

Detailed Program of the joint 22nd EANN 2021 - 17th AIAI 2021 Conference

Friday 25/6/2021

10:00–18:00 Registration

10:30-10:45 Welcome Session

10:45-11:45

Session 1, Plenary 1: “Brain-Inspired Data Analytics for Incremental and Transfer Learning of Cognitive Spatio-Temporal Data and for Knowledge Transfer”

Chair: Prof. Lazaros Iliadis

Keynote Speaker: Nikola Kasabov

Fellow IEEE, Fellow RSNZ, Fellow INNS College of Fellows, Professor of Knowledge Engineering and Founding Director KEDRI Auckland University of Technology, Auckland, New Zealand George Moore Chair/Professor, University of Ulster, UK, Honorary Professor Teesside University UK and the University of Auckland, NZ

11:45-13:00

Session 2, EANN: DL-CON I (DEEP LEARNING - CONVOLUTIONAL I)

Chair: Prof. George Magoulas

fNIRS-Based BCI Using Deep Neural Network with an Application to Deduce the Driving Mode based on the Driver's Mental State

Kazuhiko Takahashi, Reo Yokono, Chang Chu, Gauvain Huve, Masafumi Hashimoto

Deep Learning Modeling of Groundwater Pollution Sources

Yiannis N. Kontos, Theodosios Kassandra, Konstantinos Katsifarakis, Kostas Karatzas

Image Pre-processing and Segmentation for Real-Time Subsea Corrosion Inspection

Craig Pirie, Carlos Moreno-Garcia

Exploring the Limits of Vanilla CNN Architectures for Fine-grained Vision-based Vehicle Classification

Andreas Caduff, Klaus Zahn, J. Hofstetter, M. Rechsteiner, P. Bucher

An Artificial Intelligence System for Endotracheal Intubation Confirmation

Dror Lederman

11:45-13:00

Session 3, AIAI: DL-CON II (DEEP LEARNING - CONVOLUTIONAL II)

Chair: Prof. Elias Pimenidis

A Comparative Study of Deep Learning Techniques for Financial Indices Prediction

Argyrios Ketsetsis, Konstantinos Giannoutakis, Georgios Spanos, Nikolaos Samaras, Dimitrios Hristu-Varsakelis, Dimitrios Thomas, Dimitrios Tzovaras

Robustness testing of AI systems: A case study for traffic sign recognition

Christian Berghoff, Pavol Bielik, Matthias Neu, Petar Tsankov, Arndt von Twickel

Deep Dense and Convolutional Autoencoders for Machine Acoustic Anomaly Detection

Gabriel Coelho, Pedro Pereira, Luis Matos, Alexandrine Ribeiro, Eduardo Nunes, André Ferreira, Paulo Cortez, Andre Pilastrri

Just-in-time Biomass Yield Estimation with Multi-Modal Data and Variable Patch Training Size

Patricia O'Byrne, Patrick Jackman, Damon Berry, Thomas Lee, Michael French, Robert J. Ross

Automatic Classification of XCT Images in Manufacturing

Bertram Sabrowsky-Hirsch, Roxana-Maria Holom, Christian Gusenbauer, Michael Reiter, Florian Reiterer, Ricardo Fernández Gutiérrez, Josef Scharingesr

11:45-13:00

Session 4, Workshop: DARE (Distributed AI for Resource-Constrained Platforms)

Chair: Dr. Anna Hristoskova & Dr. Nicolás González-Deleito

Distributed data compression for edge devices.

Kevin Van Vaerenbergh, Tom Tourwe

PFilter: Privacy-aware and secure data filtering at the edge for distributed edge analytics

Annanda Rath, Anna Hristoskova, Sarah Klein

An Initial Analysis of the Shortcomings of Conventional AI and the Benefits of Distributed AI Approaches in Industrial Use Cases

Anna Hristoskova, Nicolás González-Deleito, Sarah Klein, Joana Sousa, Nuno Martins, João Tagaio, João Serra, Carlos Silva, João Ferreira, Pedro M. Santos, Ricardo Morla, Luis Almeida, Barış Bulut, Sencer Sultanoğlu

Towards a Distributed Learning Architecture for Securing ISP Home Customers

Pedro Santos, Joana C Sousa, Ricardo Morla, Nuno Martins, João Tagaio, João Serra, Carlos Silva, Mário Sousa, Pedro Souto, Luís Lino Ferreira, João Ferreira, Luis Almeida

A first sensitivity study of multi-object multi-camera tracking performance

Miguel Ramos, Carlos Pereira, Luis Almeida

11:45-13:45

Session 5, Workshop: nloVe (Designing a Novel Adaptive Cybersecurity Solution for Internet-of-Vehicle) / Discussion Forum / Open Session

Chair: Dr. Konstantinos Votis

11:45-12:00 - Presentation of the nloVe project

12:00-12:20 - Aspects of stakeholders' requirements

12:30-13:45 - Round table discussion with stakeholders' representatives, researchers from projects in the same domain, and external experts in the field of cybersecurity, automotive industry, and AI

11:45-13:45

**Session 6, Workshop: DAAI (Defense Applications of AI) / Discussion Forum / Open Session
Co-Organized together with European Defense Agency**

Chair: Dr. Panagiotis Kikiras

11:45-12:00 - Dr. Panagiotis Kikiras, European Defence Agency

Introduction & Welcome message by the Organizers

12:00-12:45 - Dr. Evangelos Ouzounis, European Defence Agency

Artificial Intelligence Cybersecurity Challenges - How Cyber Security and Privacy
Affects the Smooth Deployment of AI – ENISA's Approach

