BRD research fellowships 2021

Center for Data Science in the Department of Computer Science, University of Bucharest and BRD – Groupe Societe Generale, started a collaboration in 2019. In this framework, BRD regularly sponsors research to investigate application of data science in the financial area.

This year, several fellowships will be awarded to young researchers interested to participate in the project.

BRD research fellowships

Research fellowships for a period of up to 9 months will be awarded. The value of a fellowship will be between 500-1200 euros/month, depending on the experience of the researcher, for a half-time position (4 hours/day). Also a smaller part-time involvement (2 or 3 hours/day) may be arranged.

What type of research will be performed

The research will be mostly of an applied nature, but fundamental research that has potential to be useful to financial use cases is also encouraged.

The research topics explored in this year's round of fellowships are the following:

Explainable AI for court decision models: We will explore the decision process of artificial intelligence models developed to predict court decisions for lawsuits and for the financial domain. The goal is to understand how the model works and to provide explanations for individual model decisions. Ideally, the research should find general features that the model pays the most attention to, synthesizing exemplar inputs and showcasing deciding factors for a particular prediction.

Financial trading optimization: The recent financial trading techniques rely on artificial intelligence models that explore how to maximize the profit through setting optimal prices. One purpose of this research is the identification of the best learning model that could maintain a balance between thresholds that are attractive for the user and those that generate maximal profit. Secondly, detecting what features of the user entities that are most important for the model would provide explanations for the optimal decisions. By showcasing deciding factors for a particular prediction will be also important.

Anomaly detection in computer networks traffic: We plan to explore the continuous monitoring and analysis of network traffic (data packet information, meta-data, and signatures) for unusual isolated events or long-term trends that are developing. The goal is the early identification of potential security threats and their immediate mitigation using state-of-the-art anomaly detection algorithms developed in the machine learning community. Ideally, real-time identification of anomalies in the computer network traffic will lead to early detection of security threats.

The successful candidates will work under the supervision of senior researchers affiliated with the Center for Data Science and BRD Innovation Lab (an R&D department of BRD). The results of the research will be submitted to suitable conferences or journals (travel expenses to present the work at conferences may be awarded separately) and the source code associated with the experiments will be made open source. Relevant training data will be provided by BRD experts.

Who can apply

Any postdoctoral researcher with experience in machine learning, explainable AI, or natural language processing, as well as any PhD student whose research topic is related to the above domains is encouraged to apply. Moreover, other researchers or BSc/MSc students with skills of interest for the specific research area will be considered.

How to apply

Please send **until 23rd of June 2021** your CV, together with a short paragraph on why you would like to participate, per email to datascience@cs.unibuc.ro

A panel of experts will evaluate the fellowship submissions and selected candidates will be invited for a short online interview on **25th of June**.