Computer Analysis of Images and Patterns

20th International Conference

26 – 28 September, Main Conference Event
25 September, Tutorials

Limassol, Cyprus

FINAL PROGRAM

Computer Analysis of Images and Patterns

20th International Conference, CAIP 2023, Limassol, Cyprus, September 25-28, 2023, Proceedings

Editors: Tsapatsoulis N., Lanitis A., Pattichis M., Pattichis C., Kyrkou C., Kyriacou E., Theodosiou Z., Panayides A. (Eds.)

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Computer Analysis of Images and Patterns

20th International Conference, CAIP 2023, Limassol, Cyprus, September 25-28, 2023, Proceedings

Editors:
Nicolas Tsapatsoulis, *Cyprus University of Technology, Cyprus*

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CAIP 2023

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WELCOME

CAIP 2023 is the 20th in the CAIP series of biennial international conferences devoted to all aspects of computer vision, image analysis and processing, pattern recognition, and related fields. Previous conferences were held in Salerno, Ystad, Valletta, York, Seville, Münster, Vienna, Paris, etc, see following subsection.

The scientific program of the conference consists of plenary lectures and contributed papers presented in a single track. A total of 67 papers were submitted and were reviewed single blindly by at least two reviewers per paper. A total of 52 papers were accepted. The program features the presentation of these papers organized under the following eight Sessions:

SESSION 1: Deep Learning

SESSION 2: Machine Learning for Image and Pattern Analysis I

SESSION 3: Machine Learning for Image and Pattern Analysis II

SESSION 4: Analysis Object Recognition and Segmentation

SESSION 5: Biometrics/Human Pose Estimation/Action Recognition

SESSION 6: Biomedical Image and Pattern

SESSION 7: General Vision/AI Applications I

SESSION 8: General Vision/AI Applications II

Furthermore, CAIP 2023 features a contest on "Pedestrian Attributes Recognition with Multi-Task Learning (PAR Contest 2023)", organized by Antonio Greco, University of Salerno, Italy and Bruno Vento, University of Napoli, Italy.

CAIP 2023 proceedings will be published by Springer Verlag's series Lecture Notes in Computer Science (LNCS).

In addition, CAIP 2023 program includes distinguished plenary keynote speakers from academia and the industry world who will share their insights and accomplishments as well as their vision for the future of the field. More specifically:

Keynote Lecture 1: **Improving Contour Detection by Surround Suppression of Texture**
Prof. Nicolai Petkov
Bernoulli Institute of Mathematics, Computer Science and Artificial Intelligence
University of Groningen, Netherlands

Keynote Lecture 2: **Semiconductor Chips in the Center of Geopolitical Competition**
Chrysostomos L. Nikias, Ph.D.
President Emeritus and Professor of Electrical Engineering
Malcolm R. Currie Chair in Technology and the Humanities
Director, The Institute for Technology Enabled Higher-Education
University of Southern California

Moreover, CAIP 2023 includes four tutorials as follows:

Tutorial 1: A tutorial on multimodal video analysis for understanding human behaviour
Estefanía Talavera Martínez, Assistant professor, University of Twente

Tutorial 2: Stochastic gradient descent (SGD) and variants: Evolution and recent *trends*
Paul A. Rodriguez, Pontifical Catholic University of Peru

Tutorial 3: Video Analysis Methods for Recognizing Multiple Human Activities
Marios S. Pattichis, Department of Electrical and Computer Engineering, University of New Mexico, USA

Tutorial 4: Using digital tools for health and improving digital skills of health professionals in oncology - Needs assessment for clinical and non-clinical professionals
Efthyvoulos Kyriacou, *Coordinator, Cyprus University of Technology, Cyprus*

We want to express our deepest appreciation to all the members of the CAIP 2023 organizing committees and technical program committees, the associate editors, as well as all the reviewers for their dedication and hard work in creating an excellent scientific program. We want to thank all the authors who submitted their papers for presentation at the meeting, and all of you for being here to take part in CAIP 2023 and share your work.

