

Detailed Program of the joint

23rd EANN / EAAAI 2022

&

18th AIAI 2022

Conferences

Friday 17/6/2022

09:00–18:30 Registration

09:30-09:45 Welcome Session

09:45-10:45

Session 1, Keynote 1: “Machine Learning: A Key Ubiquitous Technology in the 21st Century”

[Hybrid Session, Room A - Keynote](#)

Chair: Prof. Lazaros Iliadis

Keynote Speaker: Prof. Hojjat Adeli

Ohio State University, Columbus, USA, Fellow of the Institute of Electrical and Electronics Engineers (IEEE) (IEEE), Honorary Professor, Southeast University, Nanjing, China, Member, Polish and Lithuanian Academy of Sciences, Elected corresponding member of the Spanish Royal Academy of Engineering.

11:15-13:00

Session 2, EAAAI / EANN: DATA_AU (Data Mining / Autoencoders)

[Hybrid Session, Room A](#)

Chair: Prof. Ilias Maglogiannis

Discriminant Analysis on a Stream of Features

Jan Motl, Pavel Kordík

A Methodology to Manage Structured and Semi-Structured Data in Knowledge Oriented Graph

Valerio Bellandi, Paolo Ceravolo, Giacomo Alberto D'Andrea, Samira Maghool, Stefano Siccardi

Reconstructing electricity profiles in submetering systems using a GRU-AE network

Serafin Alonso, Antonio Morán, Daniel Pérez, Miguel A. Prada, Juan J. Fuertes, Manuel Dominguez

Trend and Seasonality Elimination from Relational Data

Jan Motl, Pavel Kordík

Learning image captioning as a structured transduction task

Davide Italo Serramazza, Davide Bacciu

11:15-13:00

Session 3, AIAI: ML_CLA (Machine Learning - Classification)

[Hybrid Session, Room B](#)

Chair: Prof. Leon Bobrowski

Note that all times at the program are in Athens - EEST (Eastern European Summer Time) Zone

A Multi-label Time Series Classification Approach for Non-intrusive Water End-Use Monitoring

Dimitris Papatheodoulou, Pavlos Pavlou, Stelios Vrachimis, Kleanthis Malialis, Demetris Eliades, Theocharis Theocharides

Hybrid (CPU / GPU) exact nearest neighbors search in high-dimensional spaces

David Muhr, Michael Affenzeller

Bias in Face Image Classification Machine Learning Models: The Impact of Annotator's Gender and Race

Andreas Kafkalias, Stylianos Herodotou, Zenonas Theodosiou, Andreas Lanitis

Prediction of Wafer Map Categories using Wafer Acceptance Test Parameters in Semiconductor Manufacturing

Martin Lim Ying Song, Tommy Yip, Jonathan Ong, Anurag Sharma, cheng chin

A Primer for tinyML Predictive Maintenance: Input and Model Optimisation

Emil Njor, Jan Madsen, Xenofon Fafoutis

11:15-13:00

Session 4, Workshop: DAAI (Defense Applications of AI)

Co-Organized with European Defense Agency

[Hybrid Session, Room C](#)

Chair: Dr. Panagiotis Kikiras

Keynote Speaker: Dr. Judith Dijk / TNO

"AI in optronics for defence applications"

Keynote Speaker: Andreas Merentitis / OLX Group GmbH

"Trends in Machine Learning and Lessons from Applications in the Private Sector"

11:15-13:00

Session 5, EAAAI / EANN: COMO_RO (Convolutional Modeling - Robotics)

[Remote Session, Room D](#)

Chair: Prof. Aristidis Vrahatis & Mr. Vasileios Kochliaridis

Online Route Scheduling for a Team of Service Robots with MOEAs and mTSP model

Raul Alves, Clenio E. Silva, Jefferson R. Souza

Synopsis of Video Files Using Neural Networks

Georgi Kostadinov

Ground Penetrating Radar Fourier pre-processing for deep learning tunnel defects' automated classification

Giulia Marasco, Marco Martino Rosso, Salvatore Aiello, Angelo Aloisio, Giansalvo Cirrincione, Bernardino Chiaia, Giuseppe Carlo Marano

Autoregressive Deep Learning Models for Bridge Strain Prediction

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Anastasios Panagiotis Psathas, Lazaros Iliadis, Dimitra V. Achilopoulos, Antonios Papaleonidas, Nikoleta K. Stamataki, Dimitris Bountas, Ioannis M. Dokas

TrojanDroid: Android malware detection for Trojan discovery using convolutional neural networks

Saeed Seraj, Michalis Pavlidis, Nikolaos Polatidis

11:15-13:00

Session 6, AIAI: SE_NAL_ME (Sentiment Analysis Natural Language Social Media)

[Remote Session, Room E](#)

Chair: Prof. Panayiotis Bozanis & Mrs. Niki Kiriakidou

AutoMC: Learning Regular Expressions for Automated Management Change Event Extraction from News Articles

Murat Kalender

How Dimensionality Reduction affects Sentiment Analysis NLP Tasks: An Experimental Study

Leonidas Akritidis, Panayiotis Bozanis

Social Media Sentiment Analysis Related to COVID-19 Vaccines: Case studies in English and Greek language

Evriddiki Kapoteli, Paraskevas Koukaras, Christos Tjortjis

Sentiment Analysis on COVID-19 Twitter Data: A Sentiment Timeline

Makrina Karagkiozidou, Paraskevas Koukaras, Christos Tjortjis

A Multi-Objective Optimization Algorithm for Out-of-Home Advertising

Nader Nader, Rafael Alexandrou, Iasonas Iasonos, Andreas Pamboris, Harris Papadopoulos, Andreas Konstantinidis

14:00-15:45

Session 7, AIAI: AMO_SEA_C (Adaptive Modeling - Sentiment Analysis – Cloud)

[Hybrid Session, Room A](#)

