

## Report on the outcomes of a Virtual Mobility<sup>1</sup>

Action number: CA19130

Grantee name: Branka Hadji Misheva

### **Virtual Mobility Details**

Title: Towards good practices for applying eXplainable Artificial Intelligence (XAI) for forecasting

Start and end date: 30/10/2023 to 31/10/2023

### **Description of the work carried out during the VM**

Description of the virtual collaboration and activities carried out during the VM, with focus on the work carried out by the grantee. Any deviations from the initial working plan shall also be described in this section.

*(max. 500 words)*

During the VM, a series of relevant collaborations have taken place and we have produced a specific output that directly contributes to deliverable 2 of the COST Action: *Report/outputs on good examples and best practices for a transparent finance industry with guidelines to improve transparency. Specifically:*

- **Collaboration with Joerg Osterrieder, Ioana-Florina Coita, Petre Lameski, and Marcos Machado on best practices for XAI deployment in Finance.** Meetings centred around reviewing/discussing the existing literature on explainability in AI systems in general and the emerging gap between explainability in theory and practice.
- **Study: A Hypothesis on Good Practices for AI-based Systems for Financial Time Series Forecasting: Towards Domain-Driven XAI Methods.** We have written a new paper that outlines a set of good practices for deploying explainability in AI systems within the finance sector. These practices aim to address the unique challenges and requirements of the financial industry, ensuring that AI-based models not only provide accurate predictions but also offer transparency, interpretability, and compliance with regulatory standards. By adhering to these practices, financial institutions can navigate the complex landscape of AI deployment in finance with confidence and effectiveness. Specifically, in the paper, we explore the best practices focusing on data quality, audience-specific methods, and the consideration of data properties, particularly feature dependence.
- **Posts/dissemination:** presentation of the work through social media channels and workshops organized in Zurich with industry representatives.

<sup>1</sup> This report is submitted by the grantee to the Action MC for approval and for claiming payment of the awarded grant. The Grant Awarding Coordinator coordinates the evaluation of this report on behalf of the Action MC and instructs the GH for payment of the Grant.

### **Description of the VM main achievements and planned follow-up activities**

Description and assessment of whether the VM achieved its planned goals and expected outcomes, including specific contribution to Action objective and deliverables, or publications resulting from the VM. Agreed plans for future follow-up collaborations shall also be described in this section.

*(max. 500 words)*

The Virtual Mobility (VM) conducted during the specified period achieved its planned goals, making significant contributions to the Action's Deliverable 2.

Outcomes:

- **New publication available on arXiv.** A paper titled *A Hypothesis on Good Practices for AI-based Systems for Financial Time Series Forecasting: Towards Domain-Driven XAI Methods* was published on arXiv.

Future Follow-up Collaborations:

- Planned podcast with Vasile Strat to discuss the study's findings. The podcast will discuss in detail the recommendations for good practices in deploying explainability in AI-based systems for finance.
- Scheduled presentation of the work done during the MIER 2023 conference, scheduled for 15-16 November 2023 in Slovakia.
- Planned presentation of the work done during the next WG2 meeting which will take place in GP4.
- The paper is available at the following link: <https://arxiv.org/abs/2311.07513>
- Submission of the paper to a peer-reviewed journal (preferably at level 3+ like: Quantitative Finance, Journal of Empirical Finance, European Journal of Finance, Journal of International Financial Markets Institution and Money, International Review of Financial Analysis, Journal of Banking and Finance, Decision Support Systems, Expert Systems with Applications, International Journal of Electronic Commerce, European Journal of Operational Research, International Journal of Forecasting, Journal of the Operational Research Society, Journal of Economic Dynamics and Control, Journal of Economic Behavior and Organization, Economics Letters, and Annals of Operations Research) to be done by the end of 2024.