

IbPRIA 2022 TECHNICAL PROGRAM

University of Aveiro, Portugal

May 3 (TUESDAY, Building 22)

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| 13:30-14:00 | Tutorial Registration |
| 14:00-16:15 | Tutorial 1 : Hermann Ney, RWTH Aachen University, Germany Speech recognition and machine translation: From Bayes decision theory to machine learning and deep neural networks (Chairs: Luís Alexandre, University of Beira Interior, Portugal and Antonio Pertusa, University of Alicante, Spain) |
| 16:15-16:45 | Coffee Break |
| 16:45-19:00 | Tutorial 2 : Gregory Rogez, Gregory Rogez, NAVER LABS Europe, Grenoble, France Human 3D sensing from monocular visual data using classification techniques (Chairs: Luís Alexandre, University of Beira Interior, Portugal and Antonio Pertusa, University of Alicante, Spain) |
| 19:00-21:00 | Welcome Reception (Building 21) |

May 4 (WEDNESDAY, Building 25)

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| 8:30-9:00 | IbPRIA 2022 Registration |
| 9:00-9:15 | Opening Session (Chair: Armando J. Pinho, University of Aveiro, Portugal) |
| 9:15-10:55 | Oral Session 1 : Pattern Recognition and Machine Learning (Chair: Paola Magillo, University of Genova, Italy) ID 59: Discriminative Learning of Two-Dimensional Probabilistic Context-Free Grammars for Mathematical Expression Recognition and Retrieval , <i>Ernesto Noya, José Miguel Benedí, Joan Andreu Sánchez, Dan Anitei</i> ID 7: MaxDropoutV2: An Improved Method to Drop out Neurons in Convolutional Neural Networks , <i>Cláudio Filipi Gonçalves dos Santos, Mateus Roder, Leandro Aparecido Passos Júnior, João Paulo Papa</i> ID 41: Feature-based classification of archaeal sequences using compression-based methods , <i>Jorge Miguel Silva, Diogo Pratas, Tânia Caetano, Sérgio Matos</i> ID 26: Transparent management of adjacencies in the cubic grid , <i>Paola Magillo, Lidija Comic</i> ID 40: Learning Sparse Masks for Diffusion-based Image Inpainting , <i>Tobias Alt, Pascal Peter, Joachim Weickert</i> |
| 10:55-11:20 | Coffee Break |
| 11:20-12:20 | Invited talk: Robert Fisher, University of Edinburgh, UK The vision subsystems in the TrimBot2020 gardening robot (Chair: Catarina Silva, University of Coimbra, Portugal) |
| 12:30-14:00 | Lunch (Building F) |
| 14:00-15:20 | Oral Session 2 : Document Analysis (Chair: Luís F. Teixeira, University of Porto, Portugal) ID 57: An Interactive Machine Translation Framework for Modernizing the Language of Historical Documents , <i>Miguel Domingo, Francisco Casacuberta</i> ID 44: Classification of Untranscribed Handwritten Notarial Documents by Textual Contents , <i>Juan Jose Flores, José Ramón Prieto Fontcuberta, David Garrido, Carlos Alonso, Enrique Vidal</i> ID 53: Incremental Vocabularies in Machine Translation through Aligned Embedding Projections , <i>Salvador Carrión, Francisco Casacuberta</i> ID 61: From Captions to Explanations: A Multimodal Transformer-based Architecture for Natural Language Explanation Generation , <i>Isabel Rio-Torto, Jaime S. Cardoso, Luís F. Teixeira</i> |

15:20-16:20

Poster Session 1

(Chair: Jorge Calvo-Zaragoza, University of Alicante, Spain)

ID 39: On the Topological Disparity Characterization of Square-pixel Binary Image Data by a Labeled Bipartite Graph, *Pablo Sánchez Cuevas, Pedro Real Jurado, Fernando Díaz del Río, Helena Molina Abril, María José Morón Fernández*

ID 30: Retrieval of Music-Notation Primitives via Image-to-Sequence, *Carlos Garrido-Munoz, Antonio Rios-Vila, Jorge Calvo-Zaragoza*

ID 46: Extracting Descriptive Words from Untranscribed Handwritten Images, *José Ramón Prieto Fontcuberta, Enrique Vidal, Joan Andreu Sánchez, Carlos Alonso, David Garrido*

ID 6: Proposal of a comparative framework for face super-resolution algorithms in forensics, *Antonio Salguero Cruz, Pedro Latorre Carmona, César García-Osorio*

ID 36: Digital image conspicuous features classification using TLCNN model with SVM classifier, *Swati Rastogi, Siddhartha P Duttagupta, Anirban Guha*

ID 2: Visual Semantic Context Encoding for Aerial Data Introspection and Domain Prediction, *Andreas Kriegler, Daniel Steininger, Wilfried Wöber*

