conflicts, and conflicted papers will be reassigned.
- **LLM Usage Policy**: We will follow the official https://blog.iclr.cc/2025/08/26/policies-on-large-language-model-usage-at-iclr-2026/. In particular, AI systems may be used by workshop participants or organizers for supportive roles (e.g., language refinement, brainstorming, or discussion moderation), but **AI-generated papers are not permitted for normal or tiny paper submissions**. All AI contributions must remain under human oversight and validation, and the role of AI (if any) in the preparation of submissions must be transparently acknowledged.

REVIEWER AND AREA CHAIR SCREENING CRITERIA

The program committee will evaluate all submissions based on the following criteria:

- **Relevance**: Alignment with the workshop themes.
- **Novelty**: New methods, perspectives, or applications. For blueprint papers, forward-looking and thought-provoking ideas are especially valued.
- **Technical Soundness**: Appropriateness and rigor of methods and analyses.

- **Impact**: Potential to inspire research, address core challenges, or influence the community.
- **Clarity**: Quality of writing, presentation, and accessibility.

For the blueprint track submissions, reviewers will emphasize on **insightfulness and potential to spark discussion** rather than completeness of results.

3 Panel Discussion Topic: Bridging the Gap between Multi-agent Learning and Generative Agents

The rapid emergence of multi-agent LLM systems presents an exciting new direction for AI research. However, a significant gap has formed between this new wave of "generative agents" and the decades of existing work on multi-agent learning (Stone & Veloso, 2000; Albrecht & Stone, 2018; Wellman et al., 2025), creating a risk of 'reinventing the wheel' (Malfa et al., 2025; Franklin & Graesser, 1997). The panel will address this critical disconnect, aiming to ground the fast-paced development of multi-agent LLM systems in the rigorous frameworks, methods, and knowledge of the multi-agent systems community more broadly.

To this end, our panel will facilitate a discussion between leading researchers with established expertise in multi-agent learning and multi-agent systems, researchers investigating and developing cutting edge multi-agent LLM systems, and industry experts exploring real-world use cases of generative agent systems. The conversation will focus on identifying the intersections and gaps between classic multi-agent learning and modern LLM agent systems, with the goal of charting a path to unification. We will ask what core lessons from multi-agent learning can be directly applied to understand the limitations of today's generative agent systems, towards suggesting open problems. Moreover, the panel will explore the potential for multi-agent learning techniques to improve the core reasoning and planning abilities of LLMs even in single-agent scenarios (Zhang et al., 2025).

Given the explosion of interest in multi-agent LLM systems, for the ICLR audience, this discussion promises to be an invaluable opportunity to connect cutting-edge generative AI researcher with the principled, theoretical foundations needed to ensure its long-term success.

4 Invited Keynote Speakers and Panellists

4.1 Keynote Speakers

Yali Du (Kings College London)

Location: UK

Gender: Female

Short Bio: Dr. Yali Du is a Senior Lecturer (Associate Professor) in AI at King's College London, and a Turing Fellow at The Alan Turing Institute. At King's, she is the head of the Distributed AI Group. She directs the Cooperative AI Lab. Her research aims to enable machines to exhibit cooperative and safe behaviour in intelligent decision making tasks. Her work focuses on reinforcement learning and multi-agent cooperation, with topics such as generalization, zero-shot coordination, evaluation of human and AI players, and social agency (e.g., human-involved learning, safety, and ethics). She was chosen for the AAAI New Faculty Highlights award (2023), Rising Star in AI 2023. She has given tutorials on cooperative multi-agent learning at ACML 2022 and AAAI 2023. She serves as the editors for Journal of AAMAS and IEEE Transactions on AI, Area Chair for NeurIPS 2024. She also serves in organising committee for AAMAS 2023 and NeurIPS 2024. Her research is also supported by the Engineering and Physical Sciences Research Council (EPSRC) and AI Safety Institute (AISI).