Chair: Prof. Paulo Cortez

A Second-Order Adaptive Decision Model for Proceeding or Terminating a Pregnancy

Lisa Elderhorst, Melissa Van den Berge, Jan Treur

Dynamic Big Data Drift Visualization of CPU And Memory Resource Usage in Cloud Computing

Tajwar Mehmood, Seemab Latif

On the Evaluation of the Plausibility and Faithfulness of Sentiment Analysis Explanations

Julia El Zini, Mohamad Mansour, Basel Mousi, Mariette Awad

Multilingual Sentiment Analysis on Twitter Data towards Enhanced Policy Making

George Manias, Athanasios Kiourtis, Argyro Mavrogiorgou, Dimosthenis Kyriazis

When Domain Adaptation Meets Semi-Supervised Learning Through Optimal Transport

Mourad El Hamri, Younès Bennani, Issam Falih

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14:00-15:45

Session 8, AIAI: EX_EVO_TIS (Explainable AI / Evolutionary / Time Series Modeling)

[Hybrid Session, Room B](#)

Chair: Prof. Mirjana Ivanovic

The generalization of selection of an appropriate Artificial Neural Network to assess the effort and costs of software projects

Dragica Rankovic, Nevena Rankovic, Mirjana Ivanovic, Ljubomir Lazic

Knowledge Engineering and Ontology for Crime Investigation

Wilmuth Müller, Dirk Mühlenberg, Dirk Pallmer, Uwe Zeltmann, Christian Ellmauer, Konstantinos Demestichas

A Novel Human-Centred Evaluation Approach and an Argument-Based Method for Explainable Artificial Intelligence

Giulia Vilone, Luca Longo

Equilibrium Resolution for Epoch Partitioning

Wojciech Wisniewski, Yuri Kalnishkan, David Lindsay, Sian Lindsay

Quantum Approach for Vertex Separator Problem in Directed Graphs

Ahmed ZAIYOU, Younès BENNANI, Mohamed HIBTI, Basarab MATEI

14:00-15:45

Session 9, Workshop: 5G-PINE 2022

Co-organized with the Hellenic Telecommunications Organization Research Group

[Remote Session, Room C](#)

Chair: Dr. Ioannis Chochliouros

A 5G-based Architecture for Localization Accuracy

Maria Belesioti, Kostas Tsagkaris, Aristotelis Margaris, Ioannis Chochliouros

Efficient Data Management and Interoperability Middleware in Business-Oriented Smart Port Use Cases

Achilleas Marinakis, Matilde Julian Segui, Andreu Belsa Pellicer, Carlos Palau, Christos-Antonios Gizelis, Anastasios Nikolakopoulos, Antonios Misargopoulos, Filippos Nikolopoulos-Gkamatsis, Michalis Kefalogiannis, Theodora Varvarigou, Konstantinos Nestorakis, Vrettos Moulos

The use of robotics in critical use cases: the 5G-ERA Project solution

Christina Lessi, George Agapiou, Marios Sophocleous, Ioannis Chochliouros, Renxi Qiu, Stelios Androulidakis

A Framework to Support the Deployment of PPDR Services across Edge and Cloud Domains

Janez Sterle, Ioanna Mesogiti, Luka Korsic, Eleni Theodoropoulou, Fotini Setaki, George Lyberopoulos, Francesca Moscateli, Konstantina Kanta, Giannis Giannoulis, Panagiotis Toumasis, Dimitris Apostolopoulos, Hercules Avramopoulos, John Avramidis, Yigal Leiba, Dimitris Klonidis

Fundamental Features of the Smart5Grid Platform Towards Realizing 5G Implementation

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Ioannis Chochliouros, Daniele Porcu, Sonia Castro, Borja Otura, Paula Encinar, Antonello Corsi, Irina Ciornei, Rita Santiago, Angelos Antonopoulos, Nicola Cadenelli, Nicola di Pietro, August Betzler, Inmaculada Prieto, Fabrizio Battista, Elisavet Grigoriou, Georgios Ellinas, Lenos Hadjidemetriou, Dimitrios Brothimas, Ralitsa Rumenoa, Athanasios Bachoumis, Anastasia Spiliopoulou, Michalis Rantopoulos, Christina Lessi, Dimitrios Arvanitosis, Pavlos Lazaridis

14:00-15:45

Session 10, Workshop: DAAI (Defense Applications of AI)

Co-Organized with European Defense Agency

[Remote Session, Room D](#)

Chair: Mr. Isidoros Monogioudis & Mr. Dragos Voicu

Keynote Speaker: Monica Adamczyk – ENISA

“ENISA efforts on AI Cybersecurity”

Project presentations:

- EFFECTOR
 - BORDER UAS
 - AI-ARC
 - PROMENADE
-

14:00-15:45

Session 11, AIAI: UNSUM (Unsupervised Modeling)

[Remote Session, Room E](#)

Chair: Prof. Evaggelos Spyrou

Client Segmentation of Mobile Payment Parking Data using Machine Learning

Ilze Andersone, Agris Nikitenko, Valdis Bergs, Uldis Jansons

High Rank Self-Organising Maps for Image Fingerprinting

Anthony Benjamin Kolenic, Duncan Anthony Coulter

Determining Column Numbers in Résumés with Clustering

Şeref Recep Keskin, Yavuz Balı, Günce K. Orman, F. Serhan Daniş, Sultan N. Turhan

Query Driven Data Subspace Mapping

Panagiotis Fountas, Maria Papathanasaki, Kostas Kolomvatsos, Christos Anagnostopoulos

16:15 - 17:45

Session 12, - EAAAI / EANN: DEE_CL_TM (Deep Learning - Clustering / Text Mining)

[Hybrid Session, Room A](#)

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Chair: Prof. Elias Pimenidis

Novel Decision Forest Building Techniques by Utilising Correlation Coefficient Methods

Efthymoulos Drousiotis, Lei Shi, Paul G Spirakis, Simon Maskell

Complex layers of formal neurons

Leon Bobrowski

Enhancements on a Pipeline Approach for Abstract Meaning Representation Parsing

Alexandru Frasier, Georgiana Marian, Nicoleta-Teodora Vezan, Florin Macicasan, Camelia Lemnaru