Moreover, we would like to express our sincere thanks to Easy Conferences personnel and especially Christos Therapontos for their excellent and continuous support throughout the course of organizing this conference. In addition, we would like to express our sincere thanks to Elena Polycarpou for her excellent secretarial support.

The Organizing Committee would like to thank you for your commitment and support and reassure you that they are dedicated to offering the best possible online experience to attendees.

We look forward to meeting you all during this exciting and memorable event!

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Nicolas Tsapatsoulis, *Cyprus University of Technology, Cyprus*

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Marios Pattichis, *The University of New Mexico, USA*

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International Conference on Computer Analysis of Images and Patterns (CAIP)

About CAIP Contacts Archive

CAIP has been held biennially since 1985 as follows:

Nr/Year	Location	Dates	Chair(s)	Proceedings
19/2021	Nicosia, Cyprus	Sept 27-30	Constantinos S. Pattichis, Andreas Lanitis, Nicolai Petkov	LNCS 13052-13053
18/2019	Salerno, Italy	Sept 3-5	Mario Vento and Gennaro Percannella	LNCS 11678-11679
17/2017	Ystad, Sweden	Aug 22-24	Michael Felsberg, Anders Heyden, Norbert Krueger	LNCS 10424-10425
16/2015	Valletta, Malta	Sept 2-4	George Azzopardi and Nicolai Petkov	LNCS 9256-9257
15/2013	York, UK	Aug 27-29	Edwin Hancock, Adrian Bors, Will Smith, and Richard Wilson	LNCS 8047-8048
14/2011	Seville, Spain	Aug 29-31	Walter Kropatsch and Pedro Real Jurado	LNCS 6854-6855
13/2009	Münster, Germany	Sep 2-4	Xiaoyi Jiang and Nicolai Petkov	LNCS 5702
12/2007	Vienna, Austria	Aug 27-29	Walter Kropatsch and Martin Kampel	LNCS 4673
11/2005	Paris, France	Sep 5-8	André Gagalowicz	LNCS 3691
10/2003	Groningen, The Netherlands	Aug 25-27	Nicolai Petkov and Michel Westenberg	LNCS 2756
9/2001	Warsaw, Poland	Sep 5-7	Wladyslaw Skarbek	LNCS 2124
8/1999	Ljubljana, Slovenia	Sep 1-3	Franc Solina and Ales Leonardis	LNCS 1689
7/1997	Kiel, Germany	Sep 10-12	Gerald Sommer, Konstantinos Daniilidis and Josef Pauli	LNCS 1296
6/1995	Prague, Czech Republic	Sep 6-8	Václav Hlavác and Radim Sára	LNCS 970
5/1993	Budapest, Hungary	Sep 13-15	Dmitry Chetverikov and Walter Kropatsch	LNCS 719
4/1991	Dresden, Germany	Sep 17-19	Reinhard Klette	Akademie Verlag

3/1989	Leipzig, Germany	Sep 8-10	Klaus Voss, Dmitry Chetverikov and Gerald Sommer	Akademie Verlag
2/1987	Wismar, Germany	Sep 2-4	L. P. Iaroslavskii, Azriel Rosenfeld and Wolfgang Wilhelmi	Akademie Verlag
1/1985	Berlin, Germany	Oct 17-18	Reinhard Klette	Kammer der Technik

CAIP 2023 Tutorials

September 25th, 2023

09:00 – 10:30

Tutorial 1: ***Room: Mermaid***

A tutorial on multimodal video analysis for understanding human behaviour

Estefanía Talavera Martínez, Assistant professor, University of Twente

11:00 – 12:30

Tutorial 2: ***Room: Mermaid***

Stochastic gradient descent (SGD) and variants: Evolution and recent trends

Paul A. Rodriguez, Pontifical Catholic University of Peru

14:30 – 16:00

Tutorial 3: ***Room: Mermaid***

Video Analysis Methods for Recognizing Multiple Human Activities

Marios S. Pattichis, Department of Electrical and Computer Engineering
University of New Mexico, USA

