SETN2024
September 11-13 | Piraeus, Greece

University of Piraeus

FINAL PROGRAMME

DAY 1 (Wednesday, 11/09/2024)		
8:15-17:00	REGISTRATION	
8:45- 9:00	OPENING CEREMONY	
9:10- 11:10	**TUTORIAL** "Multimodal Graph Generative **AI"**	
11:10-11:30	COFFEE BREAK	
11:30-13:30	W1 "AI Driven Knowledge Graph Construction"	
13:30-14:30	LUNCH	
14:30-15:30	KEYNOTE SPEECH: P. KOUMOUTSAKOS	
15:30-17:30	**TUTORIAL** "LLMs Introduction and Challenges"	
17:30-20:00	**TUTORIAL** "Introduction to Formal Argumentation"	W2 “AI in Natural Sciences and Technology”
20:00-21:15	WELCOME RECEPTION (Freddo all day bar)	

DAY 1

KEYNOTE (14:30 – 15:30, MAIN)

Artificial Intelligence and Computational Science: There is Plenty of Room in the Middle
Petros Koumoutsakos, Harvard School of Engineering and Applied Sciences
Chair: Themis Papagiotopoulos, University of Piraeus

W1 AI DRIVEN GRAPH CONSTRUCTION (11:30-13:30, MAIN)

Chair Maria Papoutsoglou

Towards Enriching the Electric Vehicle Knowledge Graph by Linking it to DBpedia
Ioannis Kivrakidis, Emmanouil Rigas and Nick Bassiliades.

An Ontology-Knowledge Graph Based Context Representation Scheme for Robotic Problems
Konstantinos Dimitropoulos and Ioannis Hatzilygeroudis.

AI-based knowledge graph construction and distributed storage for collaboration on the Sustainable Development Goals
Irene Kilanioti and George Angelos Papadopoulos.

Ontology Data Insights and Alerts for Wildfire Protection
Marios Iacovou, Stelios Kontogiannis and Konstantinos Avgerinakis

Mapping the Current Status of CTI Knowledge Graphs through a Bibliometric Analysis
Maria Papoutsoglou, Georgios Meditskos, Nick Bassiliades, Efstratios Kontopoulos and Stefanos Vrochidis.

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DAY 1

W2 AI IN NATURAL SCIENCES AND TECHNOLOGY (17:30-20:00, MAIN)

Chair Christofors Rekatsinas

Invited talk
Aurora: A Foundation Model of the Atmosphere
Prof. Paris Perdikaris

Molecular Simulation of Coarse-grained Systems using Machine Learning
Dimitrios-Paraskevas Gerakinis, Eleonora Ricci, George Giannakopoulos, Vangelis Karkaletsis, Doros N. Theodorou and Niki Vergadou

Machine Learning Applications in Nanotechnology Manufacturing: From Etching Accuracy to Deposition Prediction Learning
Alex Kondi, Efi-Maria Papia and Vassilios Constantoudis

A Mixture Density Network approach in evaluating energy-dependent fission yields Learning
Vaia Prassa and Vasilis Tsioulos

Self-Adaptive Optimization of Coefficients in Multi-Objective Loss Functions
Spilios Dellis, Eleonora Ricci, Dimitris-Paraskevas Gerakinis, Niki Vergadou and George Giannakopoulos

Refining Flow Structures with Deep Learning and Super Resolution Methods
Filippos Sofos, George Sofiadis and Antonios Liakopoulos

Inverse design of Hexagonal Moiré Materials: Machine Learning for tunable pore properties – Lightning talk
Efi-Maria Papia, Alex Kondi and Vassilios Constantoudis

DAY 1

TransChem: Effective Pre-training Enhances Molecular Property Prediction – Lightning talk
Dimitrios Kelesis, Eirini Spyropoulou and Elias Zavitsanos

Solving Linear Elasticity Problems using Physics-Informed Neural Networks – Lightning talk
Petros Kafkas, George Giannakopoulos and Christoforos Rekatsinas

Comparing Prior and Learned Time Representations in Transformer Models of Timeseries – Lightning talk
Natalia Koliou, Tatiana Boura, Stasinos Konstantopoulos, Georgios Meramveliotakis and George Kosmadakis