13:00-13:45 - Sergio Albani, European Union Satellite Centre

Application of AI for GEOINT services in the Space and Security domain

13:15-14:30

Session 7, Workshop: The 1st Workshop on AI and Ethics (AIETH 2021)

Chair: Prof. John Macintyre

Pro Vice Chancellor at the University of Sunderland, United Kingdom

13:15-13:30 - Professor Matthias Scheutz, Bernard M. Gordon Senior Faculty Fellow, Adjunct
Professor, Psychology, Tufts School of Arts & Sciences, Director, Human-Robot Interaction Lab

13:30-13:45 - Olivia Gambelin, AI Ethicist and founder of Ethical Intelligence

13:45-14:00 - Cortnie Abercrombie, CEO, Founder AI Truth. Independent Consultant. AI
Strategy for Trusted AI

14:00-14:15 - Christoph J Ebell, Co-Founder & CEO at Arcades DigitalFree discussion-exchange
of Arguments with conference participants during the event)

13:15-14:30

Session 8, AIAI: REC_SENT_IMP (Recommendation Systems-Sentiment Analysis-AI Impacts)

Chair: Prof. Peter Hajek

Recommending Database Architectures for Social Queries: A Twitter Case Study

Michael Marountas, Georgios Drakopoulos, Phivos Mylonas, Spyros Sioutas

The AI4Media project: Use of Next-generation Artificial Intelligence Technologies for Media
Sector Applications

*Filareti Tsalakanidou, Symeon Papadopoulos, Vasileios Mezaris, Ioannis Kompatsiaris,
Birgit Gray, Danae Tsabouraki, Maritini Kalogerini, Fulvio Negro, Maurizio
Montagnuolo, Jesse de Vos, Philo van Kemenade, Daniele Gravina, Rémi Mignot,
Alexey Ozerov, Francois Schnitzler, Artur Garcia-Saez, Georgios N. Yannakakis,
Antonios Liapis, Georgi Kostadinov*

Science4Fashion: An Autonomous Recommendation System for Fashion Designers

Iordanis Koutsopoulos, Maria Halkidi

A two-step optimised BERT-based NLP algorithm for extracting sentiment from financial news

Rapheal Olaniyan, Daniel Stamate, Ida Pu

13:15-14:30

Session 9, Workshop: DARE (Distributed AI for Resource-Constrained Platforms) / Discussion Forum / Open Session

Chair: Dr. Anna Hristoskova & Dr. Barış Bulut

13:15-13:20 - Introduction & Welcome message by the Organizers

13:20-13:35 - Emiliano Casalicchio, BTH – BLEKINGE TEKNISKA HÖGSKOLA, Sweden
An Energy-aware Multi-Criteria Federated Learning Model for Edge Computing

13:40-13:55 - Müjdat Soytürk, Marmara University, Turkey
Edge Computing and V2X: the new ecosystem on the Cloud and the network architecture

14:00-14:15 - Thomas De Moor, Sentigrate, Belgium
Intelligence trade-off: edge vs cloud

14:15-14:30 - Emre Kaplan, AVL, Turkey
Personalized Gear Shifting Architecture for Next Generation Automatic Transmission

15:30-17:00

Session 10, TUTORIAL 1: FPGA

“Utilizing Field Programmable Gate Arrays (FPGA) for AI acceleration without noticing it!”

Chair:

Tutor: **Prof. Yannis Papaefstathiou**

Aristotle University of Thessaloniki, Greece

FPGA is a hands-on tutorial which requires a high level of interaction that can't be achieved at a remote conference. **Organizing committee decided to postpone it** for an upcoming event.

15:30-16:30

Session 11, EANN: BIOMED (BIOMEDICAL)

Chair: Prof. Ilias Maglogiannis

Deep Learning of Brain Asymmetry Images and Transfer Learning for Early Diagnosis of Dementia

Nitsa Herzog, George Magoulas

Liver cancer trait detection and classification through Machine Learning on smart mobile devices

Olympia Giannou, Anastasios Giannou, Dimitra Zazara, Dörte Kleinschmidt, Tobias Mummert, Björn Ole Stüben, Michael Gerhard Kaul, Gerhard Adam, Samuel Huber, Georgios Pavlidis

Deep learning topology-preserving EEG-based images for autism detection in infants

Cosmin Stamate, George Magoulas, Michael Thomas

Using WOA with Feed Forward Neural Network in Prediction of Subcutaneous Glucose Concentration for Type-I Diabetic Patients

Fayrouz Allam

15:30-16:45

Session 12, AIAI: AUTOML-AUTOAG (AUTONOMOUS MACHINE LEARNING-AUTONOMOUS AGENTS)

Chair: Dr. Georgios Drakopoulos

Object Migration Automata for Non-Equal Partitioning Problems with Known Partition Sizes

Rebekka Olsson Omslandseter, Lei Jiao, John Oommen

An Automated Machine Learning Approach for Predicting Chemical Laboratory Material Consumption

António João Silva, Paulo Cortez

An Ontology-Based Concept for Meta AutoML

Bernhard Humm, Alexander Zender

Enhanced Security Framework for Enabling Facial Recognition in Autonomous Shuttles Public Transportation during COVID-19

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

Evaluating Task-General Resilience Mechanisms in a Multi-Robot Team Task

James Staley, Matthias Scheutz

15:30-16:45

Session 13, Workshop: 5G-PINE I (5G – Putting Intelligence to the Network Edge I)

INDUSTRY/AI 5G TECHNOLOGY Organization by the Hellenic Telecommunications

Organization Research Group

Chair: Dr. Ioannis Chochliouros

V2X Communications for the Support of GLOSA and Intelligent Intersection Applications

