Call for Papers

Journal of Universal Computer Science (J.UCS) Special Issue

Advances in Imitation Learning and Inverse Reinforcement Learning

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Background & Call for Manuscripts

Imitation learning and inverse reinforcement learning are two popular approaches to machine learning that have gained significant attention in recent years. These techniques are used to model the behavior of an expert agent, and to learn from that behavior to train a new agent to perform a task or solve a problem.

Imitation learning is a type of supervised learning that involves learning from examples provided by an expert agent. The goal of imitation learning is to train a new agent to perform a task or solve a problem by mimicking the behavior of the expert agent. Imitation learning faces challenges related to data quality, distribution mismatch between training and deployment, generalization to new situations, exploration-exploitation trade-off, biases in the behavior of the expert, multi-agent interactions, and safety. These challenges need to be properly addressed to avoid performance degradation and to imitate the expert accurately in real-world scenarios.

Inverse reinforcement learning, on the other hand, involves learning the underlying reward function that the expert agent is optimizing, and then using that reward function to train a new agent. Inverse reinforcement learning is a challenging problem that requires addressing several technical difficulties, including handling uncertainty, dealing with suboptimal or unobservable behavior, and scaling to large state and action spaces.

The use of imitation learning and inverse reinforcement learning has been applied to a wide range of applications, including robotics, autonomous driving, game playing, and natural language processing, among others.

This special issue aims to bring together researchers working on imitation learning and inverse reinforcement learning, to share their latest findings, challenges, and solutions. We will consider high-quality articles presenting new algorithms, theoretical analysis, or novel applications that advance the state-of-the-art in imitation learning and inverse reinforcement learning.

Some of the topics that could be covered in this special issue include, but are not limited to:

- Algorithms for imitation learning and inverse reinforcement learning;
- Applications of imitation learning and inverse reinforcement learning in robotics, autonomous driving, game playing, and natural language processing;
- Evaluation and comparison of different imitation learning and inverse reinforcement learning methods;
- Analysis of the theoretical properties of imitation learning and inverse reinforcement learning;
- Real-world challenges and limitations of using imitation learning and inverse reinforcement learning;
- Novel approaches and extensions to imitation learning and inverse reinforcement learning.

Deadlines

Submission by:	31 March 2024
Notification of first round decision:	31 May 2024
Revised submission by:	31 July 2024
Notification of final decision by:	15 October 2024
Final paper submission by:	30 October 2024
Anticipated publication date:	28 November 2024

Submission and Evaluation Procedure

The Journal of Universal Computer Science is a high-quality electronic publication that deals with all aspects of computer science. J.UCS has been appearing monthly since 1995 and is thus one of the oldest electronic journals with uninterrupted publication since its foundation. A number of special issues as well as the printed archive editions of the volumes are also available in print and can be ordered directly from J.UCS office.

Manuscripts must be submitted in PDF format, written in English with no direct or indirect reference to authors, and should not exceed 20 pages. Papers should be prepared according to the JUCS's guidelines for authors and should be submitted online to be included in the review process. Illustrations and tables must be provided as integrated parts of the manuscript. The guidelines for authors are available at:

https://lib.jucs.org/about#JUCSStyleGuide

Only novel research papers which are currently not under review at another event or a journal will be accepted for the review process. For more details, please also refer to:

https://lib.jucs.org/about#Special-Issues

Please submit your papers not later than 31 March 2024 using the following submission link:

https://easychair.org/my/conference?conf=jucsil2023

Each paper will be blind reviewed by at least 2 reviewers. According to the covered main subjects in the content, a selected set of reviewers with the appropriate expertise will be assigned.

Should further clarification be required, please contact the guest editors.