Eugene Vinitsky (New York University)

Location: USA

Gender: Male

Short Bio: Eugene Vinitsky is an Assistant Professor at NYU Tandon School of Engineering with appointments in Civil and Urban Engineering, Computer Science and Engineering, and C2SMARTER (a US DOT-funded Tier 1 University Transportation Center). His research focuses on enabling complex, human-like behavior to emerge from unsupervised interaction between groups of learning agents, with applications in autonomous vehicles and traffic control. His work spans multi-agent reinforcement learning algorithms, data-driven simulators, and deploying simulator-designed controllers into real-world systems. Previously, he received his PhD from UC Berkeley, worked as a research scientist at Apple Special Projects Group, and has been a visiting researcher at Facebook AI and interned at Tesla Autopilot and DeepMind's Multi-Agent AI team. His contributions include the Flow framework for mixed-autonomy traffic control, PAIRED for emergent complexity via unsupervised environment design (NeurIPS 2020 oral), and recent work on adaptive AI systems that can quickly learn to cooperate with new partners. He recently received a Google DeepMind grant to advance AI adaptation research.

Peter Stone (University of Texas at Austin and Sony AI)

Location: USA

Gender: Male

Short Bio: He is the Founder and Director of the Learning Agents Research Group (LARG) within the Artificial Intelligence Laboratory in the Department of Computer Science at the University of Texas at Austin. He also serves as Department Chair and Founding Director of Texas Robotics. He was a co-founder of Cogitai, Inc. and currently serves as Chief Scientist of Sony AI. His primary research interest in artificial intelligence lies in understanding how to create complete intelligent agents. He views adaptation, interaction, and embodiment as fundamental capabilities of such agents, and his research therefore centers on machine learning, multi-agent systems, and robotics. He is particularly drawn to research topics motivated by challenging real-world problems and believes that impactful research should combine precise, novel algorithms with fully implemented and rigorously evaluated applications. His application domains have included robot soccer, autonomous bidding agents, autonomous vehicles, and human-interactive agents.

Natasha Jaques (University of Washington and Google DeepMind, Confirmed)

Location: USA

Gender: Female

Short Bio: She is an Assistant Professor at the University of Washington's Paul G. Allen School of Computer Science & Engineering, where she leads the Social RL Lab. She also holds a position as a Senior Research Scientist at Google DeepMind. During her PhD at MIT, she developed methods for fine-tuning language models using reinforcement learning and human feedback—techniques that later influenced OpenAI's work on Reinforcement Learning from Human Feedback (RLHF). In the multi-agent domain, she proposed approaches for enhancing coordination through the optimization of social influence. She has held research positions at DeepMind, Google Brain, and served as a mentor for the OpenAI Scholars program. Following her PhD, she was a Visiting Postdoctoral Scholar at UC Berkeley in Sergey Levine's group and later a Senior Research Scientist at Google Brain, where she worked on adversarial environment generation to improve the robustness of reinforcement learning agents. Her research has been recognized with several awards, including Best Demo at NeurIPS, an Honourable Mention for Best Paper at ICML, and the Outstanding PhD Dissertation Award from the Association for the Advancement of Affective Computing. Her work has been featured in Science Magazine, MIT Technology Review, Quartz, IEEE Spectrum, Boston Magazine, and CBC Radio, among others. She holds a Master's degree from the University of British Columbia and undergraduate degrees in Computer Science and Psychology from the University of Regina.

Zhijing Jin (University of Toronto)

Location: Canada

Gender: Female

Short Bio: She is an incoming Assistant Professor at the University of Toronto, and currently a research scientist at the Max Planck Institute with Bernhard Schoelkopf, based in Europe. She is also a CIFAR AI Chair, faculty member at the Vector Institute, an ELLIS advisor, and faculty affiliate at the Schwartz Reisman Institute. Her research areas are Large Language Models (LLMs), Causal Inference, and Responsible AI. Specifically, her vertical work focuses on Causal Reasoning with LLMs (Causal AI Scientist, Corr2Cause, CLadder, Quriosity, Survey), Multi-Agent LLMs (GovSim, SanctSim, MoralSim), and Moral Reasoning in LLMs (TrolleyProblems, MoralLens, MoralExceptQA). To support the quality of her vertical work, her horizontal work brings in Mechanistic Interpretability (CompMechs, Mem vs Reasoning), and Adversarial Robustness (CRL Defense, TextFooler, AccidentalVulnerability, RouterAttack). Her research contributes to AI Safety and AI for Science. She is the recipient of 3 Rising Star awards, 2 Best Paper Awards at NeurIPS 2024 Workshops, and several fellowships at Open Philanthropy and the Future of Life Institute. In the international academic community, She is a co-chair of the ACL Ethics Committee, co-organizer of the ACL Year-Round Mentorship, and a main supporter of the NLP for Positive Impact Workshop series. Her work is reported in CHIP Magazine, WIRED, and MIT News. Her research is funded by NSERC, MPI, UofT, Schmidt Sciences, Open Phil, AISF, and Cooperative AI Foundation.

