INTENSIVE PROGRAMME

ADVANCED TOPICS IN ARTIFICIAL INTELLIGENCE IN FINANCE

(6 ECTS)

11 March – 22 March 2024
University of Bologna (Italy)

COURSE OUTLINE

About the topic

The increasing complexity of financial markets has turned technology into the key to extracting information hidden in the huge volume of noisy background data. The construction of reliable and robust investment portfolios is the main goal of fund managers in banks and asset management companies, both for investment funds and HN private clients. Such portfolios need to incorporate company market views into forward-looking market scenarios, ensure the right degree of diversification avoiding excessive concentration and respond smoothly to investing environment shifts. Artificial Intelligence (AI), specifically Machine and Deep Learning methods applied to asset allocation, allows to change completely the classic 'portfolio theory' mindset, that is still prevailing in most of the industry worldwide and has got insurmountable and serious shortcomings that have been affecting the effectiveness of the asset portfolio construction process since its foundation. In this workshop we will build the full asset portfolio construction process in an AI modeling environment, with precise effort on defining the dynamic probabilistic structure of 'market regimes' and the definitions of input data for portfolios that adapt to future scenarios in an optimal way. In this journey we will revise and employ many of the AI most powerful tools, mainly ensemble random forests, neural networks and hidden Markov models in a multivariate setting. The participants will work on this project in a professional way, with the aim of building a fully operational process in the reality of the financial industry, blending theory with practice on a top financial subject of today's markets.

Didactic concept

This Intensive Programme is a unique opportunity to take part in an international event, to deepen your knowledge on current challenges for Artificial Intelligence applications in financial markets, to work in contact with professionals from important financial companies and to experiment professional group work in a multinational team.

The course is organized in the form of a workshop including both lectures and tutorials offered by local teachers and distinguished guest experts. The classes will provide students both a theoretical and methodological background to understand the application of the main AI techniques to the problem of dynamic portfolio management both for proprietary and client portfolios. This intensive program also aims to provide students critical skills to be able to understand concepts and tools to analyze AI applications also from the point of view of risk management.

Intercultural learning will be an integral part of the onsite local course experience. In addition to the diversity of the case group, consisting of students that will represent each of the four participating higher education institutions, a local expert will provide an input into topics such as cross-cultural training, intercultural stimulation, cultural awareness training, andhow to work in international teams.

Social programme

To provide an insight into the rich cultural environment of the city of Bologna the academic programme will be complemented by a social programme offered free of charge.

VENUE

University of Bologna

Department of Statistical Sciences - Via Belle Arti 41, 40126, Bologna, Italy

School of Economics and Management – Piazza Scaravilli, 2, 40126, Bologna, Italy

WHO CAN APPLY?

You can apply to participate in the Intensive Programme if you are enrolled in one of the following master programmes:

University of Applied Sciences bfi Vienna
Master Programme: Quantitative Asset and Risk Management (ARIMA)

Universityof Bologna
Master Programme: Quantitative Finance (QF)

University of Economics in Katowice
Master Programme: Quantitative Asset and Risk Management (ARIMA) Alexandru

Ioan Cuza University of Iaşi
Master Programme: Finance and Risk Management (FRM)

COSTS

Participation in the Intensive Programme "Advanced Topics in Energy Market and Finance" is free of charge. Travel and subsistence costs must be covered by the student.

APPLICATION

Application deadline: **01 December 2022**

Application process

Please find the details regarding application process and the application form online on the INTQUANT project website in the menu "for students": www.quantitativefinance.eu

A maximum of five students from every involved university can participate in the Intensive Programme. Participants will be selected by their home institution on the basis of a motivation letter (25%), English language skills (25%) and previous academic track record (50%).

CONTACT

University of Bologna

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