Ioannis Chochliouros, Anastasia Spiliopoulou, Pavlos Lazaridis, Zaharias Zaharis, Michail-Alexandros Kourtis, Slawomir Kuklinski, Lechoslaw Tomaszewski, Dimitrios Arvanitosis, Alexandros Kostopoulos

Machine Learning-Based, Networking and Computing Infrastructure Resource Management

Alexandros Kostopoulos, Ioannis Chochliouros, Miquel Payaro, Christos Verikoukis, Sabrina De Capitani di Vimercati

5G Communications as “Enabler” for Smart Power Grids: The Case of the Smart5Grid Project

Daniele Porcu, Ioannis P. Chochliouros, Sonia Castro, Giampaolo Fiorentino, Rui Costa, Dimitrios Nodaras, Vaios Koumaras, Fabrizio Brasca, Nicola di Pietro, George Papaioannou, Irina Ciornei, Antonios Sarigiannidis, Nikolay Palov, Teodor Bobochikov, Charilaos Zarakovitis, Anastasia S. Spiliopoulou

5G-VICTORI: Future Railway Communications Requirements Driving 5G Deployments in Railways

Ioanna Mesogiti, Eleni Theodoropoulou, Fotini Setaki, George Lyberopoulos, Anna Tzanakaki, Markos Anastassopoulos, Christina Politi, Panagiotis Papaioannou, Christos Tranoris, Spyros Denazis, Paris Flegkas, Nikos Makris, Nebojsa Maletic, Darko Cvetkovski, Jesus Gutierrez Teran, Panteleimon Konstantinos Chartsias, Konstantinos Stamatis, Maria-Evgenia Xezonaki, Dimitrios Kritharidis, Alexandros Dalkalitsis, Manfred Taferner, Martin Piovarci

TYPHON: Hybrid Data Lakes for Real-time Big Data Analytics – An Evaluation Framework in the Telecom Industry

Antonis Misargopoulos, George Papavassiliou, Christos Antonios Gizelis, Filippos Nikolopoulos-Gkamatsis

15:30-17:45

Session 6, Workshop: DAAI (Defense Applications of AI) / Discussion Forum / Open Session Co-Organized together with European Defense Agency

Chair: Dr. Panagiotis Kikiras

Project presentation session, EDA invited projects

- ABIDE and CLAUDIA, EDA research on innovative techniques to support the decision-making process, Jose Luis Delgado Gamella
 - Artificial Intelligence for Energy and Environmental performance in Defence – Perspectives from EDA's ARTENET project, Prof. Christos Markopoulos
 - Artificial Intelligence for Automatic Detection Recognition, Identification and Tracking, Marcos Quintana Everis
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16:45-17:30

Session 15, EANN: ML-REC-SENT (MACHINE LEARNING - RECOMMENDATION SYSTEMS - SENTIMENT ANALYSIS)

Chair: Assoc. Prof. Phivos Mylonas

Real-time Multimodal Emotion Classification System in E-learning Context

Arijit Nandi, Fatos Xhafa, Laia Subirats, Santi Fort

A Multi-Modal Audience Analysis System for Predicting Popularity of Online Videos

Alexandros Vrochidis, Nikolaos Dimitriou, Stelios Krinidis, Savvas Panagiotidis, Stathis Parcharidis, Dimitrios Tzovaras

Do Weibo platform experts perform better on predicting stock market?

Ziyuan Ma, Conor Ryan, Jim Buckley, Muslim Chochlov

16:45-17:45

Session 16, Workshop: 5G-PINE II (5G – Putting Intelligence to the Network Edge II)

INDUSTRY/AI 5G TECHNOLOGY Organization by the Hellenic Telecommunications

Organization Research Group

Chair: Dr. Ioannis Chochliouros

Top Challenges in 5G Densification

Eleni Theodoropoulou, Ioanna Mesogiti, Foteini Setaki, Konstantinos Filis, George Lyberopoulos, Agapi Mesodiakaki, Marios Gatzianas, Christos Vagionas, George Kalfas, Mauro Agus, Annachiara Pagano

Advanced first responders' services by using FASTER project Architectural Solution

Christina Lessi, Ioannis Chochliouros, Panagiotis Trakadas, Panagiotis Karkazis

5G-VICTORI: Optimizing Media Streaming in Mobile Environments using mmWave, NBMP and 5G Edge Computing

Louay Bassbous, Mehdi Ben Fadhel, Anita Chen, Stefan Pham, Stephan Steglich, Eric Troudt, Marc Emmelmann, Jesús Gutiérrez, Nebojsa Maletic, Eckhard Grass, Stefan Schinkel, Annette Wilson, Sven Glaser, Christian Schlehner

High mobility 5G services for vertical industries - network operator's view

Lechosław Tomaszewski, Ioannis Chochliouros, Robert Kořakowski, Sławomir Kukliński, Michail-Alexandros Kourtis

16:45-17:45

Session 17, Workshop: AI-BIO (Artificial Intelligence in Biomedical Engineering and Informatics)

Chair: Prof. Ilias Maglogiannis

A Machine Learning Approach for Recognition of Elders' Activities using Passive Sensors

Anastasios Panagiotis Psathas, Antonios Papaleonidas, Lazaros Iliadis

An inception-based architecture for haemodialysis time series classification

Giorgio Leonardi, Stefania Montani, Manuel Striani

Analyzing Collective Knowledge towards Public Health Policy Making

Spyridon Kleftakis, Konstantinos Mavrogiorgos, Nikolaos Zafeiropoulos, Argyro Mavrogiorgou, Athanasios Kiourtis, Ilias Maglogiannis, Dimosthenis Kyriazis

Evaluating mental patients utilizing video analysis of facial expressions

M Tziomaka, Athanasios Kallipolitis, P Tsanakas, Ilias Maglogiannis

17:45-18:45

Session 18, Plenary 2: "Backpropagation Free Deep Learning"

Chair: Prof. Plamen Angelov

Keynote Speaker: Jose Principe

Professor of Electrical and Computer Engineering and Biomedical Engineering, University of Florida. Eckis Endowed Professor and Founder-Director of the University of Florida Computational NeuroEngineering Laboratory.