An exploration of semi-supervised text classification

Henrik Lien, Daniel Biermann, Fabrizio Palumbo, Morten Goodwin

16:15 - 17:45

Session 13, AIAI: AI - BEI 2022 (Artificial Intelligence in Biomedical Engineering and Informatics)

[Hybrid Session, Room B](#)

Chair: Prof. Ilias Maglogiannis

On the reusability of ISIC Data for training DL classifiers applied on clinical skin images

Konstantinos Moutselos, Ilias Maglogiannis

Deep learning-based segmentation of the atherosclerotic carotid plaque in ultrasonic images

Georgia Liapi, Efthymoulos Kyriacou, Christos Loizou, Andreas Panayides, Constantinos Pattichis, Andrew Nicolaides

An intelligent grammar-based platform for RNA H-type pseudoknot prediction

Vrettos Moulos, Evangelos Makris, Angelos Kolaitis, Christos Andrikos, Panayiotis Tsanakas, Christos Pavlatos

An Automated 2D U-Net Segmentation Method for the Identification of Cancer Brain Metastases Using MRI Images

Vangelis Tzardis, Efthymoulos Kyriacou, Christos P Loizou, Anastasia Constantinidou

16:15 - 17:45

Session 14, Workshop: 5G-PINE 2022

Co-organized with the Hellenic Telecommunications Organization Research Group

[Hybrid Session, Room C](#)

Chair: Dr. Ioannis Chochliouros

5G for the Support of Smart Power Grids: Millisecond Level Precise Distributed Generation Monitoring and Real-Time Wide Area Monitoring

Ioannis Chochliouros, Daniele Porcu, Dimitrios Brothimas, Nikolas Tzanis, Nikolay Palov, Ralitsa Rumenoova, Angelos Antonopoulos, Nicola Cadenelli, Markos Asprou, Lenos Hadjidemetriou, Sonia Castro, Pencho Zlatev, Bogdan Bogdanov, Thanassis

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Bachoumis, Antonello Corsi, Helio Simeão, Pavlos Lazaridis, Zaharias Zaharis, Michalis Rantopoulos, Christina Lessi, Anastasia Spiliopoulou

Experimentation Scenarios for Machine Learning-Based Resource Management

Alexandros Kostopoulos, Ioannis Chochliouros, John Vardakas, Miquel Payaró, Sergio Barrachina, Md Arifur Rahman, Evgenii Vinogradov, Philippe Chanclou, Roberto Gonzalez, Charalambos Klitis, Sabrina De Capitani di Vimercati, Polyzois Soumplis, Emmanuel Varvarigos, Dimitrios Kritharidis, Kostas Chartsias

AI-driven Intent-based networking for 5G enhanced robot autonomy

Marios Sophocleous, Zhao Xu, Jakub Špaňhel, Renxi Qiu, Adrian Lendinez, Christina Lessi, Ioannis Chondroulis, Ioannis Belikaidis

Application of mobile networks (5G and beyond) in precision agriculture

Lechostaw Tomaszewski, Robert Kołakowski, Mirosław Zagórda

16:15 - 17:45

Session 15, Workshop: AIBMG 2022 (Energy, Buildings and Micro-Grids Workshop)

[Remote Session, Room D](#)

Chair: Dr. Iakovos Michailidis & Dr. Elias Kosmatopoulos & Dr. Dimosthenis Ioannidis

Probabilistic Quantile Multi-step Forecasting of Energy Market Prices: A UK Case Study

Petros Tzallas, Napoleon Bezas, Ioannis Moschos, Dimosthenis Ioannidis, Dimitrios Tzouvaras

Environmental feature correlation and meta-analysis for Occupancy detection - A real-life assessment

Asimina Dimara, Alkiviadis Kyrtoglou, Iakovos Michailidis, Stelios Krinidis, Elias Kosmatopoulos, Dimosthenis Ioannidis, Christos-Nikolaos Anagnostopoulos, Dimitrios Tzouvaras

Non-Intrusive Diagnostics for Legacy Heat-Pump Performance Degradation

Iakovos Michailidis, Georgios Vougiatzis, Aliko Stefanopoulou, Asimina Dimara, Christos Korkas, Stelios Krinidis, Elias Kosmatopoulos, Dimosthenis Ioannidis, Christos-Nikolaos Anagnostopoulos, Dimitrios Tzouvaras

Chargym: An EV Charging Station Model for Controller Benchmarking

Georgios Karatzinis, Christos Korkas, Iakovos Michailidis, Elias Kosmatopoulos, Aliko Stefanopoulou, Christo Tsaknakis, Michalis Terzopoulos

16:15 - 18:00

Session 16, AIAI: TIS_LE_FZ (Time Series Modeling / Learning / FUZZY)

[Remote Session, Room E](#)

Chair: Prof. Hassan Kazemian & Prof. Angelos Angelopoulos

A Self-Adaptive Learning Music Composition Algorithm as Virtual Tutor

Michele Della Ventura

Transfer Learning for Predicting Gene Regulatory Effects of Chemicals

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Bahattin Can Maral, Mehmet Tan

Comparing Boosting & Deep Learning methods on Multivariate Time Series for Retail Demand Forecasting

Georgios Theodoridis, Athanasios Tsadiras

Topological Data Analysis of Time-Series as an Input Embedding for Deep Learning Models

Morgan Byers, Lee Hinkle, Vangelis Metsis

Creating a bridge between Probabilities and fuzzy sets and its impact on Drought Severity Assessment

Nikos Mylonas, Mike Spiliotis, Basil Papadopoulos

20:30 -

Welcome reception.

Exact hours and location will be announced during the conference.

