

IPTA 2023, Conference Program

Moday 16/10/2023

Salle Bastille

08:30 Welcome Desk / Registration

08:50 Opening Conference Chairs

09:00 Tutorial 1 Explainable AI in the problems of Image Classification

Prof. Jenny Benois-Pineau

University of Bordeaux

Chairs: Mourad OUSSALAH, Khalifa DJEMAL

10:30 Coffee break

10:45 Tutorial 2 Retinal images : From biometrie to early diagnosis of ocular pathologies

Prof. Rostom Kachouri

ESIEE Paris

Chairs: Rachid JENNANE, Jean-Yves DIDIER

12:30 Lunch

14:00 Oral Session 1 **Pattern recognition and computer vision: I**

Chairs: Rachid JENNANE, Sheli Sinha CHAUDHURI

Virtual P61 Exploration of Deep Methods for Cross-Domain Aerial Image Matching

Md Shahid, Prajwal VK, Inzamam-ul Haq, Md. Faisal

India

P14 A 3D Deep Learning Approach for Meniscus Tear Severity at the Region-level

Mohamed BERRIMI, Rachid JENNANE, Mourad OUSSALAH

France / Finland

P15 RWU3D: Real World ToF and Stereo Dataset with High Quality Ground Truth

Ankita AGRAWAL, Tobias SCHMAHLING, Tobias MULLER

Germany

P42 Foliage-Pattern-Identifier: A Hybridized Grey Wolf & Adam optimized Deep Learning architecture designed for identification

of similarly patterned leaves

*Sriparna BANERJEE, SK Daud HASSAN, Suranjana MUKHERJEE, Sheli Sinha CHAUDHURI, Khalifa DJEMAL, Amir Ali FEIZ
India / France*

P47

VK-SITS: a Robust Time-Surface for Fast Event-Based Recognition

*Laure ACIN, Pierre JACOB, Camille SIMON-CHANE, Aymeric HISTACE
France*

16:00 Coffee break

16:15 Oral Session 2 Medical image identification

Chairs: Mourad OUSSALAH, Rostom KACHOURI

P55

Early glaucoma screening Decision Tree using in-depth clinical analysis of the optic nerve head

*Rostom Kachouri, Mohamed Akil, Amed Mvoulana
France*

P39

Skin Cancer Classification using Levy Stable Based Ensemble and It's Real-Time Implementation on OpenVINO Toolkit

*Moumita Hait, Rajani Das, Asfak Ali, Sheli Sinha Chaudhuri, Khalifa Djemal
India / France*

17:15 Oral Session 3 Image and video processing, coding and compression: I

Chairs: Dionysis GOULARAS, Jean-Yves DIDIER

P5

Automatic Retail Dataset Creation with Multiple Sources of Information Synchronization

*Ricardo PALACIOS, Bryan PIGUAVE, Jefferson HERNANDEZ, Andres ABAD
Equator*

P41

Fuzzy Logic based adaptive weighted despeckling method designed considering inter-pixel scattering similarities

*Debanka PAL, Sriparna BANERJEE, SK Daud HASSAN, Sheli Sinha CHAUDHURI, Khalifa DJEMAL
India / France*

P25

Blind Image Separation Using Composite Criteria based on Statistical Information and Sparse Representation

*Fouad BOUDJENOUIA, Karim ABED-MERAIM, Rachid JENNANE, Aladine CHETOUANI
Algeria / France*

18:15 End of the first day

Tuesday 17/10/2023

Salle Trichaud 2

08:20 Welcome Desk / Registration

08:30 Oral Session 4 **Pattern recognition and computer vision: II**

Chairs: Sheli Sinha CHAUDHURI, Jenny BENOIS-PINEAU

P17 Context-Aware Facial Expression Recognition in Group Photos

Duygu CAKIR, Nafiz ARICA

Turkey

P22 An Order and Difference Local Binary Pattern for Hyperspectral Texture Classification

Adam EL BERGUI, Alice POREBSKI, Nicolas VANDENBROUCKE

France

P24 Visualization for Multivariate Gaussian Anomaly Detection in Images

Joao Paulo CASAGRANDE BERTOLDO, David ARRUSTICO

France

Virtual P34 EOD-Net: Enhancing Object Detection in Challenging Weather Conditions Using an Innovative End-to-End Dehazing Network.

