

IBPRIA 2023 – TECHNICAL PROGRAM

Tuesday (June 27) - Tutorials

- 08:30-09:00 Registration
- 09:00-10:30 **Doctoral consortium**
(chair: Francisco J. Castellanos, University of Alicante, Spain)
- 10:30-11:00 Coffee Break
- 11:00-13:00 **Tutorial 1: Mikel Artetxe**
A brief history of unsupervised machine translation: from a crazy idea to the future of MT?
(chair: Juan Antonio Pérez, University of Alicante, Spain)
- 13:00-14:30 Lunch (Poniente restaurant)
- 14:30-16:30 **Tutorial 2: Sergio Orts**
Machine Learning for Computational Photography
(chair: Marcelo Saval-Calvo, University of Alicante, Spain)
- 16:30-17:00 Coffee Break
- 17:00-19:00 **Tutorial 3: Karteek Alahari**
Continual Visual Learning: Where are we?
(chair: Jose Javier Valero, Universitat Pompeu Fabra, Spain)
- 19:30-22:30 Reception (Santa Bárbara Castle)

Wednesday (June 28)

08:30-08:50 Registration

08:50-09:00 Opening Session

(chair: Antonio Pertusa, University of Alicante, Spain)

09:00-10:30 **Oral Session 1: Machine learning**

(chair: Rubén Tolosana, Autonomous University of Madrid, Spain)

CCLM: Class-conditional Label Noise Modelling

Albert Catalan Tatjer, Bhalaji Nagarajan, Ricardo Jorge Rodrigues Sepúlveda Marques and Petia Radeva

Addressing class imbalance in Multilabel Prototype Generation for k-Nearest Neighbor classification

Carlos Penarrubia, Jose J. Valero-Mas, Antonio Javier Gallego and Jorge Calvo-Zaragoza

Time series imputation in faulty systems

Ana Almeida, Susana Brás, Susana Sargento and Filipe Cabral Pinto

DARTS with degeneracy correction

Guillaume Lacharme, Hubert Cardot, Christophe Lente and Nicolas Monmarche

10:30-11:00 Coffee Break

11:00-12:00 **Oral Session 2: Document Analysis**

(chair: Joan Andreu Sánchez, Technical University of Valencia, Spain)

Segmentation of Large Historical Manuscript Bundles into Multi-page Deeds

José Ramón Prieto Fontcuberta, David Becerra, Alejandro Hector Toselli, Carlos Alonso and Enrique Vidal

A Study of Augmentation Methods for Handwritten Stenography Recognition

Raphaela Heil and Eva Breznik

Lifelong Learning for Document Image Binarization: A Experimental Study

Pedro González-Barrachina, María Alfaro-Contreras, Mario Nieto-Hidalgo and Jorge Calvo-Zaragoza

12:00-13:00 **Keynote: Timothy Hospedales**

Distribution Shift: The Key Bottleneck for Pattern Recognition in Practice?

(chair: Petia Radeva, University of Barcelona, Spain)

13:00-14:30 Lunch (Hospes Amérigo)

14:30-16:00 **Poster Session 1** (with coffee)

(chair: Antonio Javier Gallego, University of Alicante, Spain)

A fuzzy logic inference system for display characterization

Khleef Almutairi, Samuel Morillas, Pedro Latorre-Carmona and Makan Dansoko

Learning Semantic-Visual Embeddings with a Priority Queue
Rodrigo Valério and Joao Magalhaes

Optimizing Object Detection Models via Active Learning
Dinis Costa, Catarina Silva, Joana Costa and Bernardete Ribeiro

Test-Time Augmentation for Document Image Binarization
Adrian Rosello, Francisco J. Castellanos, Juan P. Martinez-Estes, Antonio Javier Gallego and Jorge Calvo-Zaragoza

Optimal Wavelength Selection for Deep Learning from Hyperspectral Images
Sam Dehaeck, Remi Van Belleghem, Niels Wouters, Bart De Ketelaere and Wenzhi Liao

Can representation learning for multimodal image registration be improved by supervision of intermediate layers?
Elisabeth Wetzer, Joakim Lindblad and Nataša Sladoje

Interpretability-Guided Human Feedback During Neural Network Training
Pedro Serrano E Silva, Ricardo Cruz, Tiago Gonçalves and Asm Shihavuddin

Py4MER: a CTC-based Mathematical Expression Recognition System
Dan Anitei, Joan Andreu Sánchez and José Miguel Benedí

An ensemble-based phenotype classifier to diagnose Crohn's disease from 16s rRNA gene sequences
Lara Vázquez-González, Carlos Peña-Reyes, Carlos Balsa-Castro, Inmaculada Tomás and María J. Carreira