Saturday 18/6/2022

09:00–18:30 Registration

09:45 - 11:00

Session 17, AIAI: DEE_EVOC (Deep Learning / Evolutionary Computing)

[Hybrid Session, Room A](#)

Chair: Prof. Harris Papadopoulos

Machine Learning Applications in Real Estate: Critical Review of Recent Development

Jamal Al-Qawasmi

Fine-Grained Double-View Link Prediction within the Dynamic Interaction Network

Jianye Pang, Wei Ke

Enhanced dependency-based feature selection to improve anomaly network intrusion detection

Zakaria SAHRAOUI, Khadidja BENNACEUR, Mohamed Ahmed-Nacer

Trade between population size and mutation rate for GAAM (genetic algorithm with aggressive mutation) for feature selection

Marc Chevallier, Nistor Grozavu, Faouzi Boufarès, nicoleta rogovschi, charly clairmont

10:00 - 11:00

Session 18, - EAAAI / EANN: ROBO (Robotics)

[Hybrid Session, Room B](#)

Chair: Mr. Andrew Melnik

Improving binary semantic scene segmentation for robotics applications

Maria Tzelepi, Nikolaos Tragkas, Anastasios Tefas

Towards using Reinforcement Learning for Autonomous Docking of Unmanned Surface Vehicles

Martin Holen, Else-Line Malene Ruud, Narada Dilp Warakagoda, Morten Goodwin, Paal Engelstad, Kristian Muri Knausgård

A robust, quantization-aware training method for photonic neural networks

Athina Oikonomou, Manos Kirtas, Nikolaos Passalis, George Mourgias-Alexandris, Miltos Moralis-Pegios, Nikos Pleros, Anastasios Tefas

10:00 - 11:00

Session 19, Workshop: ML@HC (Machine Learning and Big Data in Health Care)

[Hybrid Session, Room C](#)

Chair: Dr. Konstantinos Votis

Keynote Speakers: S. Athanassopoulos, Gabrielle Oestreicher and S. Likothanassis

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“A Smart Digital Guardian Angel Enhancing Cancer Patient Wellbeing and Health Status Improvement Following Treatment”

09:30 - 11:00

Session 20, AIAI: ML_CLA (MACHINE LEARNING / CLASSIFICATION)

[Remote Session, Room D](#)

Chair: Dr. Athanasios Tsadiras & Prof. Serafin Alonso

Machine learning approach to detect malicious mobile apps

Prof Hassan Kazemian

Allocating Orders to Printing Machines for Defect Minimization: A Comparative Machine Learning Approach

Angelos Angelopoulos, Anastasios Giannopoulos, Sotirios Spantideas, Nikolaos Kapsalis, Chris Trochoutsos, Stamatis Voliotis, Panagiotis Trakadas

Decision Tree Induction through Meta-Learning

Caique Augusto Ferreira, Adriano Henrique Cantão, José Augusto Baranauskas

Production Time Prediction for Contract Manufacturing Industries Using Automated Machine Learning

Luís Ferreira, Afonso Sousa, Rui Ribeiro, João Xavier, André Pilastrri, Paulo Cortez

11:00-12:00

Session 21, Keynote 2: “Socially-Interactive Artificial Intelligence: Perception, Synthesis and Learning of Human-Like Behaviors”

[Hybrid Session, Room A - Keynote](#)

Chair: Prof. Ilias Maglogiannis

Keynote Speaker: Prof. Elisabeth André

Human-Centered Artificial Intelligence, Institute for Informatics, University of Augsburg, Germany.

12:30-13:30

Session 22, Keynote 3: “Responsible Conversational AI: Trusted, Safe and Bias-free”

[Hybrid Session, Room A - Keynote](#)

Chair: Prof. Chrisina Jayne

Keynote Speaker: Prof. Verena Rieser

School of Mathematical and Computer Sciences (MACS) at Heriot Watt University, Edinburgh.

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14:30 - 16:15

Session 23, EAAAI / EANN: BiO_BLO_DL (Bio inspired Architectures /Blockchain/ Deep Learning)

[Hybrid Session, Room A](#)

Chair: Prof. Petr Hajek

A Blockchain Secure and Integrity-Preserved Architecture for Military Logistics Operations
Konstantinos Demertzis, Panagiotis Kikiras, Lazaros Iliadis

An IoT Authentication Framework for Urban Infrastructure Security using Blockchain and Deep Learning

Anastasios Panagiotis Psathas, Lazaros Iliadis, Antonios Papaleonidas, Dimitris Bountas

The Effectiveness of Synchronous Data-parallel Differentiable Architecture Search

George Kyriakides, Konstantinos Margaritis

Human Activity Recognition under Partial Occlusion

Ioannis-Aris Kostis, Eirini Mathe, Evaggelos Spyrou, Phivos Mylonas

Evaluating Acceleration Techniques for Genetic Neural Architecture Search

Foteini Dervisi, George Kyriakides, Konstantinos Margaritis

14:30 - 16:15

Session 24, AIAI: CYB_ANDE_FZ (CYBERSECURITY – ANOMALY DETECTION / FUZZY)

[Hybrid Session, Room B](#)

Chair: Prof. Lazaros Iliadis

Transfer Learning with Jukebox for Music Source Separation

Wadhah Zai El Amri, Oliver Tautz, Helge Ritter, Andrew Melnik

A Novel GBT-based Approach for Cross-Channel Fraud Detection on Real-World Banking Transactions

Ugur Dolu, Emre Sefer

Random Forest based on Federated Learning for Intrusion Detection

Tijana Markovic, Miguel León, David Buffoni, Sasikumar Punnekkat

SAF: A Peer to Peer IoT LoRa System for Smart Supply Chain in Agriculture

Aristeidis Karras, Christos Karras, Georgios Drakopoulos, Dimitrios Tsolis, Phivos Mylonas, Spyros Sioutas

Anomaly detection using Edge Computing AI on Low Powered Devices

Dragoş-Vasile Bratu, Rareş Ştefan Tiberius Ilinoiu, Alexandru Cristea, Maria-Alexandra Zolya, Sorin-Aurel Moraru

14:30 - 16:15

Session 25, Workshop: ML@HC (Machine Learning and Big Data in Health Care)

[Hybrid Session, Room C](#)

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Chair: Dr. Konstantinos Votis