ID 38: Contribution of low, mid and high-level image features in predicting human similarity judgements, *Anastasiia Mikhailova, José Santos-Victor, Moreno I. Coco*

ID 5: An End-to-End Approach for Seam Carving Detection using Deep Neural Networks, *Thierry P. Moreira, Marcos Cleison S. Santana, Leandro Aparecido Passos, João Paulo Papa, Kelton Augusto P. Costa*

ID 15: On the use of Transformers for end-to-end Optical Music Recognition, *Antonio Ríos-Vila, Jose M. Iñesta, Jorge Calvo-Zaragoza*

ID 50: A first approach to Image Transformation Sequence Retrieval, *Enrique Mas-Candela, Antonio Ríos-Vila, Jorge Calvo-Zaragoza*

ID 23: Test Sample Selection for Handwriting Recognition through Language Modeling, *Adrian Rosello, Eric Ayllon, Jose J. Valero-Mas, Jorge Calvo-Zaragoza*

ID 48: Characterization of emotions through facial Electromyogram signals, *Lara Pereira, Susana Brás, Raquel Sebastião*

ID 17: Facial Emotion Recognition for Sentiment Analysis of Social Media Data, *Diandre de Paula, Luís Alexandre*

ID 8: GMM-aided DNN Bearing Fault Diagnosis using Sparse Autoencoder Feature Extraction, *Andrei Maliuk, Zahoor Ahmad, Jong-Myon Kim*

16:20-16:50

Coffee Break

16:50-17:50

Oral Session 3 : Biometrics

(Chair: Raquel Justo, EHU/UPV, Spain)

ID 32: Heartbeat selection based on outlier removal, *Miguel Carvalho, Susana Brás*

ID 58: Feature selection for emotional well-being monitorization, *Irene Zubiaga, Raquel Justo*

ID 63: Temporal Convolutional Networks for Robust Face Liveness Detection, *Ruslan Padnevych, David Carmo, David Semedo, João Magalhães*

18:00-19:30

AERFAI Assembly

May 5 (THURSDAY, Building 25)

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| 8:30-9:00 | IbPRIA 2022 Registration |
| 9:15-10:55 | Oral Session 4 : Medical Applications (Chair: João Pedrosa, INESC TEC, Portugal) ID 31: On the performance of deep learning models for respiratory sound classification trained on unbalanced data , <i>Carlos Mauricio Castorena Lara, Francesc J. Ferri, Maximo Cobos</i> ID 43: Automated Adequacy Assessment of Cervical Cytology Samples using Deep Learning , <i>Vladyslav Mosiichuk, Paula Viana, Tiago Oliveira, Luís Rosado</i> ID 56: Differential Gene Expression Analysis of the Most Relevant Genes for Lung Cancer Prediction and Sub-type Classification , <i>Bernardo Ramos, Tania Pereira, Francisco Silva, José Costa, Hélder Oliveira</i> ID 4: Deep Detection Models for Measuring Epidermal Bladder Cells , <i>Ángela Casado García, Jónathan Heras, Usue Pérez-López, Jon Miranda-Apodaca, Aitor Agirresarobe</i> ID 49: Exploring Alterations in Electrocardiogram during the Postoperative Pain , <i>Daniela Pais, Susana Brás, Raquel Sebastião</i> |
| 10:55-11:20 | Coffee Break |
| 11:20-12:20 | Invited talk: Isabel Trancoso, IST, University of Lisbon, Portugal Speech as Personal Identifiable Information (Chair: Manuel Marín, Universidad de Córdoba, Spain) |
| 12:30-14:00 | Lunch (Building F) |
| 14:00-15:40 | Oral Session 5: Computer Vision (Chair: Joan Andreu Sánchez, Universitat Politècnica de València, Spain) ID 27: Domain Adaptation in Robotics: A Study Case on Kitchen Utensil Recognition , <i>Javier Sáez-Pérez, Antonio Javier Gallego, Jose Javier Valero-Mas, Jorge Calvo-Zaragoza</i> ID 42: LIDAR Signature based Node Detection and Classification in graph topological maps for indoor navigation , <i>Sergio Lafuente-Arroyo, Saturnino Maldonado-Bascón, Roberto Javier López-Sastre, Alberto Jesús Molina-Cantero, Pilar Martín-Martín</i> ID 28: The CleanSea Set: A Benchmark Corpus for Underwater Debris Detection and Recognition , <i>Alejandro Sánchez-Ferrer, Antonio Javier Gallego, Jose J. Valero-Mas, Jorge Calvo-Zaragoza</i> ID 13: Improving Action Quality Assessment using Weighted Aggregation , <i>Shafkat Farabi, Hasibul Himel, Fakhruddin Gazzali, Md. Bakhtiar Hasan, Md. Hasanul Kabir, Moshiur Farazi</i> ID 22: Film shot type classification based on camera movement styles , <i>Antonia Petrogianni, Panagiotis Koromilas and Theodoros Giannakopoulos</i> |