Detecting Loose Wheel Bolts of a Vehicle using Accelerometers in the Chassis
Jonas Schmidt, Kai-Uwe Kühnberger, Dennis Pape and Tobias Pobandt

16:00-17:30 **Oral Session 3: Computer Vision**
(chair: *Jorge Calvo, University of Alicante, Spain*)

DeepArUco: Marker detection and classification in challenging lightning conditions
Rafael Berral-Soler, Rafael Muñoz-Salinas, Rafael Medina-Carnicer and Manuel Jesús Marín-Jiménez

Automated Detection and Identification of Olive Fruit Fly using YOLOv7 Algorithm
Margarida Victoriano, Lino Oliveira and Hélder P. Oliveira

Learning to search for and detect objects in foveal images using deep learning
Beatriz Paula and Plinio Moreno

Relation networks for few-shot video object detection
Daniel Cores Costa, Lorenzo Seidenari, Alberto Del Bimbo, Victor Brea and Manuel Mucientes

17:30-18:30 AERFAI Assembly

19:00-20:30 Social Program (MARQ museum)

Thursday (June 29)

08:30-09:00 Registration

09:00-10:30 **Oral Session 4: 3D Computer Vision**

(chair: *Marcelo Saval-Calvo, University of Alicante, Spain*)

Guided depth completion using active infrared images in Time of Flight system
Amina Achaibou, Nofre Sanmartín-Vich, Filiberto Pla and Javier Calpe

StOCaMo: Online Calibration Monitoring for Stereo Cameras
Jaroslav Moravec and Radim Šára

Smart-Tree: Neural Medial Axis Approximation of Point Clouds for 3D Tree Skeletonization
Harry Dobbs, Oliver Batchelor, Richard Green and James Atlas

A Measure of Tortuosity for 3D Curves: Identifying 3D beating patterns of sperm flagella
Andrés Bribiesca Sánchez, Adolfo Guzmán, Alberto Darszon, Gabriel Corkidi and Ernesto Bribiesca

10:30-11:00 Coffee Break

11:00-12:00 **Oral Session 5: Computer Vision Applications**

(chair: *Filiberto Pla, University Jaume I, Spain*)

Multimodal Human Pose feature fusion for Gait recognition
Nicolás Cubero, Francisco Manuel Castro, Julián Ramos, Nicolás Guil and Manuel J. Marin-Jimenez

Proxemics-Net: automatic proxemics recognition in images
Isabel Jimenez-Velasco, Rafael Muñoz-Salinas and Manuel J. Marin-Jimenez

Lightweight Vision Transformers for Face Verification in the Wild
Daniel Parres Montoya and Roberto Paredes Palacios

12:00-13:00 **Keynote: Nuria Oliver**

Data Science against COVID-19

(chair: *Antonio Pertusa, University of Alicante, Spain*)

13:00-14:30 Lunch (Poniente restaurant)

14:30-16:00 **Poster Session 2 (with coffee)**

(chair: *María Alfaro Contreras, University of Alicante, Spain*)

Continual vocabularies to tackle the catastrophic forgetting problem in Machine Translation
Salvador Carrión and Francisco Casacuberta Nollá

A Weakly-Supervised Approach for Layout Analysis in Music Score Images
Eric Ayllon, Francisco J. Castellanos and Jorge Calvo-Zaragoza

ResPho(SC)Net: A Zero-Shot Learning Framework for Norwegian Handwritten Word Image Recognition
Aniket Gurav, Joakim Jensen, Narayanan Krishnan and Sukalpa Chanda

Hierarchical Line Extremity Segmentation U-Net for the SoccerNet 2022 Calibration Challenge - Pitch Localization

Miguel Santos Marques, Ricardo Gomes Faria and José Henrique Brito

Object Localization with Multiplanar Fiducial Markers: Accurate Pose Estimation

Pablo Garcia-Ruiz, Rafael Muñoz-Salinas, Rafael Medina-Carnicer and Manuel J. Marin-Jimenez

Real-time unsupervised object localization on the edge for airport video surveillance

Paula Ruiz-Barroso, Francisco M. Castro and Nicolás Guil

Synthetic spermatozoa video sequences generation using Adversarial Imitation Learning

Sergio Hernández-García, Alfredo Cuesta-Infante and Antonio S. Montemayor

A Deep Approach for Volumetric Tractography Segmentation

Pablo Rocamora-García, Marcelo Saval-Calvo, Víctor Villena-Martinez and Antonio Javier Gallego