Saturday 26/6/2021

10:00-17:30 Registration

10:30-11:45

Session 19, EANN: DEE-BLKCH-SEG (DEEP LEARNING-BLOCKCHAIN-SMART ENERGY GRIDS)

Chair: Dr. Konstantinos Demertzis

A Hybrid Deep Learning Ensemble for Cyber Intrusion Detection

Anastasios Panagiotis Psathas, Lazaros Iliadis, Antonios Papaleonidas

Addressing Computer Vision Challenges using an Active Learning Framework

Christina Tzogka, Ioannis Refanidis

Search Problems in Contemporary Power Grids

Theofanis Aravanis, Andreas Petratos, Georgia Douklia, Efpraxia Plati

Incentivizing Participation to Distributed Neural Network Training

Spyridon Nikolaidis, Ioannis Refanidis

Blockchained Adaptive Federated Auto MetaLearning BigData and DevOps CyberSecurity Architecture in Industry 4.0

Konstantinos Demertzis, Lazaros Iliadis, Elias Pimenidis, Nikolaos Tziritas, Maria Koziri, Panagiotis Kikiras

10:30-11:45

Session 20, AIAI: ML-HYB (MACHINE LEARNING/ HYBRID SYSTEMS)

Chair: Assoc. Prof. Christos Tjortjis

Using Machine Learning Methods to Predict Subscriber Churn of a Web-based Drug Information Platform

Athanasios Tsadiras, Georgios Theodoridis

Predicting CO2 Emissions for Buildings Using Regression and Classification

Alexia Avramidou, Christos Tjortjis

Intelligent Techniques and Hybrid Systems Experiments Using the Acumen Modeling and Simulation Environment

Sotirios Tzamaras, Stavros Adam, Walid Taha

Classification of Point Clouds with Neural Networks and Continuum-Type Memories

Stefan Reitmann, Elena Kudryashova, Bernhard Jung, Volker Reitmann

An automated tool to support an intelligence learner management system using Learning Analytics and Machine Learning

Shareeful Islam, Hasan Mahmud, Haralambos Mouratidis

10:30-11:45

Session 21, AIAI: AD-DTM (ADAPTIVE-DATA MINING)

Chair: Dr. Ioannis Livieris

Dynamic Plume Tracking Utilizing Symbiotic Heterogeneous Remote Sensing Platforms

Iakovos Michailidis, Athanasios Kapoutsis, Elias Kosmatopoulos, Yannis Boutalis
Self-organizing maps for optimized robotic trajectory planning applied to surface coating

Maria Tzinava, Konstantinos Delibasis, Spyros Kamnis

Regression Predictive Model to analyze Big Data Analytics in Supply Chain Management

Elena Puica

If Only I Would Have Done That...': A Controlled Adaptive Network Model for Learning by Counterfactual Thinking

Raj Bhalwankar, Jan Treur

A Multi-View Clustering Approach for Analysis of Streaming Data

Vishnu Manasa Devagiri, Veselka Boeva, Shahrooz Abghari

10:30-11:15

Session 22, Workshop: DAAI (Defense Applications of AI) / Discussion Forum / Open Session

Co-Organized together with European Defense Agency

Chair: Dr. Giorgos Dimitriou

EDA Action plan presentation

Panagiotis Kikiras, European Defence Agency

11:15-12:00

Session 23, Workshop: DAAI (Defense Applications of AI) / Discussion Forum / Open Session

Co-Organized together with European Defense Agency

Chair: Dr. Giorgos Dimitriou

Research on AI-based capabilities for the European Border and Coast Guard

Darek Saunders, Head of the Border Security Observatory - FRONTEX

12:00-13:30

Session 24, TUTORIAL 2 - ANDIM

“Anomaly Detection in Images”

Chair: Prof. Ilias Maglogiannis

Tutor: **Prof. Giacomo Boracchi**

Politecnico di Milano, Italy

12:00-13:00

Session 25, EANN: DEE_CON (DEEP-CONVOLUTIONAL)

Chair: Prof. Ioannis Refanidis

Repeatable functionalities in complex layers of formal neurons

Leon Bobrowski, Tomasz Łukaszuk

Data Fusion for Deep Learning on Transport Mode Detection: A Case Study

Hugues Moreau, Andrea Vassilev, Liming Chen

Toward an augmented and explainable machine learning approach for classification of defective nanomaterial patches

Cosimo Ieracitano, Nadia Mammone, Annunziata Paviglianiti, Francesco Carlo Morabito

Using Artificial Neural Network to Provide Realistic Lifting Capacity in the Mobile Crane Simulation

Simon Roysson, Taufik Akbar Sitompul, Rikard Lindell

12:00-13:15

Session 26, AIAI: NAT_LA (NATURAL LANGUAGE)

Chair: Prof. Elias Pimenidis

A comparative assessment of state-of-the-art methods for multilingual unsupervised keyphrase extraction

Nikolaos Giarelis, Nikos Kanakaris, Nikos Karacapilidis

Machine Learning Meets Natural Language Processing - The story so far

Nikolaos-Ioannis Galanis, Panagiotis Vafiadis, Kostas-Gkouram Mirzaev, George Papakostas

Robust Pose Estimation Based on Maximum Correntropy Criterion

Qian Zhang, Badong Chen

CEA-TM: A Customer Experience Analysis framework based on Contextual-aware Topic Modeling approach