CAIPI in Practice: Towards Explainable Interactive Medical Image Classification

Emanuel Slany, Yannik Ott, Stephan Scheele, Jan Paulus, Ute Schmid

Digitally assisted planning and monitoring of supportive recommendations in cancer patients

Alexander Scherrer, Tobias Zimmermann, Sinan Riedel, Fihmi Mousa, Isa Wasswa-Musisi, Robert Zifrid, Hartmut Tillil, Philipp Ulrich, Thanos Kosmidis, Joaquim C. Reis, Gabrielle Oestreicher, Markus Möhler, Stefanos Venios, Maria Plakia, Sotiris Diamantopoulos, Ilias Kalamaras, Kostas Votis

ParSMURF-NG: a Machine Learning High Performance Computing system for the analysis of imbalanced big omics data

Alessandro Petrini, Marco Notaro, Jessica Gliozzo, Tiziana Castrignanò, Peter N. Robinson, Elena Casiraghi, Giorgio Valentini

Monitoring Neurological Disorder Patients via Deep Learning based Facial Expressions Analysis

Mohib Ullah, Muhammad Munsif, Muhammad Sajjad, Bilal Ahmad, Faouzi Alaya Cheikh

Predicting Risk of Dementia with Survival Machine Learning and Statistical Methods: Results on the English Longitudinal Study of Ageing Cohort

Daniel Stamate, Henry Musto, Olesya Ajnakina, Daniel Stahl

14:30 - 16:15

Session 26, Workshop: DAAI (Defense Applications of AI) / AI Action Plan way ahead - EDA Co-Organized with European Defense Agency

[Remote Session, Room D](#)

Chair: Mr. Isidoros Monogioudis

Keynote Speaker: Adrian Rodriguez Grillo

“Artificial Intelligence for Automatic Detection, Recognition and Identification (A-DRI) with Electro-Optical (EO) and Synthetic Aperture Radar (SAR) Data”

Keynote Speaker: Nicolas Deruytter - ML6

“Design patterns for explainability in AI applications”

Keynote Speaker: Angelos Tserekas – SOTIRIA AI

“AI applications on maritime terrain security”

14:30 - 16:15

Session 27, AIAI: CNN_RC_REI (CONVOLUTIONAL / RECURRENT / REINFORCEMENT)

[Remote Session, Room E](#)

Chair: Prof. Oriol Sallent & Prof. Ioannis Karydis

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The Bonsai Hypothesis: an Efficient Network Pruning Technique

Yasuaki Ito, Koji Nakano, Akihiko Kasagi

TraderNet-CR: Cryptocurrency Trading with Deep Reinforcement Learning

Vasileios Kochliaridis, Eleftherios Kouloumpris, Ioannis Vlahavas

An Efficient Method for Addressing COVID-19 Proximity Related Issues in Autonomous Shuttles Public Transportation

Dimitrios Tsiktisiris, Antonios Lalas, Minas Dasygenis, Konstantinos Votis, Dimitrios Tzovaras

Automatic semi-quantitative histological assessment of tissue traits using a smart web application

Olympia Giannou, Dimitra Zazara, Anastasios Giannou, Petra Clara Arck, Georgios Pavlidis

Transformer-based Zero-Shot Detection via Contrastive Learning

Wei Liu, Hui Chen, Yongqiang Ma, Jianji Wang, Nanning Zheng

16:45 - 18:15

Session 28, AIAI: MLM (MACHINE LEARNING MODELING)

[Hybrid Session, Room A](#)

Chair: Dr. Miguel León

Experimental comparison of metaheuristics for feature selection in machine learning in the medical context

Thibault Anani, Jean-François Pradat-Peyre, François Delbot

An Industry 4.0 Intelligent Decision Support System for Analytical Laboratories

João Silva, Paulo Cortez

Combining Cox model and tree-based algorithms to boost performance and preserve interpretability for health outcomes

Diana Shamsutdinova, Daniel Stamate, Angus Roberts, Daniel Stahl

Distribution guided neural disaggregation of PM10 and O3 hourly concentrations from daily statistics and low-cost sensors.

Evangelos Bagkis, Theodosios Kassandraos, Kostas Karatzas

16:45 - 18:15

Session 29, Workshop: AIBMG 2022 (Energy, Buildings and Micro-Grids Workshop)

[Hybrid Session, Room B](#)

Chair: Dr. Iakovos Michailidis & Dr. Stelios Krinidis

Anomaly detection in small-scale industrial and household appliances

Niccolò Zangrando, Sergio Luis Herrera Gonzalez, Paraskevas Koukaras, Asimina Dimara, Piero Fraternali, Stelios Krinidis, Dimosthenis Ioannidis, Christos Tjortjis, Christos-Nikolaos Anagnostopoulos, Dimitrios Tzovaras

Proactive buildings: A prescriptive maintenance approach

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Paraskevas Koukaras, Asimina Dimara, Sergio Herrera, Niccolò Zangrando, Stelios Krinidis, Dimosthenis Ioannidis, Piero Fraternali, Christos Tjortjis, Christos-Nikolaos Anagnostopoulos, Dimitrios Tzouvaras

Performance Meta-analysis for Big-Data Univariate Auto-Imputation in the Building Sector

Aliki Stefanopoulou, Iakovos Michailidis, Asimina Dimara, Stelios Krinidis, Elias Kosmatopoulos, Christos-Nikolaos Anagnostopoulos, Dimitrios Tzouvaras

An innovative software platform for efficient energy, environmental and cost planning in buildings retrofitting

Ioannis Mamounakis, Petros Iliadis, Andreas Seitaridis, Nikolaos Tagkoulis, Evangelos Bellos, Christos Papalexis, Vasileios Sougakis, Nikolaos Nikolopoulos

16:45 - 18:15

Session 30, Workshop: 5G-PINE 2022

Co-organized with the Hellenic Telecommunications Organization Research Group

[Remote Session, Room C](#)

