

# **EXPLAINABILITY 2024**

The First International Conference on Systems Explainability

November 17<sup>th</sup> – 21<sup>st</sup>, 2024

Valencia, Spain

# **EXPLAINABILITY 2024 Editors**

Petre Dini, IARIA, USA/EU

#### Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2024) by International Academy, Research, and Industry Association (IARIA) Please refer to the Copyright Information page.

Printed with permission by Curran Associates, Inc. (2025)

International Academy, Research, and Industry Association (IARIA) 412 Derby Way Wilmington, DE 19810

Phone: (408) 893-6407 Fax: (408) 527-6351

petre@iaria.org

### Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400 Fax: 845-758-2633 Email: curran@proceedings.com Web: www.proceedings.com

## **Table of Contents**

A Two-Dimensional Computational Model for DNA/RNA Classification Dorota Bielinska-Waz and Piotr Waz	1
3D-Dynamic Representation of DNA/RNA Sequences: A Review Piotr Waz and Dorota Bielinska-Waz	3
Explain Yourself Holger Ziekow, Peter Schanbacher, and Valentin Gottisheim	5
Explainable Facial Emotion Recognition with the use of Vision Transformers Isidoros Perikos, Ioannis Kollias, Vaggelis Kapoulas, and Michael Paraskevas	11
An XAI Approach on the Capacity of Transformers to Learn Time Dependencies in Time Series Forecasting Alberto Mino Calero, Adil Rasheed, and Anastasios M. Lekkas	17
A Medical Decision Support System for Explainable Multimodal Detection of Non-Small Cell Lung Cancer Using Clinical and PET Data Anna Feleki, Nikolaos Papandrianos, Ioannis Apostolopoulos, Elpiniki Papageorgiou, Nikolaos Papathanasiou, Dimitrios Apostolopoulos, Jose Maria Alonso Moral, and Javier Andreu-Perez Andreu-Perez	27
Analyzing Complex Models by Orthogonal Input-Output Decompositions Pavel Loskot	33
The Graph Model of Combinatory Logic as a Model for Explainability Thomas Fehlmann and Eberhard Kranich	40