16:30 – 18:30

Tutorial 4: ***Room: Mermaid***

Using digital tools for health and improving digital skills of health professionals in oncology - Needs assessment for clinical and non-clinical professionals

Efthyvoulos Kyriacou, *Coordinator, Cyprus University of Technology, Cyprus*

CAIP 2023 Contest

September 25th, 2023

19:00 – 19:45

PAR Contest 2023: Pedestrian Attributes Recognition with Multi-Task Learning

Room: Mermaid

Co-Chairs

Antonio Greco, *University of Salerno, Italy*

Bruno Vento, *University of Napoli, Italy*

19.00 – 19.15	PAR Contest 2023: Pedestrian Attributes Recognition with Multi-Task Learning *Antonio Greco[1] and Bruno Vento[2]* [1]Dept. of Information and Electrical Engineering and Applied Mathematics (DIEM), University of Salerno, Italy [2]University of Naples, Naples, Italy
19.15 – 19.45	Evaluation of a Visual Question Answering Architecture for Pedestrian Attribute Recognition *Modesto Castrillon-Santana[1], Elena Sanchez-Nielsen[2], David Freire-Obregon[1], Oliverio J. Santana[1], Daniel Hernandez-Sosa[1], and Javier Lorenzo-Navarro[1]* [1]Universidad de Las Palmas de Gran Canaria, Las Palmas de Gran canaria, Spain [2]Universidad de La Laguna, San Crist´obal de La Laguna, Spain

Welcome Cocktail

September 25th, 2023

20:00 – 22:00
Welcome Cocktail

CAIP 2023 Program at a Glance

TIME	TUESDAY 26th September 2023 Room: Mermaid	WEDNESDAY 27th September 2023 Room: Mermaid	THURSDAY 28th September 2023 Room: Mermaid
09:00-10:30	**Keynote Lecture 1: Improving Contour Detection by Surround Suppression of Texture** Chair: Andreas Lanitis	**Keynote Lecture 2: Semiconductor Chips in the Center of Geopolitical Competition** Chair: Nicolas Tsapatsoulis	**General Vision / AI Applications I** Chair: Andreas Panayides
10:30-11:00	COFFEE BREAK		
11:00-12:30	**Deep Learning** Chair: Christos Kyrkou	**Object Recognition and Segmentation** Chair: Christos Loizou	**General Vision / AI Applications II** Chair: Zenonas Theodosiou --- **Closing Ceremony** ---
12:30-14:00	LUNCH BREAK		
14:00-15:30	**Machine Learning for Image and Pattern Analysis I** Chair: Nicolas Tsapatsoulis	**Biometrics / Human Pose Estimation / Action Recognition** Chair: Andreas Lanitis	
15:30-16:00	COFFEE BREAK		
16:00-17:30	**Machine Learning for Image and Pattern Analysis II** Chair: Marios Pattichis	**Biomedical Image and Pattern Analysis** Chair: Efthyvoulos Kyriacou	

Keynote Lecture 1:
Improving contour detection by surround suppression of texture

Prof. Nicolai Petkov

Bernoulli Institute of Mathematics, Computer Science and Artificial Intelligence
University of Groningen, Netherlands

Abstract: Various effects show that the visual perception of an edge or line can be influenced by other such stimuli in the surroundings. Such effects can be related to non-classical receptive field (non-CRF) inhibition, also called surround suppression, that is found in a majority of the orientation selective neurones in the primary visual cortex. A mathematical model of non-CRF inhibition is presented. Non-CRF inhibition acts as a feature contrast computation for oriented stimuli: the response to an edge at a given position is suppressed by other edges in the surround. Consequently, it strongly reduces the responses to texture edges while scarcely affecting the responses to isolated contours. The biological utility of this neural mechanism might thus be that of improving contour (vs. texture) detection. The results of computer simulations based on the proposed model explain perceptual effects, such as orientation contrast pop-out, 'social conformity' of lines embedded in gratings, reduced saliency of contours surrounded by textures and decreased visibility of letters embedded in band-limited noise. The insights into the biological role of non-CRF inhibition can be utilised in machine vision. The proposed model is employed in a contour detection algorithm. Applied on natural images it outperforms previously known such algorithms in computer vision.

