

NITheCS Colloquium
Monday, 14 March 2022, 16h00 – 17h00
Prof Jonathan Shock (University of Cape Town)

‘A guided tour through the landscape of reinforcement learning’



ABSTRACT

This is an introductory walk through some of the basic ideas of reinforcement learning – the third arm of machine learning. This is perhaps less often talked about than supervised and unsupervised learning, but it shows fascinating promise, as well as gives us plenty of questions about our interactions with the world. It is the study of how agents interact with the world using trial and error.

I will discuss some of the most fundamental algorithms in RL, from model-based to model-free learning, and show some of the recent advances and challenges we still face in this area.

BIOGRAPHY

Jonathan Shock is an associate professor in the department of Maths and Applied Maths at the University of Cape Town (UCT).

Originally from Oxford, England, he completed his PhD at the University of Southampton in 2005, in applications of string theory to understanding quantum chromodynamics.

He then held postdoctoral research positions in Beijing, Santiago de Compostela and Munich before becoming a lecturer at UCT in 2013.

He has a wide array of research interests that cover machine learning (in particular, reinforcement learning and supervised learning on brain imaging data), theoretical physics and neuroscience.

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