Ariona Shashaj, Davide Stirparo, Mohammad Kazemi

SemAI: A Novel Approach for Achieving Enhanced Semantic Interoperability in Public Policies

George Manias, Athanasios Kiourtis, Argyro Mavrogiorgou, Dimosthenis Kyriazis

12:00-13:15

Session 27, AIAI: ML-IoT (MACHINE LEARNING - INTERNET OF THINGS)

Chair: Asst. Prof. Athanasios Tsadiras

Verification of Size Invariance in DNN Activations using Concept Embeddings

Gesina Schwalbe

A Comparative Study of Embedded Feature Selection Methods on Microarray data

Hind Hamla, Khadoudja Ghanem

BEMS in the Era of Internet of Energy: A Review

Asimina Dimara, Christos-Nikolaos Anagnostopoulos, Konstantinos Kotis, Stelios Krinidis, Dimitrios Tzovaras

Cyber Supply Chain Threat Analysis and Prediction using Machine Learning and Ontology

Shareeful Islam, Abel Yeboah-Ofori, Umar Ismail, Haralambos Mouratidis, Spyridon Papastergiou

"SAVE" – an Integrated Approach of Personal and Home Safety for Active Assisted Living

*Sorin-Aurel Moraru, Adrian Alexandru Mosoi, Dominic Mircea Kristaly, Florin Sandu,
Dan Floroian, Delia Elisabeta Ungureanu, Liviu Marian Perniu*

12:00-13:15

Session 28, Workshop: MHDW_I (Mining Humanistic Data Workshop I)

Chair: Asst. Prof. Andreas Kanavos

Movie Recommendation System based on Character Graph Embeddings

Agisilaos Kounelis, Pantelis Vikatos, Christos Makris

Privacy-Preserving Text Labelling Through Crowdsourcing

Giannis Haralabopoulos, Mercedes Torres Torres, Ioannis Anagnostopoulos, Derek Mcauley

Forecasting Air Flight Delays and Enabling Smart Airport Services in Apache Spark

Gerasimos Vonitsanos, Theodor Panagiotakopoulos, Andreas Kanavos, Athanasios Tsakalidis

Visitor behavior analysis for an ancient Greek technology exhibition

Dimitrios Kosmopoulos, Kali Tzortzi

Recognition of epidemic cases in social web texts

Apostolos Antonakakis, Eleftherios Alexiou, Nemanja Jevtic, Georgios Sideras, Eftichia Farmaki, Sofronia Foutsitzi, Katia Lida Kermanidis

12:00-13:30

Session 29, Workshop: DARE (Distributed AI for Resource-Constrained Platforms) /

Discussion Forum / Open Session

Chair: Dr. Giorgos Dimitriou

AI in Security and Defence, Moderated Round table

13:30-14:30

Session 30, Plenary 3: “Is “Big Tech” Becoming the “Big Tobacco” of Artificial Intelligence?”

Chair: Prof. Lazaros Iliadis

Keynote Speaker: John Macintyre

Pro Vice Chancellor at the University of Sunderland, United Kingdom

15:30-16:30

Session 31, Plenary 4: “Human-Centered Computer Vision: Core Components and Applications”

Chair: Prof. Ilias Maglogiannis

Keynote Speaker: Antonis Argyros

Professor and Chair, Computer Science Department, University of Crete, Greece
Researcher, Foundation for Research and Technology – Hellas (FORTH)

16:30-17:45

Session 32, EANN: DEE-CLA-FZ (DEEP LEARNING-CLASSIFICATION-FUZZY)

Chair: Assoc. Prof. Dimitrios Kosmopoulos

EANN # 41, 38, 14, 19, 17

Face Detection with YOLO on Edge

Adamu Ali-Gombe, Eyad Elyan, Carlos Francisco Moreno-García, Johan Zwiigelaar

Fuzzy Approach to Identity Resolution

Asif Nawaz, Hassan Kazemian

Anomaly Detection by Robust Feature Reconstruction

Ron Triepels Theofanis Aravanis, Andreas Petratos, Georgia Douklia, Efpraxia Plati

Squeeze-and-Threshold based quantization for Low-Precision Neural Networks

Binyi Wu, Bernd Waschneck, Christian Mayr

Efficient Realistic Data Generation Framework leveraging Deep Learning-based Human Digitization

Charalampos Symeonidis, Paraskevi Nousi, Pavlos Tosidis, Konstantinos Tsampazis, Nikolaos Passalis, Anastasios Tefas, Nikos Nikolaidis

16:30-17:45

Session 33, AIAI: DL-BLC (DEEP LEARNING - BLOCKCHAIN)

Chair: Assoc. Prof. Vangelis Metsis

Improved Biomedical Entity Recognition via longer context modelling

Nikolaos Stylianou, Panagiotis Kosmoliaptsis, Ioannis Vlahavas

ebioMelDB: Multi-modal database for melanoma and its application on estimating patient prognosis

Aigli Korfiati, Giorgos Livanos, Christos Konstantinou, Sophia Georgiou, George Sakellaropoulos

Federated Blockchain Supply Chain Management: A CyberSecurity and Privacy Framework

Konstantinos Demertzis, Lazaros Iliadis, Elias Pimenidis, Nikolaos Tziritas, Maria Koziri, Panagiotis Kikiras, Michael Tonkin

Learning Sentiment-aware Trading Strategies for Bitcoin leveraging Deep Learning-based Financial News Analysis

Nikolaos Passalis, Solon Seficha, Avraam Tsantekidis, Anastasios Tefas

Analysis and Prediction for House Sales Price Using a Hybrid Machine Learning Approach