Chair: Dr. Ioannis Chochliouros

Comparative study of a deterministic adaptive beamforming technique with Neural Network implementations

Ioannis Mallioras, Zaharias Zaharis, Pavlos Lazaridis, Traianos Yioultsis, Nikolaos Kantartzis, Ioannis Chochliouros

Building a knowledge-intensive, intent-lean, question answering chatbot in the Telecom industry - Challenges and Solutions

Antonis Misargopoulos, Filippos Nikolopoulos-Gkamatsis, Konstantinos Nestorakis, Alexandros Tzoumas, Georgios Giannakopoulos, Michalis Kefalogiannis, Christos-Antonios Gizelis

Advancements in Edge Computing and Service Orchestration in Support of Advanced Surveillance Services

Ioanna Mesogiti, Eleni Theodoropoulou, Fotini Setaki, George Lyberopoulos, Francesca Moscateli, Konstantina Kanta, Giannis Giannoulis, Panagiotis Toumasis, Dimitrios Apostolopoulos, Hercules Avramopoulos, Lukasz Lopacinski, Jesus Gutierrez Teran, Anastasios Nanos, Yigal Leiba, Markos Anastasopoulos, Anna Tzanakaki

A Deep Q Network-based Multi-Connectivity Algorithm for Heterogeneous 4G/5G Cellular Systems

Juan Jesús Hernández Carlón, Jordi Perez-Romero, Irene Vilà Muñoz, Oriol Sallent, Ferran Casadevall

16:45 - 18:15

Session 31, AIAI: EVOG (Evolutionary Computing)

[Remote Session, Room D](#)

Chair: Prof. Spiros Likothanassis & Prof. Efstratios F. Georgopoulos & Mr. Emanuel Slany

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Hierarchical Causality Network: Find the Effective Connectivity in Visual Cortex

Ming Du, Haodong Jing, Yongqiang Ma, Nanning Zheng

Exploring the Relationship Between Visual Information and Language Semantic Concept in the Human Brain

Haodong Jing, Ming Du, Yongqiang ma, Nanning Zheng

Biologically Plausible Complex-Valued Neural Networks and Model Optimization

Ryan Yu, Andrew Wood, Sarel Cohen, Moshick Hershcovitch, Daniel Waddington, Peter Chin

Comparative Study by Using a Greedy Approach and Advanced Bio-Inspired Strategies in the Context of the Traveling Thief Problem

Julia Garbaruk, Doina Logofatu, Florin Leon

16:45 - 18:30

Session 32, AIAI: XAI_ENS (Explainable AI / Energy Streams Modeling)

[Remote Session, Room E](#)

Chair: Prof. Sotiris Kotsiantis

Energy Load Forecasting: Investigating Mid-Term Predictions with Ensemble Learners

Charalampos M. Liapis, Aikaterini Karanikola, Sotiris Kotsiantis

Application of Graph-Based Technique to Identity Resolution

Prof H Kazemian, Mohammad-Hosseini Amirhosseini, Michael Phillips

Machine Learning Techniques for Regression in Energy Disaggregation

Christos Konstantopoulos, Spyros Sioutas, KONSTANTINOS TSICHLAS

Unsupervised Multi-Sensor Anomaly Localization with Explainable AI

Mina Ameli, Viktor Pfanschilling, Anar Amirli, Wolfgang Maaß, Kristian Kersting

An Analysis on Graph-Processing Frameworks: Neo4j and Spark GraphX

Alabbas Alhaj Ali, Doina Logofatu

20:30 -

Gala Party.

Exact hours and location will be announced during the conference.

Sunday 19/6/2022

10:00–14:00 Registration

10:30-11:30

Session 33, Keynote 4: “What neuroimaging can tell about human brain function”

[Hybrid Session, Room A - Keynote](#)

Chair: Prof. Anastasios Tefas

Keynote Speaker: Prof. Riitta Salmelin

Department of Neuroscience and Biomedical Engineering Aalto University, Finland.

12:00 - 13:45

Session 34, EAAAI / EANN: ML_BiOM (Machine Learning BioMedical)

[Hybrid Session, Room A](#)

Chair: Dr. Alexander Scherrer

Brain Tumour Segmentation on 3D MRI using Attention V-Net

Charul Giri, Jivitesh Sharma, Morten Goodwin

Automatic Accent and Gender Recognition of Regional UK Speakers

Chrisina Jayne, Victor Chang, Jozeene Bailey, Qianwen Ariel Xu

Semantic Segmentation of Diabetic Retinopathy Lesions, using a UNET with Pretrained Encoder

Dimitrios Theodoropoulos, Georgios Manikis, Kostantinos Marias, Giorgos Papadourakis

A gene ontology-driven wide and deep learning architecture for cell-type classification from single-cell RNA-seq data

Gianmarco Coppola, Antonino Fiannaca, Massimo La Rosa, Laura La Paglia, Alfonso Urso, Salvatore Gagli

Using a deep neural network in a relative risk model to estimate vaccination protection for COVID-19

Roman Neruda, Gabriela Suchopárová, Petra Vidnerová, Martin Šmíd

Development of an Algorithmic Model to Reduce Memory and Learning Deficits on Trisomic Mice

Eleni Gerasimidi, Lazaros Iliadis

12:00 - 13:45

Session 35, AIAI: DL_RC_REI (Learning/Recurrent/Reinforcement)

[Hybrid Session, Room B](#)

Chair: Prof. Mariette Awad

Note that all times at the program are in Athens - EEST (Eastern European Summer Time) Zone

Reinforcement Learning Approach for Multi-period Inventory with Stochastic Demand

Manoj Shakya, Huey Yuen Ng, Darrell Joshua Ong, Bu-Sung Lee

Deep Recurrent Neural Networks for OYO Hotels Recommendation

Anshul Rankawat, Rahul Kumar, Arun Kumar

The Neocortex-Inspired Locally Recurrent Neural Network (NILRNN) as a Model of the Primary Visual Cortex

