

## Swissquote Conference 2019 on Artificial Intelligence in Finance

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**Title: Hedging an Options Book with Reinforcement Learning**

**Abstract:** In this talk we address the problem of how to optimally hedge an options book in a practical setting, where trading decisions are discrete and trading costs can be nonlinear and difficult to model.

Based on reinforcement learning (RL), a well-established machine learning technique we propose a model that is flexible, accurate and very promising for real-world applications. A key strength of the RL approach is that it does not make any assumptions about the form of trading cost. RL learns the minimum variance hedge subject to whatever transaction cost function one provides. All that it needs is a good simulator, in which transaction costs and options prices are simulated accurately.

Time permitting, we talk about a few different implementations of the RL algorithms (value, policy and DRL) and their impact on the hedging quality and how they generalize.