Short Bio: Nicolai Petkov was full professor of computer science (chair of Parallel Computing and Intelligent Systems) at the University of Groningen from 1991 till 2023. From 1998 till 2009 he was scientific director of the Institute for Mathematics and Computer Science. He has done research in parallel computing, pattern recognition, image processing, computer vision and applied machine learning. His current research interests as emeritus professor concern predictive analysis of financial time series.

Chair: Andreas Lanitis, *CYENS & Cyprus University of Technology, Cyprus*

September 27th, 2023

Room: Mermaid

Keynote Lecture 2:
Semiconductor Chips in the Center of Geopolitical Competition

Chrysostomos L. Nikias, Ph.D
President Emeritus and Professor of Electrical Engineering
Malcolm R. Currie Chair in Technology and the Humanities
Director, The Institute for Technology Enabled Higher-Education
University of Southern California

Abstract: Semiconductor chips are the "brains" behind everything of today's economy. They have become the world's most critical industry. The single most important factor affecting semiconductors is a "cold war-type tensions" that has slowly developed in recent years between the U.S. and China that are rooted in the starkly different systems of governance of the world's two largest economies: democracy versus autocracy. We will address the current geopolitical tensions that are disrupting the crucial global semiconductor industry even as the artificial intelligence applications and cloud computing revolutions fuel a surge in demand, the complexities and multinational nature of the supply chain, the challenges with 5G telecommunications hardware, the importance of educating this industry's highly skilled workforce, the role that democratic societies around the world can play, and make some predictions on what the future holds.

Short Bio: Dr. Chrysostomos L. Nikias is currently President Emeritus and Life Trustee of the University of Southern California (USC), Professor of Electrical Engineering, and the holder of the Malcolm R. Currie Chair in Technology and the Humanities. He has been at USC since 1991, and in addition to his work as a professor, has served as research center director, dean of engineering, provost, and president of the university. Dr. Nikias is a member of the National Academy of Engineering, a fellow of the American Academy of Arts & Sciences, a charter fellow of the National Academy of Inventors, an associate member of the Academy of Athens, a foreign member of the Russian Academy of Sciences, and a life fellow of the Institute of Electrical and Electronics Engineers (IEEE). He is the recipient of the IEEE Simon Ramo Medal for exceptional achievement in systems engineering, the Academic Leadership Award from the Carnegie Corporation of New York, the Ellis Island Medal of Honor, the UNICEF's Spirit of Compassion Award, and six honorary doctorates.

Chair: Nicolas Tsapatsoulis, *Cyprus University of Technology, Cyprus*

Presentation Guidelines

All paper presentation sessions have been allocated a 90 minutes slot for the presentation of 6 papers. Each paper has been allocated a 12-minute slot for its presentation and 3 minutes for discussion.

Presenters will be required to upload their presentations on the day of their presentation on the meeting room's laptop.

Accepted formats: PowerPoint (.ppt) and PDF (.pdf).

