Frans Oliehoek

Learning and using models for controlling complex environments

In reinforcement learning (RL), we develop techniques to learn to control complex systems, and over the last decade we have seen impressive successes ranging from beating grand masters in the game of Go, to real-world applications like chip design, power grid control, and drug design. However, nearly all applications of RL require access to an accurate and lightweight model or simulator from which huge numbers of trials can be sampled. In this talk, I will discuss some topics in model-based RL, in which this is not the case, but where we instead try to learn such models.

Dr. Frans A. Oliehoek is Associate Professor at Delft University of Technology, where he is a leader of the sequential decision making group, a scientific director of the Mercury machine learning lab, and director and co-founder of the ELLIS Unit Delft. He received his Ph.D. in Computer Science (2010) from the University of Amsterdam (UvA), and held positions at various universities including MIT, Maastricht University and the University of Liverpool. Frans' research interests revolve around intelligent systems that learn about their environment via interaction, building on techniques from machine learning, AI and game theory. He has served as PC/SPC/AC at top-tier venues in AI and machine learning, and currently serves as associate editor for JAIR and AIJ. He is a Senior Member of AAAI, Fellow of ELLIS, and was awarded a number of personal research grants, including a prestigious ERC Starting Grant.