Multi-fidelity Bayesian Optimization for Efficiently Sampling the Design Space of Functionalized Nanoporous Materials (Short) – Lightning talk
Ioannis Theocharis, Panagiotis Krokidas, Vassilis Gkatsis and George Giannakopoulos

Enalos Cloud Platform: A User-Oriented Approach to Cheminformatics and Advanced Materials Informatics (Short) – Lightning talk
Dimitra-Danai Varsou, Andreas Tsoumanis, Panagiotis D. Kolokathis, Dimitris G. Mintis, Konstantinos D. Papavasileiou, Nikolaos K. Sidiropoulos, Georgia Melagraki and Antreas Afantitis

Use case of Symbolic Regression in Moiré patterns using simulated data (Short) – Lightning talk
Efi-Maria Papia, Alex Kondi and Vassilios Constantoudis

Critical Node Detection in Sparse Graphs using Hopfield Neural Networks (Short) – Lightning talk
Vicky Papadopoulou-Lesta, Kyriacos Neocleous and Ioannis Michos

DAY 1

TUTORIALS

Multimodal Graph Generative AI (9:10-11:10, MAIN)

Michalis Vazirgiannis, LIX Ecole Polytechnique, France

LLMs Introduction and Challenges (15:30-17:30, MAIN)

Michalis Vazirgiannis, LIX Ecole Polytechnique, France,
Konstantinos Skiannis, University of Ioannina, Greece

Introduction to Formal Argumentation (17:30-19:30, Room 009)

Antonis Bikakis, University College London, UK

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FINAL PROGRAMME

DAY 2 (Thursday, 12/09)		
8:30-17:00	REGISTRATION	
9:00-9:45	KEYNOTE SPEECH: G. TSOUMAKAS	
9:45-10:00	COFFEE BREAK	
10:00-12:30	S1 Machine Learning and Deep Learning	W3 Responsible AI
12:30-14:00	S2 Optimization and Search	
14:00-15:30	LUNCH & EETN ASSEMBLY	
15:30-16:30	PhD AWARDS SESSION	W4 Cognitive Robotics
16:30- 18:30	S3 Data driven and Knowledge Based Methods	
18:30- 20:00	S4 NLP and LLMs	
20:15 – 22:30 CONFERENCE DINNER & AWARDS (SALTY SEASIDE)		

DAY 2

KEYNOTE (9:00 – 9:45)

Neural Abstractive Summarization: Methods and Applications

Grigorios Tsoumakas, Department of Informatics, Aristotle University of Thessaloniki

Chair: Maria Halkidi, University of Piraeus

S1 MACHINE LEARNING AND DEEP LEARNING (10:00-12:30, MAIN)

Chair Orestis Telelis

Assessing Bias in Self-supervised and Supervised Models for Temporal Data Maria Liatsikou, Sofia Yfantidou and Athena Vakali
A Computationally Efficient Second Order Deep Learning Training Algorithm with Adaptive Momentum Flora Sakketou and Nicholas Ampazis
Mean Teacher with Stochastic Restoration and Contrastive Learning for Domain Adaptive Object Detection Panagiota Moraiti, Lazaros Tsochatzidis, Ilias Papadeas and Ioannis Pratikakis
Prediction of Drug-Drug Interactions with Zero-Shot Learning Nicolaos Astras and Dimitrios Vogiatzis
Machine Learning Methods for Emulating Personality Traits in a Gamified Environment Georgios Liapis, Anna Vordou and Ioannis Vlahavas
CycleMix: Mixing Source Domains for Domain Generalization in Style-Dependent Data (Short) Aristotelis Ballas and Christos Diou

DAY 2

S2 OPTIMIZATION AND SEARCH (12:30-14:00, MAIN)

Chair: Emmanouil Rigas

A heuristic constraint programming approach to the p-median problem with distance constraints Panteleimon Iosif, Nikolaos Ploskas and Kostas Stergiou
Multi-robot maze exploration using an efficient cost-utility method Manousos Linardakis, Iraklis Varlamis and George Papadopoulos
Constructing effective match strategies for the game of Tavli Nikolaos Papahristou
CLBO: Conditional Local Bayesian Optimization for Automated Machine Learning (Short) George Paterakis, Giorgos Borboudakis, Konstantinos Paraschakis, Pavlos Charonyktakis and Ioannis Tsamardinos
LIPO+: Frugal Global Optimization for Lipschitz Functions (Short) Gaëtan Serré, Perceval Beja-Battais, Sophia Chirrane, Argyris Kalogeratos and Nicolas Vayatis

