Warsaw AI Suptech

LOCATION: Polish Financial Supervision Authority, Warsaw

DATE: 28-29.01.2021

REGISTRATION LINK

EVALUATION LINK

On 28th and 29th of January 2021 the members of the Polish FinTech project team, the researchers from the Quantitative Finance Department of the Faculty of Economic Sciences, University of Warsaw will provide a training for the Polish Financial Supervision Authority related to artificial intelligence and its applications in finance with a special focus on robo-advisory and related regulatory concerns.

On the first day prof. Piotr Wójcik will start with a short presentation of the FinTech project and then he will introduce the topic of artificial intelligence (AI) and its applications in finance with a main focus of robo-advisory. In addition, prof. Piotr Wójcik will discuss opportunities and threats related to the fast developing robo-advisory industry, market risk and compliance risk together with other challenges for regulators. Then he will present the results of research conducted by FinTech project participants. In particular prof. Wójcik will focus on three research papers. Giudici et al. (2019) in **Network models to improve robo-advisory portfolio management** propose an innovative approach to building effective portfolios covering financial instruments with high Volatility, the extension of traditional Markowitz model. Schwendner et al. (2019) in **Convergence and divergence in European Bond Correlations** discuss the short-term impact of three political situations concerning the EU countries on the correlation of rates of return between the treasury bonds markets. In the end, Bussman et al. (2020) that show the applications of **Explainable Machine Learning in Credit Risk Management.**

On the second day Marcin Chlebus, PhD and Janusz Gajda, PhD will provide a practical full-day workshop with R code related to **eXplainable Artificial Intelligence (XAI)** starting with introduction and motivation and followed by the explanation of local and global measures of model agnostic explainability and their interpretation.

ABOUT THE EU GRANT

FinTech (Financial Technology) means "technology- enabled financial innovation." There is a strong need to improve the competitiveness of European FinTech, creating a common regulatory approach across all countries. This can help encourage innovations in banks and in B2B FinTech companies, in the application of big data, artificial intelligence and blockchain technologies, while authorities and researchers assess their risks. Europe has a broad mosaic of regulatory landscapes and technological innovations in finance. Regulators must move quickly and make important decisions about emerging scientific and business opportunities, without stifling their economic potential. The Fin-Tech project, under the EU's Horizon2020 funding scheme, aims to create a European FinTech risk management hub. To this end, it will develop ready-to-use FinTech risk management models which will be dynamically updated and aligned with best research and practice.

The project includes training to national regulators (suptech) and to European fintech hubs (regtech) by a group of independent experts that have leading research expertise in the measurement of the risks that arise from the application of big data, artificial intelligence and blockchain technologies and, specifically, of those arising from innovative payments, peer to peer lending and financial robo-advisory.

The project has started on January 1st, 2019 and will last until June 2021. The activities of the project include 6 research workshops with international regulators, 48 hours of suptech workshops for each national supervisor and 6 regtech workshops for Fintechs and innovative banks. Financial institutions will be the ultimate validator of the proposed FinTech risk management solutions, as the project will involve the risk management functions of a selected group of banks in writing a final assessment of the project's output (FinTech risk management models).

Consortium Partners

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SUPTECH WORKSHOP II
ARTIFICIAL INTELLIGENCE,
MARKET RISK
AND ROBO-ADVISORY
Fin–Tech HO2020 project
28-29 JANUARY 2021
Urząd Komisji Nadzoru Finansowego
Warsaw

DAY I: 28 January 2021, 8:30 – 16.30

8.30 – 9.00	**Registration**
9.00 – 9.30	**Opening, introduction and information about the FIN-TECH project** prof. Piotr Wójcik
9.30 – 11.00	**Robo-advisory and other applications of artificial intelligence in finance** prof. Piotr Wójcik
11.00 – 11.15	**Coffee break**
11.15 – 13.15	**Robo-advisory - opportunities and threats, market risk and compliance risk, challenges for regulators** prof. Piotr Wójcik
13.15 – 14.15	**Lunch break**
14.15 – 16.15	**Discussion of sample scientific research conducted by representatives of the consortium implementing the project** prof. Piotr Wójcik 1. **Giudici i in. (2019), Network models to improve robo-advisory portfolio management** 2. **Baumoehl (2019), Are cryptocurrencies connected to forex? A quantile cross-spectral approach** 3. **Schwendner i in. (2019), Convergence and divergence in European Bond Correlations** 4. **Hochreiter (2019), Artificial Intelligence for robo-advisory to compute optimal asset allocations**
16.15 - 16.30	**Discussion and closing the first part of SUPTECH WORKSHOP II**

DAY 2: 29 January 2021, 8:30 – 16.30

8.30 – 9.00	**Registration**

9.00 – 9.30

Explainable Artificial Intelligence - Introduction and Motivation
Dr Marcin Chlebus, dr Janusz Gajda

9.30 – 10.45

Global interpretation of the model: assessment of the model quality (residual analysis), assessment of the importance of variables (local methods of assessing the importance of variables, permutation based methods of assessing the importance of variables), scenario analyzes of the "what if" type (Partial Dependence Plot, Accumulated Local Effects)
Dr Marcin Chlebus, dr Janusz Gajda

10.45 – 11.00	**Coffee break**

11.00 – 12.30

Local interpretation of the model: Local Surrogate (LIME), Shapley Values, SHAP (SHapley Additive exPlanations), BreakDown
Dr Marcin Chlebus, dr Janusz Gajda

12.30 – 13.30	**Lunch break**

13.30 – 16.00

Practical workshops using R:

- overview of available tools for the interpretation of machine learning models

- a practical example based on data used to build a PD scoring model (credit risk)

Dr Marcin Chlebus, dr Janusz Gajda

16.00 - 16.30

Discussion and closing the second part of SUPTECH WORKSHOP

Link to the registration form SUPTECH WORKSHOP II