Wi-Fi Access

The Wi-Fi of the venue is:

- Network: atlantica
- Password: atlantica

CAIP 2023 Program

Monday 25 September 2023

TUTORIALS

09:00 - 10:30	**Tutorial 1**: Room: Mermaid	**Multimodal video analysis for understanding human behaviour**
		Estefanía Talavera Martínez, University of Twente
10:30 - 11:00	**Break**	
11:00 - 12:30	**Tutorial 2**: Room: Mermaid	**Stochastic gradient descent (SGD) and variants: Evolution and recent trends**
		Paul A. Rodriguez, Pontifical Catholic University of Peru
12:30 - 14:30	**Break**	
14:30-16:00	**Tutorial 3**: Room: Mermaid	**Video Analysis Methods for Recognizing Multiple Human Activities**
		Marios S. Pattichis, University of New Mexico
16:00 - 16:30	**Break**	
16:30 - 18:30	**Tutorial 4**: Room: Mermaid	**Using digital tools for health and improving digital skills of health professionals in oncology - Needs assessment for clinical and non-clinical professionals**
		Efthyvoulos Kyriacou, Cyprus University of Technology

CONTEST

Room: Mermaid

19:00 - 19:45	**PAR Contest 2023**	**Pedestrian Attributes Recognition with Multi-Task Learning**
	Chairs: ***Antonio Greco***, University of Salerno, Italy ***Bruno Vento,*** University of Napoli, Italy	
19:00 - 19:15	**"PAR Contest 2023: Pedestrian Attributes Recognition with Multi-Task Learning"** *Antonio Greco and Bruno Vento*	
19:15 - 19:45	**"Evaluation of a Visual Question Answering Architecture for Pedestrian Attribute Recognition"** *Modesto Castrillon-Santana, Elena Sanchez-Nielsen, David Freire-Obregon, Oliverio J. Santana, Daniel Hernandez-Sosa and Javier Lorenzo-Navarro*	

20:00 - 22:00: Welcome Cocktail

Tuesday 26 September 2023

Room: Mermaid

09:00 - 10:30	**Keynote Lecture #1:**	**Improving contour detection by surround suppression of texture**
	Prof. Nicolai Petkov *Bernoulli Institute of Mathematics, Computer Science and Artificial Intelligence, University of Groningen, Netherlands*	
	Chair: *Andreas Lanitis*, Cyprus University of Technology	

10:30 - 11:00: **Coffee Break**

11:00 - 12:30	**Deep Learning**
	Chair: *Christos Kyrkou*, KIOS Center of Excellence
11:00 - 11:15	**"True Rank Guided Efficient Neural Architecture Search for End to End Low-Complexity Network Discovery"** Shahid Siddiqui, Christos Kyrkou and Theo Theocharides
11:15 - 11:30	**"Explainability-enhanced neural network for thoracic diagnosis improvement"** Flavia Costi, Darian Onchis, Codruta Istin and Gabriel V. Cozma
11:30 - 11:45	**"A comparison of neural network-based super-resolution models on 3D rendered images"** Rafael Berral-Soler, Francisco J. Madrid-Cuevas, Sebastián Ventura, Rafael Munoz-Salinas and Manuel J. Marın-Jimenez
11:45 - 12:00	**"Safe Robot Navigation in Indoor Healthcare Workspaces"** Eleftherios G. Vourkos, Evropi Toulkeridou, Antreas Kourris, Raquel Julia Ros, Eftychios G. Christoforou, Nacim Ramdani and Andreas S. Panayides
12:00 - 12:15	**"EMBiL: An English-Manipuri Bi-lingual benchmark for scene text detection and language identification"** Veronica Naosekpam, Mushtaq Islam, Amul Chourasia and Nilkanta Sahu
12:15 - 12:30	**"Low-dimensionality information extraction model for semi-structured documents"** Djedjiga Belhadj, Abdel Belaid and Yolande Belaid