S. M. Soliman Hossain, Jyoti Rawat, Doina Logofatu

16:30-17:45

Session 34, Workshop: EEAI (Energy Efficiency and Artificial Intelligence)

Chair: Dr. Stelios Krinidis, Dr. Dimitrios Tzovaras, Prof. Jasminko Novak

Semantic modeling of trustworthy IoT entities in energy-efficient cultural spaces

Konstantina Zachila, Konstantinos Kotis, Asimina Dimara, Stamatia Ladikou, Christos-Nikolaos Anagnostopoulos

Short Term Net Imbalance Volume Forecasting through Machine and Deep Learning: A UK case study

Elpiniki Makri, John Koskinas, Apostolos Tsolakis, Dimosthenis Ioannidis, Dimitrios Tzovaras

Explainable needn't be (much) less accurate: evaluating an explainable AI dashboard for energy forecasting

Ana Grimaldo, Jasminko Novak

Improving Energy Efficiency in Tertiary Buildings through user-driven Recommendations delivered on optimal Micro-moments

Apostolos C. Tsolakis, George Tsakirakis, Vasileios G. Vasilopoulos, Konstantinos Peppas, Charisios Zafeiris, Iordanis Makaratzis, Ana Grimaldo, Stelios Krinidis, Jasminko Novak, George Bravos, Dimitrios Tzovaras

A Recommendation Specific Human Activity Recognition Dataset with Mobile Device's Sensor Data

Alexandros Vrochidis, Vasileios G. Vasilopoulos, Konstantinos Peppas, Valia Dimaridou, Iordanis Makaratzis, Apostolos C. Tsolakis, Stelios Krinidis, Dimitrios Tzovaras

16:30-17:30

Session 35, Workshop: DAAI (Defense Applications of AI)

Chair: Prof. Lazaros Iliadis

On the potential of SDN enabled network deployment in tactical environments

Georgios Lazaridis, Kostas Papachristou, Anastasios Drosou, Dimosthenis Ioannidis, Periklis Chatzimisios, Dimitrios Tzovaras

A Lipschitz - Shapley Explainable Defense Methodology Against Adversarial Attacks

Konstantinos Demertzis, Panagiotis Kikiras, Lazaros Iliadis

A Multimodal AI-leveraged Counter-UAV Framework for Diverse Environments

Eleni Diamantidou, Antonios Lalas, Konstantinos Votis, Dimitrios Tzovaras

Cyber-attack detection and trust management toolkit for defence-related microgrids

Charalampos - Rafail Medentzidis, Thanasis Kotsiopoulos, Vasileios Vellikis, Dimosthenis Ioannidis, Dimitrios Tzovaras, Panagiotis Sarigiannidis

Sunday 27/6/2021

10:00-18:00 Registration

10:30-11:30

Session 36, Plenary 5: "How can Artificial Intelligence efficiently support Sustainable Development?"

Chair: Prof. Ilias Maglogiannis

Keynote Speaker: Eunika Mercier-Laurent

Université de Reims Champagne-Ardenne, CReSTIC/MODECO

11:30-12:45

Session 37, EANN: DEE – ADV-FUZZY (DEEP LEARNING – ADVERSARIAL-FUZZ)

Chair: Prof. Hassan Kazemian

Deep Learning for Water Quality Classification in Water Distribution Networks

Essa Q. Shahra, Wenyan Wu, Shadi Basurra, Stamatia Rizou

Face Spoof Detection: An Experimental Framework

Faseela Abdullakutty, Eyad Elyan, Pamela Johnston

Automatic Facial Expression Neutralisation Using Generative Adversarial Network

Wiem Grina, Ali Douik

Early prediction of COVID-19 onset by fuzzy-neuro inference

Mario Malcangi

Creating Ensembles of Generative Adversarial Network Discriminators for One-class Classification

Mihai Ermaliuc, Daniel Stamate, George Magoulas, Ida Pu

11:30-12:45

Session 38, AIAI: ML-BIC (MACHINE (DEEP) LEARNING-BRAIN INSPIRED COMPUTING)

Chair: Prof. Will Serrano

System-wide anomaly detection of industrial control systems via deep learning and correlation analysis

Gordon Haylett, Zahra Jadidi, Kien Nguyen Thanh

PQ-HDC: Projection-based Quantization Scheme for Flexible and Efficient Hyperdimensional Computing

Chi-Tse Huang, Cheng-Yang Chang, YUCHUAN CHUANG, An-Yeu Wu

Scalable NPairLoss-based Deep-ECG for ECG Verification

Yu-Shan Tai, Yi-Ta Chen, An-Yeu Wu

Hyperdimensional Computing with Learnable Projection for User Adaptation Framework

Yu-Ren Hsiao, YUCHUAN CHUANG, Cheng-Yang Chang, An-Yeu (Andy) Wu

An Approach Utilizing Linguistic Features for Fake News Detection

11:30-12:30

Session 39, AIAI: DL-CON III (DEEP LEARNING CONVOLUTIONAL_III)

Chair: Assoc. Prof. Christos Makris

An autoencoder convolutional neural network framework for Sarcopenia detection based on multi-frame ultrasound image slices

Emmanuel Pintelas, Ioannis Livieris, Nikolaos Barotsis, George Panayiotakis, Panagiotis Pintelas

A Computational Model for the Second-Order Adaptive Causal Relationships between Anxiety, Stress and Physical Exercise

Lars Rass, Jan Treur

Improving the flexibility of production scheduling in flat steel production through standard and AI-based approaches: challenges and perspectives