Sargis HOVHANNISYAN, Hayk GASPARYAN, Sos AGAIAN

USA

P35 Leveraging Transfer Learning for Analysing Cattle Front Teat Placement

Hina AFRIDI, Mohib ULLAH, Anne Guro LARSGARD, Faouzi ALAYA-CHEKH

Norway

P53 Interactive and light approach for near duplicate retrieval in multiple contexts

Samuel LOZACHMEUR, Thierry URRUTY, Philippe CARRE

France

10:30 Coffee break

10:45 Invited Speaker 1 Development of Land Cover Monitoring System using Simultaneous Multi-pixel Classification Strategy based Deep Neural Architecture

Prof. Sheli Sinha CHAUDHURI

Jadavpur University, Kolkata, India

Chairs: Sos Agaian AGAIAN, Jérôme LAPUYADE-LHORGUE

11:45	Oral Session 5	Image forensics and security Chairs: Dionysis GOULARAS, Jean-Yves DIDIER
Virtual	P7	Enhanced DFT-Based Chaotic Image Block Cipher with Several Modes of Operation <i>Mahmoud YASSIN, Ali NASIR, Mostafa TAHA, Naveed IQBAL</i> <i>Saudi Arabia / Canada</i>
	P30	Deep Ensemble Learning with Frame Skipping for Face Anti-Spoofing <i>Usman MUHAMMAD, Md Ziaul HOQUE, Mourad OUSSALAH, Jorma LAAKSONEN</i> <i>Finland</i>
12:30	Lunch	
14:00	Special Session	Signal, Image processing and Machine Learning for Neuroscience Chairs: Mouloud ADEL, Régine LE BOUQUIN JEANNÈS, Salah BOURENNANE
	P9	Retrospective motion estimation for fetal brain MRI <i>Chloé MERCIER, Sylvain FAISAN, Alexandre PRN, Nadine GIRARD, Guillaume AUZIAS, Thierry CHONAVEL, Francois ROUSSEAU</i> <i>France</i>
	P21	Features Extraction on Independent Component Analysis Computed on Interictal Magnetoencephalography to Characterize Epileptic Source <i>Aurore SEMEUX-BERNIER, Francesca BONINI, Maria FRATELLO, Elodie GARNIER, Samuel MEDINA VILLALON, Jean-Michel BADIER, Frédéric RICHARD, Christian-G</i> <i>France</i>
	P31	Post-processing of light sheet fluorescence microscope images using auto-encoders and Richardson-Lucy deconvolution <i>Adrien JULIA, Rabah IGUERNAISSI, François MICHEL, Valery MATARAZZO, Djamel MERAD</i> <i>France</i>
	P60	Dynamic Time Warping-based distance for constructing individual brain networks from FDG-PET Images: Application to Alzheimer's Disease <i>MinhTuan PHAM, Mouloud ADEL, Nguyen LINH TRUNG, Eric GUEDJ</i> <i>France</i>
15:15	Coffee break	

15:30

Oral Session 6 **Machine Learning methods for image and video analysis: I**

Chairs: Pong C Yuen, Mouloud ADEL

P6

Invariant Convolutional Networks

Matěj LEBL, Jan FLUSSER

Czech Republic

P11

CNN Ensemble Robust to Rotation Using Radon Transform

Václav KOSIK, Jan FLUSSER, Tomáš KARELLA

Czech Republic

P13

Heuristic hyperparameter choice for image anomaly detection

Zeyu JIANG, Joao Paulo CASAGRANDE BERTOLDO, Etienne DENCECIERE

France

P28

U-Net with Attention Module: Gland Segmentation in H&E Histopathological Images

Zeynep YILDIRIM, Refik SAMET, Emrah HANCER, Nooshin NEMATI, Mohamed Traore MALI

Turkey

P29

OSA-NET : An Efficient Convolutional Neural Network for OSA Diagnosis Screening Tool

June-Young PARK, Tae-Joon KIM, Hye-Rim SHIN

Korea

17:00

Oral Session 7 **Machine Learning methods for image and video analysis: II**

Chairs: Jérôme LAPUYADE-LAHORGUE, Dionysis GOULARAS

P36

Self-supervised Animal Detection in Indoor Environment

Taifour YOUSRA, Adane TAREKGN, Mohib ULLAH, Azeddine BEGHADADI, Faouzi ALAYA-CHEKH

France / Norway

P40

Prediction of Head-Neck Cancer Recurrence from PET/CT Images with Havrda-Charvat Entropy

Thibaud BROCHET, Jérôme LAPUYADE-LAHORGUE, Li HUA, Pierre VERA, Pierre DECAZES, Su RUAN

France

P48

Transformers-Based Neural Network for Cardiac Infarction Segmentation in Delayed-Enhancement MRI

Erwan LECESNE, Antoine SIMON, Mireille GARREAU

France

18:00 Concert Music meets Science Group Restaurant Salle-Blanche

Artists: François Pineau-Benois, **violon** and Mark Drobinsky, **violoncelle**

Program:

W.-A. Mozart : Duo sol Majeur K-423	G.-F. Haendel-J. Halvorsen : Passacaglia		
Allegro-Adagio-Rondo	C. Saint-Saëns : Introduction et Rondo Capriccioso, op. 28		
C. Saint-Saëns : Danse Macabre, op. 40	L.-C. Daquin : Coucou		
J.-B. Rameau : La Poule	N. Paganini : Carnival de Venise		

