## **Doctoral Consortium KI 2022**

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It is my pleasure to collect in this chapter the high quality contributions of four young scientists who aim to achieve their PhD in the field of Artificial Intelligence. The papers have been selected from the six contributions which have been accepted for the doctoral consortium at KI 2022. The work has been presented in a PhD workshop at KI 2022 which took place online in Trier Germany, September 20, 2022.

The program started with a mentoring session in the morning. Both, mentors and PhD candidates chose an ice-breaker question from a trello board to introduce themselves and their research topics. We learned about some good advice that mentors received back in time, for instance to consider small conferences at the beginning of a research career. Multiple motivations have been discussed why to stay in research instead of making lots of money in industry. It became clear that AI is a fascinating research topic to spend a couple of years or entire research careers with. Then, the PhD candidates met their mentors to speak in private within breakout sessions.

Two paper sessions were dedicated to the presentation of the PhD students. The contributions addressed different sub-fields of AI, including multi-agent systems, reasoning about constraints, knowledge representation, learning and deep learning. The PhD projects of the presenters have in different states of maturity, ranging from first-year students to nearly finished theses. Everyone spoke about the research problem being addressed, the motivation for addressing the problem, related work, the proposed approach, and planned or already executed evaluation.

In the final session, Stefan Edelkamp shared some reflections on the ups and downs during the life of a PhD student from his own career and from cartoonist Jorge Cham. Despite we could not meet in presence, I enjoyed very much the oral presentations, the comments from the mentors and further audience, as well as the lively discussions on the manifold topics and research questions.

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appreciation deserves Stefan Edelkamp who gave a career talk "To PhD or not to PhD, that's the question". Thanks also to Ulrike Knauf helping with the proceedings and to the organisers from University of Trier having provided us so kindly with the necessary infrastructure, Webpage and help in any further issue that occurred.