4.2 PANELLISTS

Moderator: Guohao Li (Eigent.AI)

Location: UK

Gender: Male

Short Bio: Guohao Li is the founder and CEO of Eigent.AI. He is an artificial intelligence researcher and an open-source contributor working on building intelligent agents that can perceive, learn, communicate, reason, and act. He is the core lead of the open source projects CAMEL-AI.org and DeepGCNs.org. He was a postdoctoral researcher at University of Oxford with Prof. Philip Torr. He obtained his PhD degree in Computer Science at King Abdullah University of Science and Technology (KAUST) advised by Prof. Bernard Ghanem. During his Ph.D. studies, he was fortunate to work at Intel ISL with Dr. Vladlen Koltun and Dr. Matthias Müller as a research intern. He visited ETHz CVL as a visiting researcher. He also worked at Kumo AI and PyG.org with Prof. Jure Leskovec and Dr. Matthias Fey as a PhD intern. His primary research interests include Autonomous Agents, Graph Machine Learning, Computer Vision, and Embodied AI. He has published related papers in top-tier conferences and journals such as ICCV, CVPR, ICML, NeurIPS, RSS, 3DV, and TPAMI.

Anna Helena Reali Costa (University of São Paulo)

Location: Brazil

Gender: Female

Short Bio: Anna Reali Costa is a full professor in the Department of Computer Engineering at the University of São Paulo (USP), Brazil, where she leads research at the intersection of artificial intelligence, machine learning, and autonomous agents. She earned her Ph.D. in Electrical Engineering from University of Sao Paulo. Early in her career, she held visiting researcher positions at the University of Karlsruhe (Germany), focusing on robotic vision and intelligent mobile robots under Prof. Ulrich Rembold, and at Carnegie Mellon University (USA), collaborating with Prof. Manuela Veloso on planning, learning, and execution for multi-robot systems. Anna has been recognized as a leading figure in Brazilian AI, and she is actively involved in major national initiatives. She is the Director of the Data Science Center (C2D), a partnership between USP and Itau Unibanco, one of the largest banks in Latin America.

Zhijing Jin (University of Toronto)

Location: Canada

Gender: Female

Short Bio: She is an incoming Assistant Professor at the University of Toronto, and currently a research scientist at the Max Planck Institute with Bernhard Schoelkopf, based in Europe. She

is also a CIFAR AI Chair, faculty member at the Vector Institute, an ELLIS advisor, and faculty affiliate at the Schwartz Reisman Institute. Her research areas are Large Language Models (LLMs), Causal Inference, and Responsible AI. Specifically, her vertical work focuses on Causal Reasoning with LLMs (Causal AI Scientist, Corr2Cause, CLadder, Quriosity, Survey), Multi-Agent LLMs (GovSim, SanctSim, MoralSim), and Moral Reasoning in LLMs (TrolleyProblems, MoralLens, MoralExceptQA). To support the quality of her vertical work, her horizontal work brings in Mechanistic Interpretability (CompMechs, Mem vs Reasoning), and Adversarial Robustness (CRL Defense, TextFooler, AccidentalVulnerability, RouterAttack). Her research contributes to AI Safety and AI for Science. She is the recipient of 3 Rising Star awards, 2 Best Paper Awards at NeurIPS 2024 Workshops, and several fellowships at Open Philanthropy and the Future of Life Institute. In the international academic community, She is a co-chair of the ACL Ethics Committee, co-organizer of the ACL Year-Round Mentorship, and a main supporter of the NLP for Positive Impact Workshop series. Her work is reported in CHIP Magazine, WIRED, and MIT News. Her research is funded by NSERC, MPI, UofT, Schmidt Sciences, Open Phil, AISF, and Cooperative AI Foundation.