DAY 2

S3 DATA DRIVEN AND KNOWLEDGE BASED METHODS (16:30-18:30, MAIN)

Chair: Stasinos Konstantopoulos

The Impact of Solution Diversity on Passive Constraint Acquisition Vasileios Balafas, Dimosthenis Tsouros, Nikolaos Ploskas and Kostas Stergiou
Tensor-based Trajectory Data Mining: A Block-Term Decomposition Approach Eleftherios Kofidis
Detecting and Fixing Inconsistency of Large Knowledge Graphs Charilaos Akasiadis, Anastasios Nentidis, Angelos Charalambidis and Alexander Artikis
Automatic Dataset Type Recognition for Association Rule Mining (Short) Konstantinos Malliaridis, Stefanos Ougiaroglou, Dimitris A. Dervos, Charalampos Bratsas, Antonis Sidiropoulos and Konstantinos Diamantaras
The Inclusion Criterion for Data Clustering Quality (Short) Nikolaos Kornelakis and Aristidis Likas

DAY 2

S4 NLP AND LLMS (18:30-20:00, MAIN)

Chair Haris Papageorgiou

Greek Wikipedia: A Study on Abstractive Summarization Nikolaos Giarelis, Charalambos Mastrokostas, Nikos Karacapilidis
The Large Language Model GreekLegalRoBERTa Vasileios Saketos, Despina-Athanasia Pantazi and Manolis Koubarakis
Greek2MathTex: A Greek Speech-to-Text Framework for LaTeX Equations Generation (Short) Evangelia Gkritzali, Panagiotis Kaliosis, Sofia Galanaki, Elisavet Palogiannidi and Theodoros Giannakopoulos

W3 RESPONSIBLE AI (10:00-14:00, Room 009)

- *10:00 - 10:40 Keynote (Chair: Evaggelia Pitoura)*

Innovating Next-Gen Telco Networks: A Responsible AI Approach
Nicolas Kourtellis, Head of Systems AI Lab (SAIL), Telefonica

- *10:40 - 11:20 Research Paper Presentations I (Chair: Danae Pla Karidi)*

Local Explanations and Self-Explanations for Assessing Faithfulness in Black-Box LLMs
Christos Fragkathoulas and Odysseas S. Chlapanis,
Artificial Intelligence in Education: Ethical Considerations and Insights from Ancient Greek Philosophy
Kostas Karpouzis

- *11:20 - 11:30 Short Break*
- *11:30 - 12:10 Research Paper Presentation II (Chair: Danae Pla Karidi)*

In Pursuit of Effective Fundamental Rights Protection in the Age of AI: Exploring the Potential of Positive Obligations
Andrea Palumbo

- *12:10 - 13:00 Panel on Responsible AI (Organizer: Lilian Mitrou)*

DAY 2

W4 COGNITIVE ROBOTICS (15:30-20:00, Room 101)

Chair Yannis Aloimonos

The programme includes talks from esteemed researchers.
Please visit the special session webpage

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DAY3 (Friday 13/09)		
8:45- 16:00	REGISTRATION	
9:00-11:00	S5 AI Applications I	
11:00-11:15	COFFEE BREAK	
11:15-12:15	KEYNOTE SPEECH: S. ZAFEIRIOU	
12:15-12:45	The European platform for AI on Demand and the AI ecosystem model	
12:45-14:00	W5 AI for Fashion	
14:00-15:00	LUNCH	
15:00- 18:00	S6 Ethics, Trust and Reliability	S7 AI Applications II
18:00-18:30	AU REVOIR COFFEE	

DAY 3

KEYNOTE (11:15 – 12:15, MAIN)

Generative Models for Digital Humans.

