



Collective Learning Dynamics

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Collective learning will become of vital importance not only in genuine multi-agent systems, such as mobility, swarm robotics, or public infrastructure, it is also crucial to consider when applied machine learning systems are changing the very same data they have been trained upon. The question of an adequate theoretical foundation for multi-agent learning, however, remains unanswered. I will show how techniques from evolutionary game theory and statistical mechanics can provide an improved understanding of the emerging collective learning dynamics in changing environments.

Short Bio

Wolfram Barfuss is a research scientist at the Tübingen AI Center, University of Tübingen, working on the dynamics of collective learning. He combines ideas from theoretical physics, complex systems, multi-agent learning, (evolutionary) game theory and social-ecology in order to uncover the fundamental principles of collective learning in changing environments. He obtained his PhD from Humboldt-University in Berlin.