Eugene Vinitsky (New York University)

Location: USA

Gender: Male

Short Bio: Eugene Vinitsky is an Assistant Professor at NYU Tandon School of Engineering with appointments in Civil and Urban Engineering, Computer Science and Engineering, and C2SMARTER (a US DOT-funded Tier 1 University Transportation Center). His research focuses on enabling complex, human-like behavior to emerge from unsupervised interaction between groups of learning agents, with applications in autonomous vehicles and traffic control. His work spans multi-agent reinforcement learning algorithms, data-driven simulators, and deploying simulator-designed controllers into real-world systems. Previously, he received his PhD from UC Berkeley, worked as a research scientist at Apple Special Projects Group, and has been a visiting researcher at Facebook AI and interned at Tesla Autopilot and DeepMind's Multi-Agent AI team. His contributions include the Flow framework for mixed-autonomy traffic control, PAIRED for emergent complexity via unsupervised environment design (NeurIPS 2020 oral), and recent work on adaptive AI systems that can quickly learn to cooperate with new partners. He recently received a Google DeepMind grant to advance AI adaptation research.

Marc Lanctot (Google DeepMind)

Location: UK

Gender: Male

Short Bio: He is a Research Scientist at Google DeepMind. Previously, he was a Postdoctoral Researcher at the Games and AI Group at Maastricht University, where he worked with Mark Winands. During his PhD at the University of Alberta, he collaborated with Michael Bowling on developing sampling algorithms for equilibrium computation and decision-making in games—a topic detailed in his doctoral thesis. Before his PhD, he completed his undergraduate and Master's studies at McGill University's School of Computer Science and Games Research @ McGill, under the supervision of Clark Verbrugge. His research interests span general multi-agent learning and planning, computational game theory, reinforcement learning, and game-tree search. An overview of his recent work can be found in his COMARL seminar (slides available online), while a more personal account of his research journey and motivations is featured in an interview with Sanyam Bhutani on Chai Time Data Science. In November 2019, he also delivered a workshop on multi-agent reinforcement learning at Laber Labs, North Carolina State University, led by Eric Laber.

Bo An (Nanyang Technological University, Tentatively Confirmed)

Location: Singapore

Gender: Male

Short Bio: Bo An is a President's Chair Professor and Head of the Division of Artificial Intelligence at the College of Computing and Data Science, Nanyang Technological University (NTU),

Singapore, where he also directs the Centre for AI-for-X. He received his Ph.D. in Computer Science from the University of Massachusetts Amherst and previously worked at the University of Southern California with Prof. Milind Tambe. His research focuses on multi-agent systems, computational game theory, reinforcement learning, and AI for social impact. His game-theoretic research has led to real-world security applications deployed by the U.S. Federal Air Marshals Service, Coast Guard, and wildlife conservation organizations. He has published extensively in top AI venues and received numerous distinctions including the IFAAMAS Victor Lesser Distinguished Dissertation Award, INFORMS Daniel H. Wagner Prize, and Nanyang Research Awards. He was named to IEEE Intelligent Systems' "AI's 10 to Watch" list and currently serves as Editor-in-Chief of IEEE Intelligent Systems and will be Program Chair of IJCAI 2027.

5 Organizer Information

Our organizing committee brings together complementary expertise spanning multi-agent learning and generative AI (large language models), with members representing academia, government, and industry. Several organizers have extensive experience leading prior international workshops and community initiatives in related fields, ensuring both technical depth and logistical excellence. The committee reflects **balanced global representation**, with members based in the UK, Europe, Asia, and North America, as well as **gender diversity** and **a range of career stages**, collectively strengthening the inclusiveness and reach of the event.

Jianhong Wang. Jianhong Wang is a Senior Research Associate working at INFORMED-AI Hub, a UK national AI hub at University of Bristol, and a member of the European Laboratory for Learning and Intelligent Systems (ELLIS). His research interest lies in multi-agent learning and reinforcement learning, as well as their applications to real-world problems (e.g., energy systems, robotics, etc.). His work has been published in the top-tier AI conferences, such as NeurIPS, ICML, ICLR, AAAI, IJCAI, AAMAS, etc. Specifically, he has been focusing on developing cooperative multi-agent reinforcement learning (MARL) algorithms grounded in cooperative game theory for more than 6 years. Further, he initiated an open-sourced MARL environment called MAPDN in 2021, the first one targeting the distributed voltage control problem by inverter-based resources, a key challenge of the ongoing decarbonization of energy systems. He is also a regular reviewer for the top-tier AI conferences (e.g., NeurIPS, ICML, ICLR, AAAI, AAMAS, etc.). Moreover, he has organized the workshop called CoCoMARL for promoting cooperative MARL at RLC 2024 and 2025.