MicrogliaJ: an Automatic Tool for Microglial Cell Detection and Segmentation

Ángela Casado García, Jónathan Heras, Cesar Dominguez, Eloy Javier Mata, Vico Pascual, Estefanía Carlos, María Izco and Lydia Álvarez-Erviti

Clustering ECG time series for the quantification of physiological reactions to emotional stimuli

Beatriz Henriques, Susana Brás and Sónia Gouveia

16:00-17:30 **Oral Session 6: Medical Imaging**

(chair: Manuel Marín, University of Cordoba, Spain)

Inter vs. Intra Domain Study of COVID Chest X-Ray Classification with Imbalanced Datasets

Alejandro Galán-Cuenca, Miguel Mirón, Antonio Javier Gallego, Marcelo Saval-Calvo and Antonio Pertusa

Automatic Eye-Tracking-Assisted Chest Radiography Pathology Screening

Rui Santos, João Pedrosa, Ana Maria Mendonça and Aurélio Campilho

Deep Neural Networks to distinguish between Crohn's disease and Ulcerative colitis

José Maurício and Inês Domingues

Few-shot image classification for automatic COVID-19 diagnosis

Daniel Cores, Nicolás Vila-Blanco, Manuel Mucientes and María J. Carreira

20:30-23:00 **Conference Dinner (Dársena Restaurant)**

Includes awards ceremony and announcement of next IbPRIA

Friday (June 30)

08:30-09:00 Registration

09:00-10:30 **Oral Session 7: Machine Learning Applications**

(chair: Jose Javier Valero, Universitat Pompeu Fabra, Spain)

Enhancing Transferability of Adversarial Audio in Speaker Recognition Systems
Umang Patel, Shruti Bhilare and Avik Hati

Fishing Gear Classification from Vessel Trajectories and Velocity Profiles: Database and Benchmark
Pietro Melzi, Juan Manuel Rodriguez-Albala, Aythami Morales, Ruben Tolosana, Julian Fierrez and Ruben Vera-Rodriguez

Predicting the Subjective Responses' Emotion in Dialogues with Multi-Task Learning
Hassan Hayat, Carles Ventura and Agata Lapedriza

Study and automatic translation of Toki Pona
Pablo Baggetto, Damián López Rodríguez and Antonio M. Larriba

10:30-12:00 **Poster Session 3 (with coffee)**

(chair: Antonio Ríos, University of Alicante, Spain)

Evaluating Domain Generalization in Kitchen Utensils Classification
Carlos Garrido-Munoz, María Alfaro-Contreras and Jorge Calvo-Zaragoza

Calibration of Non-Central Conical Catadioptric Systems from Parallel Lines
James Bermúdez Vargas, Jesús Bermúdez Cameo and José Guerrero Campo

S²-LOR: Supervised Stream Learning for Object Recognition
César D. Parga, Gabriel Vilariño, Xosé M. Pardo and Carlos V. Regueiro

Evaluation of Regularization Techniques for Transformers-Based Models
Hugo Oliveira, Pedro Ribeiro and Helder Oliveira

The ETS2 Dataset, synthetic data from video games for monocular depth estimation
David María Arribas, Alfredo Cuesta Infante and Juan José Pantrigo Fernández

Identifying Thermokarst Lakes Using Discrete Wavelet Transform-Based Deep Learning Framework
Andrew Li, Jiahe Liu, Olivia Liu and Xiaodi Wang

Object Detection for Rescue Operations by High-altitude Infrared Thermal Imaging Collected by Unmanned Aerial Vehicles
Andrii Polukhin, Yuri Gordienko, Gert Jervan and Sergii Stirenko

Automated Orientation Detection of 3D Head Reconstructions from sMRI using Multiview Orthographic Projections: An Image Classification-Based Approach
Álvaro Heredia-Lidón, Alejandro González, Carlos Guerrero-Mosquera, Rubèn González-Colom, Luis Miguel Echeverry, Noemí Hostalet, Raymond Salvador, Edith Pomarol-Clotet, Juan Fortea, Neus Martínez-Abadías, Mar Fatjó-Vilas and Xavier Sevillano

Few-shot learning for prediction of electricity consumption patterns

Javier García-Sigüenza, José F. Vicent Frances, Faraón Llorens-Largo and José Vicente Berná Martínez

Multi-view Infant Cry Classification

Yadisbel Martínez-Cañete, Abel Díaz Berenguer and Hichem Sahli

- 12:00-13:00 **Keynote: Gustau Camps-Valls**
AI for Sustainable Earth Sciences
(chair: Jorge Calvo, University of Alicante, Spain)
- 13:00-13:10 Closing Ceremony
(chair: Antonio Pertusa, University of Alicante, Spain)
- 13:10-14:30 Lunch (Sede San Fernando)