12:30 - 14:00: **Lunch Break**

14:00 - 15:30	**Machine learning for image and pattern analysis I**
	Chair: *Nicolas Tsapatsoulis*, Cyprus University of Technology
14:00 - 14:15	**"Downsampling GAN for Small Object Data Augmentation"** Daniel Cores, Victor M. Brea, Manuel Mucientes, Lorenzo Seidenari and Alberto Del Bimbo
14:15 - 14:30	**"Model regularisation for skin lesion symmetry classification: SymDerm v2.0"** Lidia Talavera-Martinez, Pedro Bibiloni, Aniza Giacaman, Rosa Taberner, Luis Javier Del Pozo Hernando and Manuel Gonzalez-Hidalgo
14:30 - 14:45	**"Robust Adversarial Defense: Use of Auto-Inpainting"** Shivam Sharma, Rohan Joshi, Shruti Bhilare and Manjunath V. Joshi
14:45 - 15:00	**"Generalized Median Computation for Consensus Learning: A Brief Survey"** Xiaoyi Jiang and Andreas Nienkotter
15:00 - 15:15	**"Efficient Representation Learning for Inner Speech Domain Generalization"** Han Wei Ng and Cuntai Guan
15:15 - 15:30	**"Using Diffusion Models for Dataset Generation: Prompt Engineering vs. Fine-tuning"** Roy Voetman, Alexander van Meekeren, Maya Aghaei and Klaas Dijkstra

15:30 - 16:00: **Coffee Break**

16:00 - 18:00	**Machine learning for image and pattern analysis II**
	Chair: Marios Pattichis, University of New Mexico
16:00 - 16:15	**"Towards Robust Colour Texture Classification with Limited Training Data"** Mariya Shumska and Kerstin Bunte
16:15 - 16:30	**"Explaining StyleGAN Synthesized Swimmer Images in Low-Dimensional Space"** Ashkan Mansouri Yarahmadi, Michael Breuß and Mohsen Khan Mohammadi
16:30 - 16:45	**"Interpolation Kernel Machines: Reducing Multiclass to Binary"** Jiaqi Zhang, Cheng-Lin Liu and Xiaoyi Jiang
16:45 - 17:00	**"Performance Assessment of Fine-tuned Barrier Recognition Models in Varying Conditions"** Marios Thoma, Harris Partaourides, Ieswaria Sreedharan, Zenonas Theodosiou, Loizos Michael and Andreas Lanitis
17:00 - 17:15	**"Keyrtual: A Lightweight Virtual Musical Keyboard based on RGB-D and Sensors Fusion"**

	Danilo Avola, Luigi Cinque, Marco Raoul Marini, Andrea Princic and Valerio Venanzi
17:15 - 17:30	**"Performance characterization of 2D CNN features for partial video copy detection"** Van-Hao LE, Mathieu Delalandre and Hubert Cardot
17:30 - 17:45	**"Semi-Automated Patch-based Segmentation of Different Size Groups of Brain Metastases in MRI Images"** Vangelis Tzardis, Christos P. Loizou and Efthyvoulos Kyriacou
17:45 - 18:00	**"Texture analysis contribution to evaluating the common carotid artery's stroke risk using structural equation modeling"** George Evripides, Paul Christodoulides and Christos P. Loizou

20:00 - 22:00: Gala Dineer

Wednesday 27 September 2023

Room: Mermaid

09:00 - 10:30	**Keynote Lecture #2:**	**Semiconductor Chips in the Center of Geopolitical Competition**
	Chrysostomos L. Nikias, Ph.D *President Emeritus and Professor of Electrical Engineering* *Malcolm R. Currie Chair in Technology and the Humanities* *Director, The Institute for Technology Enabled Higher-Education* *University of Southern California*	
	Chair: *Nicolas Tsapatsoulis*, Cyprus University of Technology	