Vincenzo Iannino, Valentina Colla, Alessandro Maddaloni, Jens Brandenburger, Ahmad Rajabi, Andreas Wolff, Joaquin Ordieres, Miguel Gutierrez, Erwin Sirovnik, Dirk Mueller, Christoph Schirm

Efficient Approaches for Density-Based Spatial Clustering of Applications with Noise (short)

Pretom Kumar Saha, Doina Logofatu

11:30-12:30

Session 40, Workshop: MHDW_II (Mining Humanistic Data Workshop II)

Chair: Assoc. Prof. Katia Lida Kermanidis

Self-supervised approach for Urban Tree Recognition on Aerial Images

Lakshmi Babu Saheer, Mohamed Shahawy

Community Detection Algorithms for Cultural and Natural Heritage Data in Social Networks

Andreas Kanavos, Maria Trigka, Elias Dritsas, Gerasimos Vonitsanos, Phivos Mylonas

Active Bagging Ensemble Selection

Vangjel Kazllarof, Sotiris Kotsiantis

Applying Machine Learning to Predict Whether Learners will Start a MOOC after Initial Registration

Theodor Panagiotakopoulos, Sotiris Kotsiantis, Spiros Borotis, Fotis Lazarinis, Achilles Kameas

13:00-14:00

Session 41, Plenary 6: "Deep learning and Kernel Machines"

Chair: Prof. Eunika Mercier-Laurent

Keynote Speaker: Prof. Dr.ir. Johan Suykens

KU Leuven, ESAT-Stadius and Leuven AI Institute

14:00-15:15

Session 42, EANN: DEE-FUZZ (DEEP LEARNING-FUZZY)

Chair: Assoc. Prof. Christos Makris

Deep Neural Networks for Indoor Geomagnetic Field Fingerprinting with Regression Approach

Mahdi Abid, Grégoire Lefebvre

Drilling Operations Classification Utilizing Data Fusion and Machine Learning Techniques

Marzieh Zare, Jussi-Pekka Lehtinen, Hesam Jafarian, Ari Visa, Liisa Aha

Impact of Classifiers to Drift Detection Method: A comparison

Angelos Angelopoulos, Anastasios Giannopoulos, Nikolaos Kapsalis, Sotirios Spantideas, Lambros Sarakis, Stamatis Voliotis, Panagiotis Trakadas

Recommender systems algorithm selection using machine learning

Nikolaos Polatidis, Stelios Kapetanakis, Elias Pimenidis

A Novel CNN-LSTM Hybrid Architecture for the Recognition of Human Activities

Sofia Stylianou-Nikolaïdou, Ioannis Vernikos, Eirini Mathe, Evaggelos Spyrou, Phivos Mylonas

14:00-15:15

Session 43, AIAI: DEE-FZ (DEEP LEARNING-Fuzzy)

Chair: Prof. Kostas Delibasis

Intuitionistic Fuzzy Neural Network for Time Series Forecasting - The Case of Metal Prices

Petr Hajek, Vladimir Olej, Wojciech Froelich, Josef Novotny

Artificial Intelligence in Music Composition

Mincer Alaeddine, Anthony Tannoury

An Effective Loss Function for Generating 3D Models from Single 2D Image without Rendering

Nikola Zubić, Pietro Liò

Neural Network Compression Through Shunt Connections and Knowledge Distillation for Semantic Segmentation Problems

Bernhard Haas, Alexander Wendt, Axel Jantsch, Matthias Wess

Event-Detection Deep Neural Network for OTDR Trace Analysis**

Davide Rutigliano, Giacomo Boracchi, Pietro Invernizzi, Enrico Sozio, Cesare Alippi, Stefano Binetti

***EANN 2021 Paper*

14:00-15:00

Session 44, AIAI: DTM-ML (DATA MINING-MACHINE LEARNING)

Chair: Asst. Prof. Sotiris Kotsiantis

BIBLIOBICLUSTER: A bicluster algorithm for Bibliometrics

Gloria Gheno

Topic identification via human interpretation of word clouds: The case of Instagram hashtags

Stamatios Giannoulakis, Nicolas Tsapatsoulis

The Generative Adversarial Random Neural Network

Will Serrano

Validation and Verification for Data Marketplaces

Will Serrano

16:15-17:15

Session 45, Plenary 7: “Unveiling Recurrent Neural Networks – What Do They Actually Learn and How?”

Chair: Prof. Johan Suykens

Keynote Speaker: Prof. Peter Tino

School of Computer Science, University of Birmingham, UK

17:15-18:45

Session 46, TUTORIAL 3: MM_HUB

“Modern methods and tools for human biosignal analysis”

Chair: Prof. Ilias Maglogiannis

Tutor: **Prof. Vangelis Metsis**

Texas State University, USA

17:15-18:15

Session 47, Workshop: 5G-PINE III (5G – Putting Intelligence to the Network Edge III)

INDUSTRY/AI 5G TECHNOLOGY Organization by the Hellenic Telecommunications

Organization Research Group

Chair: Dr. Ioannis Chochliouros

A Novel Architectural Approach for the Provision of Scalable and Automated Network Slice Management, in 5G and Beyond

Ioannis Chochliouros, Slawomir Kuklinski, Lechoslaw Tomaszewski, Christos Verikoukis, Anastasia Spiliopoulou, Alexandros Kostopoulos, Robert Kofakowski

The Challenge of Security Breaches in the Era of 5G Networking

Maria Belesioti, Jorge Carapinha, Rodoula Makri, Ioannis Chochliouros

Power Control in 5G Heterogeneous Cells considering User Demands using Deep Reinforcement Learning

Anastasios Giannopoulos, Sotirios Spantideas, Christos Tsinos, Panagiotis Trakadas

A prototype 5G/IoT implementation for transforming a legacy facility to a Smart Factory

