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Data Science Seminars

Friday

29

October

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Prediction of large bid-ask movements in equity options market using Neural Networks

Speaker

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Affiliation

BNP Paribas

When

October 29th, 14h30

Where

C6.2.56

Abstract

Financial markets are commonly described using complex mathematical and statistical models. Those models are used by financial institutions for internal pricing of financial derivatives, including to fulfill the legal requirements to hedge their positions and protect themselves against dangerous movements in the market. This creates an interest for data-based models, which when trained on historical data could "learn" the ability to foresee future large movements. We will present a practical study on the development of a neural network model for the prediction of intraday bid-ask variation in options market of equity derivatives. Intended to warn market markers of an upcoming large movement of the prices, this model was trained on 2-year historical time-series of market data of various European stocks and indices. While our model has shown the ability to predict the absolute move of the return on bid-ask in the next 5 minutes, its accuracy is currently too limited for the mentioned application.

Short bio

Charles Mignon is a quantitative engineer at BNP Paribas in Lisbon. His background is in Physics/Engineering with an optical engineer degree from Paris (France) and a PhD from Philips Research in Eindhoven (Netherlands). His interests are related to mathematical/data-based modelling, statistical analysis and quantitative research.