Caroline Wang. Caroline Wang is a PhD student supervised by Prof. Peter Stone at the University of Texas at Austin, and currently a student researcher at Google DeepMind. Previously, she received a B.S. in Computer Science and Mathematics at Duke University. Her work is focused on understanding cooperative dynamics in multi-agent reinforcement learning, and on designing algorithms to enable artificial agents to coordinate with previously unseen agents, and has been published at premier venues such as NeurIPS, AAAI, AAMAS, and IJCAI. Simultaneously, Caroline is a regular reviewer for premier AI conferences (NeurIPS, ICLR, ICML, AAAI, and AAMAS). Finally, she has twice been an organizer of the Adaptive and Learning Agent Workshop at AAMAS 2023 and 2024, a long-running workshop on adaptive agents and multi-agent systems.

Feng Chen. Feng Chen is a first-year PhD student supervised by Prof. Bo An at the Nanyang Technological University. He obtained his Bachelor's and Master's degrees in Computer Science and Technology from Nanjing University before. His research background is primarily centered on multi-agent reinforcement learning (MARL), with a specific focus on developing algorithms for cooperative multi-agent systems and enhancing multi-agent communication. His work on these areas has been published in premier AI conferences and journals, including NeurIPS, ICML, AAAI, TNNLS, TMLR. Building upon his MARL foundation, he has recently been exploring the burgeoning intersection of generative AI and multi-agent systems. This direction is informed by his practical industry experience, where he spent nearly a year working with the ByteDance Seed team on the crucial post-training of LLMs.

Muhammad Arrasy Rahman. Muhammad Arrasy Rahman is a postdoctoral research fellow at UT Austin. He previously obtained his PhD in 2023 from the University of Edinburgh. His research interests encompass the applications of deep reinforcement learning, transfer learning, and game theory for designing adaptive agents that can coexist with humans and other autonomous agents in shared environments. More recently, he has been exploring the design of LLM-based agents that

can assist humans and other LLMs in a broad range of tasks. Rahman has previously published his works in flagship AI journals & conferences. He also regularly reviews for major AI conferences (ICML, NeurIPS, ICLR, AAAI, AAMAS) and has been a program committee member for various AI-related workshops in the past (ALA 2022, ALA 2023, CoCoMARL 2024). He also organized the previous WAHT workshop at IJCAI 2022 and AAAI 2024.

Felipe Leno da Silva (Leno). Leno is currently a Senior Staff Researcher and Scientific Outreach Coordinator at the Lawrence Livermore National Laboratory, where he applies Reinforcement Learning and Multiagent Learning to varied applications related to National Security. His Ph.D. was on Transfer Learning for Multiagent RL systems.. He attends and acts as AC, SPC and PC member regularly to conferences such as ICLR, RLC, NeurIPS, IJCAI, AAAI, AAMAS, ECAI, ICML, and others. He will be one of the Silver Jubilee Chairs for AAMAS-26. He is also a seasoned workshop organizer having organized several workshop series including the ALA Workshop @ AAMAS between 2020-2022, the Workshop on AI for Critical Infrastructure @ IJCAI (2024) and multiple editions of the Latinx in AI workshop @ ICML and NeurIPS.

Rupali Bhati. Rupali is a third-year PhD student at Northeastern University, advised by Chris Amato. Her primary area of research is solving problems of cooperation in multi-agent settings. In the past, Rupali has organised the CoCoMARL Workshop at the Reinforcement Learning Conference 2024. Moreover, Rupali is the organiser of the Multi-Agent Learning Seminar. During her PhD, Rupali has worked at the Center for Human-Compatible AI (CHAI) at UC Berkeley and has been a scholar at the ML Alignment and Theory Scholars (MATS) program. Her work has been published at many AI conferences and workshops, including AAMAS, NeurIPS, ICML, AAAI, and ICLR.

