THE 15TH INTERNATIONAL CONFERENCE ON BRAIN INFORMATICS 2022

II EDITION *- SPECIAL SESSION ON*

EXPLAINABLE ARTIFICIAL INTELLIGENCE FOR UNVEILING THE BRAIN: FROM THE *BLACK*-BOX TO THE *GLASS*-BOX (XAIB)

Half day

ORGANIZER: Dr. Alessia SARICA, Assistant Professor,
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Alessia SARICA is Assistant Professor of Applied Medical Technology and Methodology at the Neuroscience Research Center, Magna Graecia University of Catanzaro, Italy. She received the Ph.D. degree in Biomedical and Computer Science Engineering in 2015, and her main research field is Machine Learning on Neuroimaging and Neuropsychological data for the early and differential diagnosis of neurodegenerative diseases. In particular, She is an expert in decision trees, ensemble learning, Random Forests, feature selection and interpretable Machine Learning, which she applied for the prediction of Alzheimer's disease, Parkinsonisms and Motor Neuron Diseases.

CALL FOR PAPERS AND ABSTRACTS

Nowadays, Artificial Intelligence (AI) and Machine Learning (ML) are widely used for the exploration of the Brain and their application ranges from the processing and analysis of neuroimages to the automatic diagnosis of the neurodegenerative diseases. However, without an explanation of the ML findings, the automatic medical and clinical decisions are still hard to be trusted. Indeed, the *black*-box nature of most algorithms, although providing high accuracy, makes the interpretation of the predictions not immediate. Thus, in recent years the need of interpretable and explainable AI, especially in Healthcare, got stronger, as well as the need of *glass*-box models able to show a trade-off between intelligibility and optimal performance.

The aim of this Special Session is to collect scientific works devoted to the new challenge of Explainable Artificial Intelligence (XAI) applied on Neuroscience, Neuroimaging and Neuropsychological data for unveiling the Brain. *Researchers are encouraged to submit high quality papers or abstracts on novel or state-of-the-art intelligible, interpretable, and understandable AI approaches, such as post-hoc explainability techniques both model-agnostic (e.g., lime, shap) and model-specific (e.g., CNN, SVM, Random Forests), and transparent models (i.e., linear/logistic regression, decision trees, GAM), with special attention to global and local explanations. Systematic reviews and meta-analyses are also welcome.*

THE HISTORY OF XAIB

In the past edition, the XAIB hosted three of the most important scientists in the field of the interpretable machine learning, Dr. Rich Caruana, Dr. Michele Ferrante and Dr. Dimistris Pinotsis. They talked about the state-of-the-art of XAI, as well as their current research and the high potential that the explainability of ML showed in acquiring new knowledge about the Brain and its mechanisms. In case you missed the first edition of XAI, here the full video of the special session 2021.

POTENTIAL PROGRAM COMMITTEE MEMBERS AND INVITED SPEAKERS

Coming soon…