18:45 Cocktail all participants Restaurant Salle-Blanche

Wednesday 18/10/2023 Salle Terrasse de Bel Air

08:20 Welcome Desk / Registration

08:30 Oral Session 8 Machine Learning methods for image and video analysis: III

Chairs: Jenny BENOIS-PINEAU, Rachid JENNANE

P43 MangNet: A Multi-Scale Contextual Information Driven Deep Learning Architecture designed to perform Sunderban Landcover classification

SK Daud Hassan, Sriparna Banerjee, Debanka Pal, Sheli Sinha Chaudhuri, Khalifa Djemal, Amir Ali Feiz
India, France

P50 Leveraging Explainability methods in Spectral Domain for Data Augmentation and efficient training of CNN classifiers for Covid-19 Detection
Meaza Eyakem GEBREAMLAK, Meghna P AYYAR, Jean-Pierre SALMON, Jenny BENOIS-PINEAU, Akka ZEMMARI
France

P58 Prediction of Air Pollutant Concentrations in Airport Areas using Machine Learning Architecture
Huaijin WANG, Khalifa DJEMAL, Amir Ali FEIZ, Sheli Sinha CHAUDHURI
France / India

P49 Effects of Region of Interest Location on Osteoarthritis Detection Using Deep Learning
Bouyahmed TINHINANE, Yassine NASSER, Ahmad ALMHDIE, Soraya ALOUI, Rachid JENNANE
France

10:00 Coffee break

10:15 **Invited Speaker 2** Annotation-Efficient Deep Learning for Medical Image Segmentation
Prof. Pong C Yuen
Hong Kong Baptist University
Chairs: Mouloud ADEL, Sheli Sinha CHAUDHURI

11:15 **Oral Session 9** **Applications: I**
Chairs: Djemel ZIOU, Jean-Yves DIDIER

Virtual

P26 **Tobacco Leaf Disease Segmentation based on TDSSNet**
JinLiang OU, Hong LIN, Zhenping QIANG, ZhuQun CHEN, YanZe ZOU
China

P23 **Skin Lesion Classification Based on Segmented Image**
Aleksandra DZIENISZEWSKA, Piotr GARBAT, Ryszard PIRAMIDOWICZ
Poland

P19 **A deep-learning based algorithm for image reconstruction in Compton tomography**
Ishak AYAD, Javier CEBEIRO, Cecilia TARPAU, Mai K. NGUYEN
France / UK / Argentina

P37 **Identifying color space for improved image display**
Djemel ZIOU
Canada

12:30 **Lunch**

14:00 - 18:00 **Free tour of Paris**

Dinner on boat (Paris en seine) on the Seine River around 2 hours 7pm - 9pm.

WARNING: You should be before 18h45 at the following address: **Paris en Seine Pont de Bir-Hakeim l'île aux cygnes 75015 Paris**

19:00 **Gala Dinner**

Thursday 19/10/2023

08:20 Welcome Desk / Registration

08:30 Oral Session 10 **Image and video processing, coding and compression: II**

Chairs: Ehsan SEDGH GOOYA, Amir FEIZ

P8 **Privacy Preserving Encoder Classifier for Access Control Based on Face Recognition**

Raghida EL SAJ, Chi-Hieu PHAM, Ehsen SEDGH GOOYA, Ayman AL FALOU, Mohamad KHALIL
France / Libanon

P27 **Road Condition Detection and Crowdsourced Data Collection for Accident Prevention: A Deep Learning Approach**

Md Saroar JAHAN, Mominul ISLAM, Md Sanjid HOSSAIN, Mourad OUSSALAH, Jhuma Kabir MIM
Finland

P32 **Frequency Analysis on Neuromorphic Data Using Discrete Fourier Transform**

Jens GUNDMARK, Hanna HAMRELL, Johan BERNELAND, David GUSTAFSSON
Sweden

Virtual P59 **VMD Based Powerline Interference Cancellation in ECG Signals**

Haroon YOUSUF Mir, Omkar SINGH
India

10:00 Coffee break

10:15 Invited Speaker 3 **Quaternion Neural Networks: A Novel Framework for Robust Scene Perception in Self-Driving Cars**

Prof. Sos Aгаian
College of Staten Island, and Graduate Center, USA
Chairs: William PUECH, Jenny BENOIS-PINEAU

11:15 Oral Session 11 **Applications: II**

Chairs: Jenny BENOIS-PINEAU, Dionysis GOULARAS

P2 **Animated lightning bolt generation using machine learning**

Henrik Johansson, Prashant Goswami, Abbas Cheddad (Sweden)

Virtual P51 **Pest Detection and Identification Guided by Feature Maps**

Miao Chen, Yanan Chen, Minghui Guo, Jianji Wang (China)

P56 **A Robustness Study of Machine Learning Based Methods for Macula Detection in Pathological Fundus Images**

Yaroub ELLOUMI, Rostom KACHOURI (Tunisia / France)

12:30 Lunch and Closing