Bo Liu. Bo Liu is currently a fourth-year PhD student at National University of Singapore working at the intersection of multi-agent reinforcement learning and generative AI, advised by Prof. Wee Sun Lee and Prof. David Hsu. His research focuses on multi-agent learning paradigms for LLMs, including competitive self-play and cooperative multi-agent systems. Currently a Research Scientist Intern at Meta FAIR, previously contributed to DeepSeek's foundation models (DeepSeek-V2, DeepSeek-Prover, DeepSeek-VL). Recent work includes SPIRAL, a self-play framework demonstrating how zero-sum games develop transferable reasoning in LLMs through multi-agent multi-turn RL, and Natural Language Reinforcement Learning (NLRL), extending traditional MDP to natural language spaces. Co-created TextArena (https://github.com/LeonGuertler/TextArena), a platform with 57+ competitive text-based environments for training and evaluating multi-agent behaviors in LLMs, addressing negotiation, theory of mind, and strategic reasoning. Also developed TorchOpt (https://github.com/metaopt/torchopt), a PyTorch Ecosystem Project for differentiable optimization supporting multi-agent learning algorithms. Publications at ICLR, NeurIPS, JMLR, and AAMAS span foundational topics including multi-agent communication topology learning, gradient bias in meta-RL, and highly parallel environment execution engines, bridging theoretical multi-agent learning with practical LLM systems.

Mustafa Mert Çelikok. Mustafa Mert Çelikok is an Assistant Professor at the University of Southern Denmark. His research focuses on multi-agent reinforcement learning for human–AI collaboration and cooperative AI. He received a PhD in Computer Science from Aalto University under Professor Samuel Kaski. Previously, he was a postdoctoral researcher at Delft University of Technology, working with Professor Frans A. Oliehoek and Jan-Willem van de Meent within the Hybrid Intelligence Center. He co-organized the "Collaborative AI and Modelling of Humans" workshops at AAAI in 2024 and 2025.

6 Previous Related Workshops

We list the previous related workshops that were held before as follows:

1. **Multi-Agent Systems in the Era of Foundation Models: Opportunities, Challenges and Futures**, ICML 2025
2. **Collaborative and Federated Agentic Workflows**, ICML 2025
3. **Workshop on Human-AI Coevolution**, ICLR 2025
4. **Workshop on Bidirectional Human-AI Alignment**, ICLR 2025

5. **Towards Agentic AI for Science: Hypothesis Generation, Comprehension, Quantification, and Validation**, ICLR 2025
6. **Workshop on Large Language Models for Agents**, ICLR 2024

Although the topics of our workshop may be overlapped with those in the previous workshops (e.g., human-AI interaction, multi-agent systems and agentic AI), **our workshop is uniquely more focused on bridging multi-agent learning techniques and generative AI**. In other words, it is aimed at encouraging the advancement of generic multi-agent learning techniques, rather than only concentrating on a broad class of applications or conceptions. We trust this is a meaningful and necessary step towards the success of machine learning breakthroughs in the era of generative AI.

7 Anticipated Audience Size

We expect 50+ attendees in the room at all times and around 500 attendees cumulatively throughout our workshop, according to the expected growing attendance of ICLR 2026 and the increasing interest in multi-agent systems in the community of generative AI.

8 Workshop Structure and Agenda

The workshop agenda is shared in Table 1. The workshop begins with opening remarks at 9:00 AM, followed by two invited keynotes that set the stage for the day. Then, a networking break encourages informal discussions, which allows for deeper engagement with presenters. After these, a session of two oral paper presentations (each lasting 15 minutes) provides an opportunity to highlight selected research contributions. The last session in the morning is the first poster session. Following lunch, two additional keynote talks are scheduled, offering further expert perspectives. Then, another networking session is scheduled. After that, the final invited keynote and the second oral presentation session are arranged. After the second poster session, the workshop then transitions into a panel discussion, fostering interactive dialogue among invited panellists and participants. Finally, the event concludes with closing remarks to wrap up the day's discussions and insights.

Time	Session	Duration
09:00 - 09:15	Opening Remarks	15 minutes
09:15 - 09:55	Invited Keynote 1	40 minutes
09:55 - 10:35	Invited Keynote 2	40 minutes
10:35 - 10:55	Break & Networking	20 minutes
10:55 - 11:25	Oral Paper Presentation 1	15 x 2 minutes
11:25 - 12:05	Poster Session 1	40 minutes
12:05 - 13:10	Lunch & Networking	65 minutes
13:10 - 13:50	Invited Keynote 3	40 minutes
13:50 - 14:30	Invited Keynote 4	40 minutes
14:30 - 14:50	Break & Networking	20 minutes
14:50 - 15:30	Invited Keynote 5	40 minutes
15:30 - 16:00	Oral Paper Presentation 2	15 x 2 minutes
16:00 - 16:40	Poster Session 2	40 minutes
16:40 - 17:30	Panel Discussion	50 minutes
17:30 - 17:40	Closing Remarks	10 minutes