Franz A. Van-Horenbeke Echevarria, Angelika Peer

MTMA-DDPG: a Deep Deterministic Policy Gradient Reinforcement Learning for Multi-Task Multi-Agent Environments

karim Hamadeh, Julia El Zini, Joudi Hajar, Mariette Awad

12:00 - 13:45

Session 36, EAAAI / EANN: BiO_CLA (Bio Inspired / Classification)

[Hybrid Session, Room C](#)

Chair: Prof. Ilias Maglogiannis

Custom State LSTM Cell for Text Classification Tasks

Giannis Haralabopoulos, Ioannis Anagnostopoulos

Generation of Orthogonality for Feature Spaces in the Bio-inspired Neural Networks

Naohiro Ishii, Toshinori Deguchi, Masashi Kawaguchi, Hiroshi Sasaki, Tokuro Matsuo

Text Analysis for COVID-19 Tweets

Panagiotis Theocharopoulos, Anastasia Tsoukala, Spiros Georgakopoulos, Sotiris Tasoulis, Vassilis Plagianakos

SNNs Model Analyzing and Visualizing Experimentation using RAVSim

Sanaullah, Shamini Koravuna, Ulrich Rückert, Thorsten Jungeblut

Supporting Patient Nutrition in Critical Care Units

Kamran Soomro, Elias Pimenidis, Chris McWilliams

12:00 - 13:45

Session 37, AIAI: ML_FES (Machine Learning/Feature Selection)

[Remote Session, Room D](#)

Chair: Dr. George Kyriakides & Dr. Bassem Hichri

Exploring the pertinence of distance functions for nominal multi-label data

Payel Sadhukhan

Predictive Maintenance Based on Machine Learning Model

Bassem Hichri, Anass Driate, Andrea Borghesi, Francesco Giovannini

Implicit Maximum Likelihood Clustering

Georgios Vardakas, Aristidis Likas

An improved neural network model for treatment effect estimation

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Niki Kiriakidou, Christos Diou

Feature Selection Methods for Uplift Modeling and Heterogeneous Treatment Effect

Zhenyu Zhao, Yumin Zhang, Totte Harinen, Mike Yung

12:00 - 13:45

Session 38, Workshop: MHWD (Mining Humanistic Data Workshop)

[Remote Session, Room E](#)

Chair: Prof. Spyros Sioutas & Mr. Georgios Drakopoulos

Employing Natural Language Processing Techniques for Online Job Vacancies Classification

George Varelas, Giannis Tzimas, Panagiotis Zervas, Dimitris Lagios, Spyros Ntouroukis, Kenia Parsons

Simulating Blockchain Consensus Protocols In Julia: Proof of Work vs Proof of Stake

Georgios Drakopoulos, Eleanna Kafeza, Ioanna Giannoukou, Phivos Mylonas, Spyros Sioutas

An Overview of MCMC Methods: From Theory to Applications

Christos Karras, Aristeidis Karras, Markos Avlonitis, Spyros Sioutas

State-of-the-art in Community Detection in Temporal Networks

Kostas Christopoulos, Kostas Tsihclas

Maximum Likelihood Estimators on MCMC Sampling Algorithms for Decision Making

Christos Karras, Aristeidis Karras, Markos Avlonitis, Ioanna Giannoukou, Spyros Sioutas

15:30 -

Social activity

Organized excursion

visit at Lasithi Plateau,

visit at Kampanio Foundation

visit to windmill park of Lasithi Plateau

traditional music and treat

Exact hours and meeting point will be announced during the conference.

Monday 20/6/2022

10:00–14:00 Registration

10:00-11:45

Session 39, AI & Ethics, Keynote 5: “Is Big Tech becoming the Big Tobacco of AI?”

Co-organized with LeADS project

[Hybrid Session, Room A - Keynote](#)

Chair: Prof. Lazaros Iliadis

Keynote Speaker: Prof. John Macintyre

Dean of the Faculty of Applied Sciences and Pro Vice Chancellor at University of Sunderland.

Discussion panel

- **Larry Medsker**, Research Professor, George Washington University
- **Christian Guttman**, Prof. Dr. and Exec Director, Nordic Artificial Intelligence Institute and Karolinska Institute
- **Olivia Gambelin**, CEO & Founder, Ethical Intelligence
- **Christoph Ebell**, Founder/CEO, Arcades Digital, an NFT and Metaverse Studio
- **Cortnie Abercrombie**, CEO AI Truth

12:15 - 14:00

Session 40, AIAI: CNN_ENR (CONVOLUTIONAL NN /ENERGY STREAMS MODELING)

[Hybrid Session, Room A](#)

Chair: Mr. George Manias

Speech Emotion Recognition from Earnings Conference Calls in Predicting Corporate Financial Distress

Petr Hajek

Efficient Large-Scale Machine Learning Techniques for Rapid Motif Discovery in Energy Data Streams

Klelia Lykothanasi, Spyros Sioutas, KONSTANTINOS TSICHLAS

MERLIN: Identifying inaccuracies in Multiple Sequence Alignments using Object Detection

Hiba Khodji, Lucille Herbay, Pierre Collet, Julie Thompson, Anne Jeannin-Girardon

An efficient deep learning framework for face mask detection in complex scenes

Mohib Ullah, Habib Ullah, Sultan Daud Khan, Rafi Ullah, Mussadiq Abdul Rahim, Muhammad Rashid, Zulfiqar Ali

PigPose: A Realtime Framework for Farm Animal Pose Estimation and Tracking

Mohib Ullah, Milan Kresovic, Thong Nguyen, Hina Afridi, Faouzi Alaya Cheikh

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12:15 - 13:45

Session 41, AIAI: FZ_SENA_LE (Fuzzy Modeling/Sentiment Analysis/Learning)

[Hybrid Session, Room B](#)

