



ELO-X Fall School and Workshop on

Model Predictive Control and Reinforcement Learning

October 3-11, 2022

University of Freiburg

For industrial and academic researchers, in particular PhD students in engineering, mathematics, physics, and computer science.

The aim of this event is to give both theoretical background and hands-on practical knowledge in the field of Model Predictive Control (MPC) and Reinforcement Learning (RL). Participants will learn the main concepts of the two approaches along with their similarities and differences.

Content: The event will be divided into two parts: in the first week an intensive course about Model Predictive Control and Reinforcement Learning is taught by Joschka Boedecker and Moritz Diehl (both University of Freiburg). Course prerequisites and detailed content are available at:

<https://www.syscop.de/teaching/ss2022/model-predictive-control-and-reinforcement-learning>.

In the two last days of the event on Oct 10-11, invited external lecturers will present state-of-the-art approaches to Model Predictive Control and Reinforcement Learning:

- Melanie Zeilinger (ETH, Switzerland)
- Toshiyuki Ohtsuka (Kyoto University, Japan)
- Yuval Tassa (Google Deepmind, UK)
- Taylor Howell (Google Deepmind, UK / Stanford University, US)
- Rien Quirynen (MERL, Boston, Massachusetts, US)
- Silvia Mastellone (FHNW, Switzerland)
- Stefan Gering, Max. Manderla, Niels Van Duijkeren (Bosch Research, Renningen, Germany)

In addition to the scientific contents of the course, on Oct. 10 from 9:00-10:30, Frank Krüger and Christian Jäger (University of Freiburg) will teach how to plan and develop a research project. *Titles of all lectures and an updated timetable will be available on the event's webpage.*

Location and Schedule: The event will start with a welcome reception at 19:00 on Monday Oct. 3, 2022. The course will last from Tuesday Oct. 4 to Tuesday Oct. 11, 2022, from 9:00-18:00, in the main historical university building in the city center of Freiburg (Kollegiengebäude I, Platz der Universität 3, D-79098 Freiburg). Lectures and computer exercises take place on Oct. 4-7. In the weekend (Oct. 8-9), an optional social event is foreseen. The lectures from the invited speakers take place on Oct.10-11. On October 13-14 rooms will be reserved to exchange ideas and create connections among the participants (*optional and self-organized activity by the participants*).

Registration: Participation in the course costs 450 Euro for external PhD students and researchers, covering catering service during the whole event, the welcome receptions and the dinner on Friday Oct. 7. The optional social event on the weekend will require a minor cost contribution. To register or obtain additional information, please visit the up-to-date webpage of the event:

<https://www.syscop.de/event/elo-x-fall-school-and-workshop>



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