Table 1: Workshop agenda

9 Plan to Get an Audience for our Workshop

We will actively promote the workshop to researchers in multi-agent systems, reinforcement learning, and generative AI, emphasizing its unique focus on opportunities at their intersection. Organizers and invited speakers will circulate the call through their academic and industry networks, as well

as relevant labs and groups (e.g., teams working on coordination, AI for science, and foundation models). Beyond personal outreach, we will distribute the call on confirmed community channels such as the RL-list Google Group, alongside community forums (Slack/Discord groups, Reddit's r/MachineLearning, LinkedIn). To ensure consistent branding, we will create official workshop accounts on Twitter/X, Bluesky, and Google (for a shared Gmail/Drive), which will host announcements, teaser content, and media assets. We will also coordinate with the official ICLR social media accounts to amplify visibility through retweets and reposts. A dedicated workshop website will link to these channels and present the call, program, and speaker highlights.

To maximize participation, we will encourage submissions of short papers and posters on open-ended or exploratory ideas, allowing contributions beyond mature results. Hybrid presentation options will be offered to increase accessibility, particularly for junior researchers and international participants. Our outreach will follow a phased strategy: early announcements upon acceptance, reminders during the submission window, and a final push close to the deadline. During ICLR, we will leverage official channels, workshop social accounts, and live updates to attract attendees onsite, and after the event we will release slides and recordings to ensure the workshop has lasting impact and visibility.

10 Diversity Statement

Our organizing team is intentionally diverse in terms of geography, gender, career stage, and professional background. The eight organizers include six males and two females, spanning PhD students to senior faculty and staff, and representing institutions in the UK, USA, Europe and Asia, across both academia and national laboratories. This balance ensures that decisions **reflect a range of perspectives and career experiences**. Importantly, our team also brings **varied levels of prior workshop-organizing experience**, ranging from first-time organizers to members with extensive experience in leading major international workshops, ensuring both fresh perspectives and proven expertise in managing all aspects of the event.

We have further prioritized diversity among invited speakers and panelists. The invited speakers comprise two males and two females, with representation from both industry and academia, and across career levels from Assistant Professor to Full Professor. Our panel is balanced in terms of gender and geography, with deliberate inclusion of local voices—most notably **Professor Anna Helena Reali Costa from University of São Paulo**, ensuring regional representation from South America. This commitment extends to the call for contributed work: we will explicitly encourage participation from underrepresented groups and early-career researchers, offering flexible formats (short/tiny papers, posters) and hybrid participation options to reduce barriers to engagement.

11 Virtual Access to Workshop Materials and Outcomes

To maximize accessibility and long-term impact, we will ensure that all workshop materials are available virtually. Talks, panels, and keynote sessions will be recorded (subject to speaker consent) and uploaded to the workshop website and YouTube. Accepted papers, posters, and presentation slides will be archived openly, with links on the workshop webpage and on open-access repositories such as OpenReview. We will also maintain a shared Google Drive for supplementary materials (e.g., datasets, code, or extended slides) and encourage presenters to share their artifacts. Live updates will be posted via our official social channels (Twitter/X, Bluesky), and we will facilitate remote participation through hybrid Q&A sessions and asynchronous discussion forums. This ensures that the workshop's outcomes remain accessible to the broader community well beyond ICLR 2026, including those unable to attend in person.

12 Managing Conflicts of Interest

To ensure fairness and transparency, we will strictly follow ICLR's conflict-of-interest (COI) policies in reviewing submissions and organizing the program. Organizers will not handle papers from their own students, collaborators, or institutions, and such submissions will be reassigned to other reviewers without conflicts. We will maintain a clear COI tracking system—based on co-authorship,

institutional affiliation within the past three years, and advisor/advisee relationships—and will require all reviewers to declare potential conflicts before assignment. Reviewing will be conducted via OpenReview, which provides built-in COI checks and reviewer assignment tools, ensuring that papers are only evaluated by non-conflicted reviewers. Final acceptance decisions will be made collectively by non-conflicted organizers.

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