

# Closing the Loop on Human-Robot Symbiosis: Human/Robot in-the-loop Machine Learning

## Call for Papers

Organised by: A. Shafti, R. Calandra, M.P. Deisenroth and A.A. Faisal

We are delighted to announce our full-day workshop on [Human/Robot in-the-loop Machine Learning](#), to be held at the IEEE/RSJ International Conference on Intelligent Robots and Systems ([IROS 2018](#)), Madrid, Spain, on October 1st, 2018.

Outside of the classic industrial environments, robots are not expected to operate in the vacuum and isolated from people. Robots are instead performing their tasks close to and in collaboration with or assistance of humans; be this delivery drones, self-driving cars, robot assisted care or collaborative industrial settings. We take inspiration from us humans: We interact in a perception-action loop, where actions have consequences and thus require prediction and reactions. This requires developing a meaningful model of the humans we are interacting with from observations and interactions. Thus, learning is the glue that enables us to link desired outcomes with purposeful actions; and in a digital, data-driven world, machine learning is at the core. We will explore in this workshop, using cross-disciplinary work, how to close-the-loop of modeling and predicting human interactions as well as human-robot interactions.

The workshop presents the opportunity for researchers in the field to present their latest work and use the presence of the community for in-depth, face-to-face discussions and networking. We encourage submission of work covering topics of interest within the workshop, including:

- Machine learning
- Human learning
- Reinforcement learning
- Computational Neuroscience
- Neurorobotics
- Multi-agent systems
- Multi-agent reinforcement learning
- Deep reinforcement learning
- Human-in-the-loop machine learning
- Robot-in-the-loop machine learning
- Human-robot interaction
- Human-robot collaboration

Please submit your contributions in the form of 4-page, extended abstracts as PDF, using the IEEE template (for [MS Word](#) or [L<sup>A</sup>T<sub>E</sub>X](#)). Submissions should be made through our [EasyChair portal](#). These will be reviewed by the workshop committee consisting of the organisers and a selection of our invited speakers. Selected papers are to be presented in poster form at the workshop.

**Deadline for submission is 15th of August 2018 AoE-time.**

**Website:** [www.FaisalLab.org/iros-2018-workshop](http://www.FaisalLab.org/iros-2018-workshop)

**Submissions:** [www.EasyChair.org/conferences/?conf=hrml2018](http://www.EasyChair.org/conferences/?conf=hrml2018)

**Email enquiries:** [a.shafti@imperial.ac.uk](mailto:a.shafti@imperial.ac.uk)