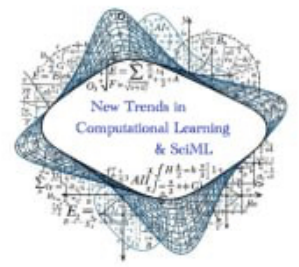




UNIVERSITÀ

**LUM**GIUSEPPE  
DEGENNARO

**july 2 –4, 2025**  
LUM University  
Casamassima (BA)  
**11:30**

# 1<sup>st</sup> Workshop New Trends in Computational Learning & SciML

**1<sup>st</sup> day** **wednesday july 2, 2025**  
Aula Aldo Rossi

**15:30 – 18:30** **Introduction to Workshop**

15:30 **Registration**  
16:00 **Opening Remarks on “New Trends in Computational Learning”, by Organizers**  
16:30 **Organizer Speaker**  
Dr. Silvia Licciardi  
University of Palermo  
**Deep & Machine Learning. Applications in the Energy Field**  
17:00 **Problem-Posing Session & Networking, brainstorming between speakers, researchers and students**

**20:30** **Welcome Dinner in Bari**

**2<sup>nd</sup> day** **thursday july 3, 2025**  
Aula Aldo Rossi

**9:30 – 11:00** **Plenary Session 2**

9:30 **Invited Speaker**  
Prof. Salvatore Cuomo  
University of Naples  
**Explainable Scientific Machine Learning: Theoretical and Practical Perspectives**  
10:00 **Invited Speaker**  
Dr. Giovanni Pagano  
University of Salerno  
**Step-by-step Discrete-Time Physics-Informed Neural Networks for Partial Differential Equations**  
10:30 **Invited Speaker**  
Dr. Sabrina F. Pellegrino  
Bari Polytechnic  
**Spectral Collocation Methods for Nonlocal Peridynamic Problems and Applications**  
11:00 **Invited Speaker**  
Prof. Marina Popolizio  
Bari Polytechnic  
**Fractional calculus in Network Theory**  
11:30 **Coffee Break**

**12:00 – 13:30** **Plenary Session 2**

12:00 **Invited Speaker**  
Prof. Roberto Garrappa  
University of Bari  
**Numerical Challenges and Advances in Variable-Order Fractional Differential Equations**

12:30

**Invited Speaker**

Dr. Marco Berardi  
CNR – IRSA Bari

**Richards Equation and Optimal Irrigation**

**Invited Speaker**

Dr. Luca Saluzzi  
University of Rome

**Exploiting Sparsity in Data-Driven Surrogate Models for High-Dimensional Feedback Control Problems**

13:30

**Lunch**

**15:00 – 18:00** **Plenary Session 3**

15:00

**Invited Speaker**

Prof. Giuseppe Fanizza  
LUM University

**Energy cascade in a semilinear peridynamics model**

15:30

**Invited Speaker**

Dr. Fabio Difonzo  
LUM University

**Innovative Numerical Methods for Diffusion**

**Problems**

16:00

**Invited Speaker**

Dr. Mariateresa Bruni  
CNR – IRSA Bari

**Time series analysis and machine learning approaches for soil moisture prediction in precision irrigation**

16:30

**Open Discussion – Q&A – Hands on**

**3<sup>rd</sup> day** **friday july 4, 2025**  
Aula Aldo Rossi

**9:30 – 11:00** **Plenary Session 4**

9:30

**Invited Speaker**

Dr. Angela Martiradonna  
University of Foggia

**From ecological threat to economic resource: Managing the blue crab invasion in Mediterranean wetlands**

10:00

**Invited Speaker**

Dr. Laura Selicato  
CNR – IRSA Bari

**Bi-Level Optimization Strategies for Sparse and Interpretable Learning in NMF**

10:30

**Panel Discussion: Hands-On Results and Future Collaborations**

11:30

**Closing Remarks**

Dr. Vincenzo Schiano Di Cola  
Organizer

**Organizing committee:** Dr Vincenzo Schiano Di Cola (CNR-IRSA Bari) Dr. Silvia Licciardi (University of Palermo) Dr. Fabio Difonzo (LUM University)



American Institute of Mathematical Sciences