Stefanos Zafeiriou, Faculty of Engineering, Department of Computing, Imperial College

Chair: Dimitris Apostolou, University of Piraeus

S5 AI APPLICATIONS I (9:00-11:00, MAIN)

Chair: Konstantinos Kotropoulos

State of Charge Prediction of EV Li-ion Batteries with Machine Learning: A Comparative Analysis Afroditi Fouka, Alexandros Bousdekis, Katerina Lepenioti and Gregoris Mentzas
Monitoring Ships' Emissions Using Unmanned Aerial Vehicles Anastasios Biblias, Emmanouil Rigas and Nick Bassiliades
Optimizing Pretrained Transformers for Autonomous Driving Vasileios Kochliaridis, Evaggelos Kostinoudis and Ioannis Vlahavas
An Advanced Deep Reinforcement Learning Framework for Docking Unmanned Surface Vessels in Variable Environmental Conditions and Amid Moving Ships Theodore Tranos, Piyabhum Chaysri, Christos Spatharis, Konstantinos Blekas
Driver Sleepiness Detection Using Machine Learning Models on EEG Data (Short) Maria Trigka, Elias Dritsas and Phivos Mylonas

DAY 3

S6 ETHICS, TRUST AND RELIABILITY (15:00-18:00, MAIN)

Chair: Danae Pla Karidi

Trustworthy AI in education: A Roadmap for Ethical and Effective Implementation Evangelia Anagnostopoulou, Nikolaos Antonios Grammatikos, Dimitris Apostolou and Gregoris Mentzas
Transparency Metrics for Artificial Intelligence-Driven Applications in Healthcare Irina E. Nicolae, Gabriel Danciu, Christina Nanou, Nikolaos Koulierakis and Vasiliki Danilatou
Measuring Technical Debt in AI-Based Competition Platforms Dionysios Sklavenitis and Dimitris Kalles
Now I know! Empowering Voters with RAG-enabled LLMs to Eliminate Political Uncertainty Stavros Vassos, Stratos Goudelis, Dimi Balaouras, Giannis Vitalis, Vasilis Nakos, Glykeria Pigka, Loukia Tsagkli, Menia Hatzikou, Zachos Tsionas, Alexandros Chasanis, Stan van de Burgt, Mark Pors and Lefteris Loukas
A biologically inspired computational trust model for open multi-agent systems which is resilient to trustor population changes Zoi Lygizou and Dimitris Kalles
On the Reliability of Artificial Intelligence Systems (Short) Stasinos Konstantopoulos

DAY 3

S7 AI APPLICATIONS II (15:00-18:00, Room 009)

Chair Cristoforos Rekatsinas

Length of Stay & Mortality Prediction for Patients Suffering from Stroke in ICU: A Multimodal Approach Dimitrios Dimopoulos, Vasiliki Danilatou and Theodoros Kostoulas
Leveraging deep learning methods to enhance hydrological predictions and model interpretability Theocharis Ampas and Ioannis Refanidis
A Robust RELAX-Based Algorithm for Enhanced Electric Network Frequency Estimation Christos Korgialas and Constantine Kotropoulos
Unsupervised machine learning techniques for energy consumption tariff design Georgios Tsakiris, Nikolaos Virtsionis-Gkalinikis, Stavros Mischos and Dimitrios Vrakas
Off-the-Shelf Neural Network Architectures for Forex Time Series Prediction come at a Cost Theodoros Zafeiriou and Dimitris Kalles
Optimizing Service Efficiency: Incoming Call Forecasting Utilizing Smart City Open Data – A Case Study (Short) Gregory Davrazos, George Raftopoulos, Georgios Kostopoulos and Sotiris Kotsiantis
Wavelet entropy methods to enhance Machine Learning models in fault diagnosis of motor bearing (Short) Nefeli Sofia Georgaki, Alexandros Tzanetos and Georgios Dounias, Karampotsis Evangelos

DAY 3

W5 AI FOR FASHION (12:45-14:00, MAIN)

Chair Evridiki Papachristou

Transforming Fashion Education: The Impact of AI-Driven 3D Design on Learning, Creativity, and Sustainability
Amalia Drakou, Evridiki Papachristou, Theodore Tarnanidis and Nikolaos Bilalis.

Predicting 3D garment fit in digital product development: Selecting input variables
Fatma Baytar and Mona Maher.

Prompt2Fashion: An automatically generated fashion dataset
Georgia Argyrou, Angeliki Dimitriou, Maria Lymperaiou, Giorgos Filandrianos and Giorgos Stamou.

The European platform for AI on Demand and the AI ecosystem model (12:15 – 12:45, MAIN)

Costas Spyropoulos, Antonis Koukourikos