

From Graph Neural Networks to Explainable AI: comprehending and trusting Machine Learning algorithms



Report of Contributions

Contribution ID: 1

Type: **not specified**

Conclusive remarks and Close-out

Friday, 22 September 2023 12:00 (30 minutes)

Contribution ID: 2

Type: **not specified**

Keynote talk: Actionable and responsible AI in medicine

Thursday, 21 September 2023 17:30 (1 hour)

In this talk Professor Lio will present applications of AI in medicine, focusing on how to build a digital patient twin using graph and hypergraph representation learning and considering physiological (cardiovascular), clinical (inflammation) and molecular variables (multi omics and genetics). He will discuss methodologies that help keeping the clinicians in the loop to avoid excessive automation using logic and explainer frameworks.

Pietro Li'o Is Professor in Computational Biology in the AI division and internationally leading researcher in Machine Learning and Computational Biology, member of the Cambridge centre of AI and Medicine and The European Laboratory for Machine Learning (Ellis). He holds two PhDs: one in nonlinear dynamics and complex systems and the second in genomic sciences, therefore interfacing complex systems, machine learning and biomedicine. He is currently contributing the scientific community in developing graph representation learning methods and enhancing their interpretability, particularly in the biomedical fields.

Presenter: Prof. LIÒ, Pietro (University of Cambridge)

Contribution ID: 3

Type: **not specified**

Higgs boson pair production at the LHC: (h→bb)+(h→tautau) final states

Wednesday, 20 September 2023 17:05 (5 minutes)

Presenter: GWILLIAM, Carl

Session Classification: Flash talks - tell us about your project

Contribution ID: 4

Type: **not specified**

GNN for SUSY searches: the Wh + MET channel

Wednesday, 20 September 2023 17:10 (5 minutes)

Presenter: CARMIGNANI, Joseph

Session Classification: Flash talks - tell us about your project

Contribution ID: 5

Type: **not specified**

Improving Gamma ray image quality from the SIGMA detector

Wednesday, 20 September 2023 16:50 (5 minutes)

Presenter: Mr GRIFFITHS, Owain (Liverpool)

Session Classification: Flash talks - tell us about your project

Contribution ID: 6

Type: **not specified**

Constraining the Complex Relationships Between Galaxies and their Dark Matter Haloes with Machine Learning

Wednesday, 20 September 2023 16:45 (5 minutes)

Presenter: Mr ROBERTS, Ryan (LJMU)

Session Classification: Flash talks - tell us about your project

Contribution ID: 7

Type: **not specified**

Tau Identification and Classification with GNN - how to improve

Wednesday, 20 September 2023 17:15 (5 minutes)

Presenter: MCNULTY, Robert

Session Classification: Flash talks - tell us about your project

Contribution ID: **8**

Type: **not specified**

Welcome, introduction and useful info

Wednesday, 20 September 2023 13:00 (10 minutes)

Presenter: D'ONOFRIO, Monica

Contribution ID: 9

Type: **not specified**

Colab primer GNN

Wednesday, 20 September 2023 15:15 (1h 30m)

https://github.com/alessiodevoto/gnns_xai_liverpool

Session Classification: Designing (graph) neural networks