Panagiotis Papaioannou, Nikolaos Tzanis, Christos Tranoris, Spyros Denazis, Alexios Birbas

17:45-18:45

Session 48, EANN: ML-SENT (MACHINE LEARNING-SENTIMENT ANALYSIS)

Chair: Prof. Elias Pimenidis

Improving the Diagnosis of Breast Cancer by Combining Visual and Semantic Feature Descriptors

George Apostolopoulos, Athanasios Koutras, Dionysios Anyfantis, Ioanna Christoyianni, Evangelos Dermatas

Contaminated Soil Detection: A proposal using Machine Learning with Hyperspectral imaging

Fernando Henrique Oliveira Duarte, Gustavo Pessin, Rosa Elvira Correa Pabón, Jefferson Souza

Predicting Stock Price Movement using Financial News Sentiment

Jiaying Gong, Bradley Paye, Gregory Kadlec, Hoda Eldardiry

Inverse Kinematics via a Network Ensemble and Learning Method

Joshua Ramayrat, Teng-Sheng Moh

17:45-18:45

Session 49, AIAI: ML-DL (MACHINE-DEEP LEARNING)

Chair: Prof. Doina Logofatou

Cross-lingual Approaches for Task-specific Dialogue Act Recognition

Jiří Martínek, Christophe Cerisara, Pavel Kral, Ladislav Lenc

Collaborative Edge-Cloud Computing for Personalized Fall

Anne Ngu, Shaun Coyne, Priyanka Srinivas, Vangelis Metsis

A Survey of Methods for Detection and Correction of Noisy Labels in Time Series Data

Gentry Atkinson, Vangelis Metsis

Deep Learning and AI for Optimization in 5G Technology

Mahnaz Olfati, Kiran Parma

17:15-18:30

Session 50, Workshop: EEAI (Energy Efficiency and Artificial Intelligence) / Discussion Forum / Open Session

Chair: Dr. Stelios Krinidis, Dr. Apostolos Tsolakis & Prof. Jasminko Novak

17:15-17:25 - Dr. Stelios Krinidis, Presentation of the SIT4Energy project

17:25-17:50 - Prof. Jasminko Novak, Intelligent Energy Management Tools for Prosumer Scenarios

17:50-18:10 - Dr. Siranush Akarmazyan, Improved customer experience via intelligent mobile applications

18:10-18:30 - Round table discussion

19:00-19:15 Closing Session

Webex Events Platform Access Links

Plenaries, Keynotes, Tutorials, and Invited Workshops

Sessions: 1, 7, 18, 24, 30, 31, 36, 41, 45 & 46 (all Open Access)

[22nd EANN / 17th AIAI 2021, Open Plenaries & Tutorials Room](#)

22nd EANN 2021 Technical Sessions

Sessions: 2, 11, 15, 19, 25, 32, 37, 42 & 48

[22nd EANN / 17th AIAI 2021, Room A](#)

17th AIAI 2021 Technical Sessions

Sessions: 3, 8, 12, 20, 26, 33, 38, 43 & 49

[22nd EANN / 17th AIAI 2021, Room B](#)

Sessions: 21, 27, 39 & 44

[22nd EANN / 17th AIAI 2021, Room C](#)

Technical Workshops

5G-PINE 2021, [22nd EANN / 17th AIAI 2021, Workshops Room A](#)

6th Workshop on “5G – Putting Intelligence to the Network Edge”

Sessions: 13, 16 & 47

AI – BIO 2021, [22nd EANN / 17th AIAI 2021, Workshops Room B](#)

Artificial Intelligence in Biomedical Engineering and Informatics

Session: 17

DAAI 2021, [22nd EANN / 17th AIAI 2021, Workshops Room B](#)

Defense Applications of AI

Session: 35

DARE 2021, [22nd EANN / 17th AIAI 2021, Workshops Room A](#)

Distributed AI for Resource-Constrained Platforms

Session: 4

EEAI 2021, [22nd EANN / 17th AIAI 2021, Workshops Room A](#)

Energy Efficiency and Artificial Intelligence

Session: 34

MHDW 2021, [22nd EANN / 17th AIAI 2021, Workshops Room A](#)

10th Mining Humanistic Data Workshop

Sessions: 28 & 40

**Webex Events Platform Access Links
for Open Access Special Session & Discussion Forums**

**The 1st Workshop on Defense Applications of AI
Co-Organized together with the European Defense Agency**

DAAI 2021 Special Sessions & Discussion Forums

[22nd EANN / 17th AIAI 2021, Open Rooms / DAAI Special Session - Discussion Forum](#)

Distributed AI for Resource-Constrained Platforms

DARE 2021 Special Sessions & Discussion Forums

[22nd EANN / 17th AIAI 2021, Open Rooms / DARE Discussion Forum](#)

Energy Efficiency and Artificial Intelligence

EEAI 2021 Special Sessions & Discussion Forums

[22nd EANN / 17th AIAI 2021, Open Rooms / EEA Discussion Forum](#)

Designing a Novel Adaptive Cybersecurity Solution for Internet-of-Vehicle

nIoVw 2021 Special Sessions & Discussion Forums

[22nd EANN / 17th AIAI 2021, Open Rooms / NIoVe Discussion Forum](#)

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Those Sessions are: **1, 5, 6, 7, 9, 14, 18, 22, 23, 24, 29, 30, 31, 36, 41, 45, 46 & 50**

Access to EANN 2021 and AIAI 2021 Technical sessions will be given to **ALL co-authors of ALL accepted papers.** The registration procedure, for each author, has already been made by the staff of EANN and AIAI and access has been already granted to all author's emails.

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More info can be found under the “**Live Event**” section of the above web sites.