15:40-16:40

Poster Session 2

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

ID 66: Opt-SSL: An Enhanced Self-Supervised Framework for Food Recognition, *Nil Ballús, Bhalaji Nagarajan, Petia Radeva*

ID 52: A case of study on traffic cone detection for autonomous racing on a Jetson platform, *Javier Albaráñez Martínez, Laura Llopis-Ibor, Sergio Hernández-García, Susana Pineda de Luermo, Daniel Hernández-Ferrándiz*

ID 10: Identification of External Defects on Fruits Using Deep Learning, *Henrique Tavares Aguiar, Raimundo Vasconcelos*

ID 20: Improving Licence Plate Detection using Generative Adversarial Networks, *Alden Bobby, Dane Brown*

ID 69: Dynamic PCA based statistical monitoring of air pollutant concentrations in wildfire scenarios, *Tobias Osswald, Ana Patrícia Fernandes, Ana Isabel Miranda, Sónia Gouveia*

ID 55: Energy savings in residential buildings based on adaptive thermal comfort models, *Rodrigo Almeida, Petia Georgieva, Nelson Martins*

ID 68: Using bus tracking data to detect potential hazard driving zones, *Ana Almeida, Susana Brás, Susana Sargento, Ilídio Oliveira*

ID 62: Detection of epilepsy in EEGs using Deep Sequence models - A Comparative Study, *Miguel Marques, Catarina Lourenço, Luís Teixeira*

ID 34: Abbreviating Labelling Cost for Sentinel-2 Image Scene Classification through Active Learning, *Kashyap Raiyani, Teresa Goncalves, Luis Rato*

ID 71: An edge-based computer vision approach for determination of sulfonamides in water, *Inês Rocha, Fábio Azevedo, Pedro Carvalho, Patrícia Peixoto, Marcela Segundo, Hélder Oliveira*

ID 37: An Innovative Vision System for Floor-Cleaning Robots based on YOLOv5, *Daniel Canedo, Pedro Fonseca, Petia Georgieva, António Neves*

ID 45: Event Vision in Egocentric Human Action Recognition, *Francisco J. Moreno-Rodriguez, V. Javier Traver, Francisco Barranco, Mariella Dimiccoli, Filiberto Pla*

ID 21: Golf Swing Sequencing using Computer Vision, *Marc Marais, Dane Brown*

ID 25: Deep Learning for Diagnosis of Alzheimer's Disease with FDG-PET Neuroimaging, *José Bastos, Filipe Silva, Petia Georgieva*

16:10-16:40

Coffee Break

16:40-17:40

Panel Discussion: Ethics in AI

(Chair: Armando J. Pinho, University of Aveiro, Portugal)

António Dias de Figueiredo, University of Coimbra, Portugal

Enrique Vidal, Polytechnic University of Valencia, Spain

Hermann Ney, RWTH Aachen University, Germany

Isabel Trancoso, IST, University of Lisbon, Portugal

17:40-20:00

Social Program

20:00-23:00

Conference Dinner (includes awards ceremony and announcement of next IbPRIA)

May 6 (FRIDAY, Building 25)

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| 8:30-9:00 | IbPRIA 2022 Registration |
| 9:15-10:15 | Invited talk: Battista Biggio, University of Cagliari, Italy Machine Learning Security: Attacks and Defences (Chair: Helder Oliveira, University of Porto, Portugal) |
| 10:15-10:45 | Coffee Break |
| 10:45-12:05 | Oral Session 6: Medical Image processing (Chair: Wilson Silva, University of Porto, Portugal) ID 64: Deep Aesthetic Assessment and Retrieval of Breast Cancer Treatment Outcomes, Wilson Silva, Maria Carvalho, Carlos Mavioso, Maria J. Cardoso, Jaime S. Cardoso ID 24: Lesion-Based Chest Radiography Image Retrieval for Explainability in Pathology Detection, João Pedrosa, Pedro Sousa, Joana Silva, Ana Maria Mendonça, Aurélio Campilho ID 67: Increased Robustness in Chest X-ray Classification through Clinical Report-driven regularization, Diogo Mata, Wilson Silva, Jaime Cardoso ID 16: Diagnosis of Skin Cancer Using Hierarchical Neural Networks and Metadata, Beatriz Alves, Catarina Barata, Jorge S. Marques |
| 12:05-12:20 | Closing Ceremony |
| 12:30-14:00 | Lunch (Building F) |

University of Aveiro map for the IbPRIA 2022 events

