

CALL FOR PAPERS
SPECIAL SESSION ON

“Human-in-the-loop Learning System and its User-centric Methods”

The 2021 IEEE International Conference on Systems, Man, and Cybernetics (SMC 2021)

October 17-20, 2021 – Melbourne, Australia

(Code jgrt6)

Session Organizers:

Dr. Junpei Zhong – The Hong Kong Polytechnic University, Hong Kong

Prof. Ahmad Lotfi – Nottingham Trent University, UK

Dr. David Ada Adama – Nottingham Trent University, UK

Dr. Weihong Chin – Tokyo Metropolitan University, Japan

Session area:

Human-Machine Systems

Session description:

Human-in-the-Loop (HIL) means including human feedback into the training loop of the machine learning models to improve the quality of training and to augment the functions of the model. The key research problems in algorithms are how we can evaluate the uncertainty of a model’s prediction? How to leverage both active learning from a human and the optimization of the models? When we use hierarchical reinforcement learning, how can we achieve the goals when the reward is sparse? In sum, we should find an optimal solution at the trade-off between the model’s accuracy and efficiency in designing the HIL algorithms.

Apart from the algorithm design, another key issue in HIL research is from a user-centric perspective, in both data collection and model evaluation steps. Since the quality of the training datasets is also extremely important, how to integrate multi-modal data from the users with different sensing techniques, such as smart gloves made by flexible sensors, portable eye-trackers, portable brain imaging techniques, is another problem. How can we design the users’ subjective evaluation based on multi-modal signals? Furthermore, proper designs the interaction between machines and human could also relate to HCI and UX/UI fields etc.

This special session is a follow-up session of “HIL machine learning and its applications” in SMC2020. We offer an opportunity for researchers and practitioners in diverse fields from machine learning, robotics, designers or end-users to join the discussion.

A selection of the accepted papers are welcomed to submit their extended versions to a special issue of a journal we edit later this year, subject to rigorous peer review.

Topics of interest include, but are not limited to:

- **Human-Centric Design for Robots or other Intelligent Devices**
- **Human Guided Reinforcement Learning**
- **Human-robot Collaboration**
- **Human-robot Social Interaction**
- **Dialogue Systems with Human-in-the-loop**
- **Interpretable Machine Learning with Human-in-the-loop**
- **Active Learning and Continuous Learning**
- **Learning by Demonstration**
- **Human Factors in HCI/HRI**

- etc.

SUBMISSION

Papers must be submitted electronically for peer review through PaperCept by **April 5, 2021**: <https://conf.papercept.net/conferences/scripts/start.pl>. In PaperCept, click on the **SMC 2021** link “**Submit a contribution to SMC 2021**” and follow the steps. (Code jgrt6)

All papers must be written in English and should describe original work. For guidelines, please follow the SMC website link <http://ieeesmc2021.org/call-for-papers/>

DEADLINES

April 5, 2021: deadline for paper submission

May 26, 2021: notification of paper acceptance/rejection

July 12, 2021: deadline for final camera-ready papers.