10:30 - 11:00: **Coffee Break**

11:00 - 12:30	**Object Recognition and Segmentation**
	Chair: *Christos Loizou*, Cyprus University of Technology
11:00 - 11:15	**"Domain-Adaptive Data Synthesis for Large-Scale Supermarket Product Recognition"** Julian Strohmayer and Martin Kampel
11:15 - 11:30	**"PSM-PS: Part-based Signal Modulation for Person Search"** Reem Abdalla Sharif, Mustansar Fiaz and Rao Muhammad Anwer
11:30 - 11:45	**"Fast Video Instance Segmentation via Recurrent Encoder-based Transformers"** Omkar Thawakar, Alexandre Rivkind, Ehud Ahissar and Fahad Shahbaz Khan
11:45 - 12:00	**"Fast Context Adaptation for Video Object Segmentation"** Isidore Dubuisson, Damien Muselet, Christophe Ducottet and Jochen Lang
12:00 - 12:15	**"ALPR - A Method for Identifying License Plates using Sequential Information"** Akshay Bakshi and Sandeep S. Udmale
12:15 - 12:30	**"Non-separable Moments in 3D"** Jan Flusser, Tomás Suk, Leonid Bedratyuk and Tomás Karella

12:30 - 14:00: **Lunch Break**

14:00 - 15:30	**Biometrics - Human pose estimation - Action recognition**
	Chair: *Andreas Lanitis*, Cyprus University of Technology
14:00 - 14:15	**"A Systematic Approach for Automated Lecture Style Evaluation Using Biometric Features"** Eleni A. Dimitriadou and Andreas Lanitis
14:15 - 14:30	**"Highly crowd detection and counting based on curriculum learning"** Lidia Fotia, Gennaro Percannella, Alessia Saggese and Mario Vento
14:30 - 14:45	**"Race Bias Analysis of Bona Fide Errors in Face Anti-spoofing"** Latifah Abduh and Ioannis Ivrissimtzis
14:45 - 15:00	**"Fall detection with event-based data: A case study"** Xueyi Wang, Nicoletta Risi, Estefania Talavera, Elisabetta Chicca, Dimka Karastoyanova and George Azzzopardi
15:00 - 15:15	**"Towards Accurate and Efficient Sleep Period Detection using Wearable Devices"** Fatemeh Jokar, George Azzopardi and Joao Palotti
15:15 - 15:30	**"RLSTM: A Novel Residual and Recurrent Network for Pedestrian Action Classification"** Soulayma Gazzeh, Liliana Lo Presti, Ali Douik and Marco La Cascia

15:30 - 16:00: **Coffee Break**

16:00 - 18:00	**Biomedical Image and Pattern Analysis**
	Chair: Efthyvoulos Kyriacou, Cyprus University of Technology
16:00 - 16:15	**"Temporal Sequences of EEG Covariance Matrices for Automated Sleep Stage Scoring with Attention Mechanisms"** Mathieu Seraphim, Paul Dequidt, Alexis Lechervy, Florian Yger, Luc Brun and Olivier Etard
16:15 - 16:30	**"A Complete AI-based System for Dietary Assessment and Personalized Insulin Adjustment in Type 1 Diabetes Self-Management"** Maria Panagiotou, Ioannis Papathanail, Lubnaa Abdur Rahman, Lorenzo Brigato, Natalie S. Bez, Maria F. Vasiloglou, Thomai Stathopoulou, Bastiaan E. de Galan, Ulrik Pedersen-Bjergaard, Klazine van der Horst and Stavroula Mougiakakou
16:30 - 16:45	**"COFI - Coarse-semantic to fine-instance unsupervised mitochondria segmentation in EM"** Anusha Aswath, Ahmad Alsahaf, B. Daan Westenbrink, Ben N. G. Giepmans and George Azzopardi