Chair: Dr. Nicholas Walker

An Inductive System Monitoring Approach for GNSS Activation

Shahrooz Abghari, Veselka Boeva, Emiliano Casalicchio, Peter Exner

Invention Concept Latent Spaces for Analogical Ideation

Nicholas Walker

A Communication Data Layer for Distributed Neuromorphic Systems

Andras Veres, Peter Haga, Andras Racz, Tamas Borsos, Zsolt Kenesi

Brainstorming Fuzzy Cognitive Maps for Camera-based Assistive Navigation

Georgia Sovatzidi, Dimitris Iakovidis

12:15 - 14:00

Session 42, EAAAI / EANN: CON_CLA_CLU (Convolutional / Classification/Clustering)

[Hybrid Session, Room C](#)

Chair: Mr. Alan Mosca

Route Scheduling System for multiple self-driving cars using K-means and bio-inspired algorithms

Clenio E. Silva, Tiago S. César, Junior A. R. Silva, Iago P. Gomes, Denis F. Wolf, Raulcésar Alves, Jefferson R. Souza

On the Suitability of Neural Networks as Building Blocks for The Design of Efficient Learned Indexes

Domenico Amato, Giosue' Lo Bosco, Raffaele Giancarlo

An Accurate Convolutional Neural Networks Approach to Wound Detection for Farmed Salmon

Aditya Gupta, Even Bringsdal, Nicole Salbuvik, Kristian Muri Knausgard, Morten Goodwin

ITSC Fault Diagnosis in Permanent Magnet Synchronous Motor Drives using shallow CNNs

Vera Szabo, Morten Goodwin, Martin Marie Hubert Choux, Saeed Hasan Ebrahimi

On Forecasting Project Activity Durations with Neural Networks

Vahan Hovhannisyan, Peter Zachares, Carlos Ledezma, Joao Gante, Alan Mosca

12:15 – 13:45

Session 43, EAAAI / EANN: REI_ADV_ECH (Reinforcement / Adversarial / Echo state)

[Remote Session, Room D](#)

Chair: Prof. Kostas Kolomvatsos & Prof. Doina Logofatu

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Multi-Track Transfer Reinforcement Learning for Power Consumption Management of Building Multi-Type Air-Conditioners

Yoshifumi Aoki, Satoshi Goto, Yusuke Takahashi, Chuzo Ninagawa, Junji Morikawa

Predicting Seriousness of Injury in a Traffic Accident: A New Imbalanced Dataset and Benchmark

Paschalis Lagias, George Magoulas, Ylli Prifti, Alessandro Proveti

Efficient Approaches for Data Augmentation by Using Generative Adversarial Networks

Pretom Kumar Saha, Doina Logofatu

Echo State Networks in Data Marketplaces for Digital Content Creation

Will Serrano

12:15 – 13:45

Session 44, AIAI: CYB_ANDE_ADP (Cyber Security - Anomaly Detection / Adaptive)

[Remote Session, Room E](#)

Chair: Mr. Andre Pilastrri & Dr. Luis Miguel Matos

HEDL-IDS A Hybrid Ensemble Deep Learning Approach for Cyber Intrusion Detection

Anastasios Panagiotis Psathas, Lazaros Iliadis, Antonios Papaleonidas, Dimitris Bountas

On the Interplay of Interpersonal Synchrony, Short-Term Affiliation and Long-Term Bonding: A Second-Order Multi-Adaptive Neural Agent Model

Sophie Hendrikse, Jan Treur, Tom Wilderjans, Suzanne Dikker, Sander Koole

Towards Semantic Modeling and Simulation of Cybersecurity on the Internet of Underwater Things

Stavros Stavrinou, Konstantinos Kotis, Christos Kalloniatis

An Empirical Study on Anomaly Detection Algorithms for Extremely Imbalanced Datasets

Gonçalo Fontes, Luis Miguel Matos, Arthur Matta, Andre Pilastrri, Paulo Cortez

14:00-14:30 Closing Session

Webex Events Platform Access Links

Main rooms:

23rd EANN – 18th AIAI 2022 Room A & Plenary

Sessions: 1, 2, 7, 12, 17, 21, 22, 23, 28, 33, 34, 39, 40

<https://eann-aiai.webex.com/eann-aiai/j.php?MTID=m47be59b7db9d3166b8ea29bace06598b>

23rd EANN – 18th AIAI 2022 Room B

Sessions: 3, 8, 13, 18, 24, 29, 35, 41

<https://eann-aiai.webex.com/eann-aiai/j.php?MTID=mf9c194aea5ef21ba90194c483daf408d>

23rd EANN – 18th AIAI 2022 Room C

Sessions: 4, 9, 14, 19, 25, 30, 36, 42

<https://eann-aiai.webex.com/eann-aiai/j.php?MTID=m28f7c4bf0516e865112ae1b05570e32e>

23rd EANN – 18th AIAI 2022 Room D

Sessions: 5, 10, 15, 20, 26, 31, 37, 43

<https://eann-aiai.webex.com/eann-aiai/j.php?MTID=mc381fdeb19b632d2e17c3ac7acdca7f7>

23rd EANN – 18th AIAI 2022 Room E

Sessions: 6, 11, 16, 27, 32, 38, 44

<https://eann-aiai.webex.com/eann-aiai/j.php?MTID=m016966db18197d3dc1bd9ce793bd8c96>

Support room:

23rd EANN – 18th AIAI 2022 Registration, Demo & Support Room

<https://eann-aiai.webex.com/eann-aiai/j.php?MTID=me7ffeefc84ae4d94b7fed6280f48c4a2>

During conference days our EANN – AIAI 2022 Registration Demo & Support Room will be available as follows:

- Friday 17th of June 2022, 09:00 to 18:30 EEST
- Saturday 18th of June 2022, 09:00 to 18:30 EEST
- Sunday 19th of June 2022, 10:00 to 14:00 EEST
- Monday 20th of June 2022 10:00 to 14:00 EEST

During the above timeslots all participants can reach our team by:

- Using the Registration, Demo & Support Room
- Using the messenger plugin at the conference website
- Viber Text or call at: +30 6973 509 214
- WhatsApp Text or call at: +30 6973 509 214
- Direct call at: +30 6973 509 214

More info can be found under the **“Live Event”** menu on the conference website