16:45 - 17:00	**"Empirical study of attention-based models for automatic classification of gastrointestinal endoscopy images"** Ricardo Espantaleón-Pérez, Isabel Jiménez-Velasco, Rafael Muñoz-Salinas and Manuel J. Marín-Jiménez
17:00 - 17:15	**"Classification of Breast Micro-Calcifications as Benign or Malignant using Subtraction of Temporally Sequential Digital Mammograms and Machine Learning"** Kosmia Loizidou, Galateia Skouroumouni, Gabriella Savvidou, Anastasia Constantinidou, Christos Nikolaou and Costas Pitris
17:15 - 17:30	**"Fourier Descriptor Loss and Polar Coordinate Transformation for Pericardium Segmentation"** Lu Liu, Christoph Brune and Raymond Veldhuis
17:30 - 17:45	**"Stroke Risk Stratification Using Transfer Learning on Carotid Ultrasound Images"** Georgia D. Liapi, Christos Markides, Christos P. Loizou, Maura Griffin, Andrew Nicolaides and Efthyvoulos Kyriacou
17:45 - 18:00	**"A Comparative Study of Explainable AI models in the assessment of Multiple Sclerosis"** Andria Nicolaou, Nicoletta Prentzas, Christos P. Loizou, Marios Pantzaris, Antonis Kakas and Constantinos S. Pattichis

Thursday 28 September 2023

Room: Mermaid

09:00 - 10:30	**General Vision - AI Applications I**
	Chair: *Andreas Panayides*, CYENS Center of Excellence
09:00 - 09:15	**"Biometric Recognition of African Clawed Frogs"** Fabian L. Prins, Dario Tomanin, Julia Kamenz and George Azzopardi
09:15 - 09:30	**"Teacher-Student synergetic knowledge distillation for detecting alcohol consumption in NIR iris Images"** Sanskar Singh, Ravil Patel, Vandit Tyagi and Avantika Singh
09:30 - 09:45	**"Knowledge Guided Deep Learning for General-Purpose Computer Vision Applications"** Youcef Djenouri, Ahmed Nabil Belbachir, Rutvij H. Jhaveri and Djamel Djenouri
09:45 - 10:00	**"Teaching Computer Programming with Mathematics for Generating Digital Videos and Machine Learning Optimization"** Marios S. Pattichis, Hakeoung Hannah Lee, Sylvia Celedon-Pattichis, Carlos Lopez-Leiva
10:00 - 10:15	**"Classification of Honey Pollens with ImageNet Neural Networks"** Fernando López-García, José Miguel Valiente-González, Isabel Escriche-Roberto, Marisol Juan-Borrás, Mario Visquert-Fas, Vicente Atienza-Vanacloig and Manuel Agustí-Melchor
10:15 - 10:30	**"Defocus Blur Synthesis and Deblurring via Interpolation and Extrapolation in Latent Space"** Ioana Mazilu, Shunxin Wang, Sven Dummer, Raymond Veldhuis, Christoph Brune and Nicola Strisciuglio

10:30 - 11:00: **Coffee Break**

11:00 - 12:30	**General Vision - AI Applications II**
	Chair: *Zenonas Theodosiou*, Cyprus University of Technology
11:00 - 11:15	**"Unsupervised Representation Learning in Partially Observable Atari Games"** Li Meng, Morten Goodwin, Anis Yazidi and Paal Engelstad
11:15 - 11:30	**"Structural Analysis of the Additive Noise Impact on the α-tree"** Baptiste Esteban, Guillaume Tochon, Edwin Carlinet and Didier Verna
11:30 - 11:45	**"Augmented Reality for indoor localization and navigation: the case of UNIPI AR Experience"** Dionysios Koulouris, Andreas Menychtas and Ilias Maglogiannis

11:45 - 12:00	**"A Benchmark and Investigation of Deep-Learning-Based Techniques for Detecting Natural Disasters in Aerial Images"** Demetris Shianios, Christos Kyrkou and Panayiotis S. Kolios
12:00 - 12:15	**"Perceptual Light Field Image Coding with CTU Level Bit Allocation"** Panqi Jin, Gangyi Jiang, Yeyao Chen, Zhidi Jiang and Mei Yu
12:15 - 12:30	**"A Comparative Performance Assessment of Different Video Codecs"** Ioanna Valiandi, Andreas S. Panayides, Efthyvoulos Kyriacou, Constantinos. S. Pattichis, Marios S. Pattichis

12:30 - 12:45: **Closing**