

09:00	Registration	
09:15	Open Ceremony	
09:30	Poster session 1	Biometrics, biomedical pattern analysis and information systems; Document processing, text and graphics recognition, digital libraries; Speech recognition, music analysis, multimedia systems

#	Título	Autores
1	Breast MRI Multi- Sequence Segmentation and Registration	João F. Teixeira, Sílvia Bessa and Hélder P. Oliveira
2	Sarcopenia Diagnosis: Deep Transfer Learning versus Tradicional Machine Learning	Carlos Sobral, Jose Silvestre Silva, Alexandra Albuquerque André and Jaime Santos
3	Multispectral Images Applied to Face Recognition	Luis Lopes Chambino, Jose Silvestre Silva and Alexandre Bernardino
4	Artificial Intelligence in the Operating Room: evaluating traditional classifiers to predict patient readmission	Rita Sacramento, Rui Silva and Inês Domingues
6	Evaluating a lightweight neural reranking model for biomedical question answering	Tiago Almeida and Sérgio Matos
9	Radiomic analysis of brain MRI: A case study in Autism Spectrum Disorder	Joana Soeiro, Lília Dias, Augusto Silva and Ana Tomé
12	Brain Extraction for Analysis of Magnetic Resonance Imaging in Patients with Multiple Sclerosis	Marcela de Oliveira, Marina Piacenti-Silva, Paulo Noronha Lisboa-Filho, Fernando Coronetti Gomes Rocha, Jorge Manuel Santos and Jaime Santos Cardoso
13	Adversarial learning for a robust fingerprint presentation attack detection method against unseen attacks	João Afonso Pereira, Diogo Pernes, Ana Sequeira and Jaime S. Cardoso
18	Removal of periodic geometric structure in the fingerprint minutiae detection	Eduardo Castro, Ana Rebelo, Carlos Gonçalves and Jaime Cardoso
19	Classifying acanthocytes using image processing and ML techniques: A comparative study	Catarina Silva, Augusto Silva and Joaquim Madeira
21	Semantic Vs Radiomic Features from CT Images to Predict Gene Mutation Status in Lung Cancer	Tania Pereira, Gil Pinheiro, Catarina Dias, António Cunha and Hélder P. Oliveira
24	Lifelog Moment Retrieval Web Application	Ricardo Ribeiro, Alina Trifan, José Luis Oliveira and António J. R. Neves
39	Achieving Cancellability in End-to-End Deep Biometrics with the Secure Triplet Loss	João Ribeiro Pinto, Miguel V. Correia and Jaime S. Cardoso
40	Image Quality Assessment of Cytology Images using Deep Learning	Tomé Albuquerque, Maria João M. Vasconcelos and Jaime S. Cardoso
43	Explainable Artificial Intelligence for Face Presentation Attack Detection	Wilson Silva, João Ribeiro Pinto, Tiago Gonçalves, Ana F. Sequeira and Jaime S. Cardoso
45	A Deep Image Segmentation Approach to Breast Keypoint Detection	Tiago Gonçalves, Wilson Silva and Jaime Cardoso
57	Classification of Not Suitable for Work Images: A Deep Learning Approach for Arquivo.pt	Daniel Bicho, Artur Ferreira and Nuno Datia
58	Increasing Road Safety with Machine Learning - A Fatigue and Drowsiness Detection System	António Cerca, André Lourenço and Artur Ferreira

10:30	Coffee break	
11:00	Keynote talk	

Título	Invited Speaker
Machine Learning for Human Data Modelling and Analysis Abstract: Taking advantage of the recent advancement in machine learning and the availability of big data, computers have become smarter than ever in understanding complicated data. In this talk, I will focus on the modelling and analysis of human data, which can be represented in formats such as images, video, 3D movement and surfaces. Such data is core to a wide spectrum of research fields including computer vision (e.g. action recognition, pose estimation, 3D reconstruction), computer graphics (e.g. character animation, crowd simulations) and biomedical engineering (e.g. diseases diagnosis, motion analysis). Modelling human data effectively is a challenging problem as it is high dimensional in nature and diverse in representations. I will talk about how machine learning techniques can be used to take on the challenge to come up with novel models that enable robust applications. In particular, I will discuss how state-of-the-art deep learning provides a powerful framework for large-scale human data modelling and analysis. Finally, I will share some insights into future research opportunities and interesting research directions in this area.	Hubert P. H. Shum, Durham University Biography: Dr Hubert P. H. Shum is an Associate Professor in Computer Science at Durham University. Before this, he worked as the Director of Research/Associate Professor/Senior Lecturer at Northumbria University, a Postdoctoral Researcher at RIKEN Japan, and a Research Assistant at the City University of Hong Kong. He received his PhD degree from the University of Edinburgh, his Master and Bachelor degrees from the City University of Hong Kong. He led funded research projects as the Principal Investigator awarded by EPSRC, the Ministry of Defence (DASA) and the Royal Society. This facilitated him to develop his research team and to collaborate with international researchers from the UK, China, France, Japan and India. To engage the academic and industry networks, he led his team hosting important conferences such as BMVC and ACM SIGGRAPH Conference on MIG. Contributing to the research community, he has served as an Associate Editor for Computer Graphics Forum, a Guest Editor for International Journal of Computer Vision, and a Program Committee member in 15 conferences such as CVPR, Eurographics, Pacific Graphics. He has published over 100 research papers in the fields of computer graphics, computer vision, motion analysis and machine learning, particularly focusing on the modelling of human-related data.

12:00	Poster session 2	Computer vision, robotics, remote sensing
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#	Título	Autores
5	Sentinel-2 Image Scene Classification over Alentejo Region Farmland	Kashyap Raiyani, Teresa Goncalves, Luis Rato, Pedro Salgueiro and Jose Rafael
7	Deep learning to automate the assessment of cultural ecosystem services from social media data	Ana Sofia Cardoso, Francesco Renna and Ana Sofia Vaz
9	Radiomic analysis of brain MRI: A case study in Autism Spectrum Disorder	Joana Soeiro, Lília Dias, Augusto Silva and Ana Tomé
11	Training Convolutional Neural Networks to be Background Invariant	Ricardo Cruz and Jaime S. Cardoso

14	IHC Classification in Breast Cancer H&E Slides with a Weakly-Supervised Approach	Sara P. Oliveira, João Ribeiro Pinto, Tiago Gonçalves, Hélder P. Oliveira and Jaime Cardoso
15	Mood Estimation Based on Facial Expressions and Postures	Daniel Canedo and António J. R. Neves
17	Segmentation of fetus brain MRI based on K-nn algorithm	Francisco Oliveira, Paulo Salgado and Tereza Azevedo Perdicoulis
20	Direct Georeferencing of Fire Front Aerial Images using Iterative Ray-Tracing and a Bearings-Range Extended Kalman Filter	Bernardo Santana, Alexandre Bernardino and Ricardo Ribeiro
22	Computational Analysis of Nonverbal Communication Cues in Group Settings	Rui Frazão, Samuel Silva, Sandra Soares and António J. R. Neves
23	Active Robot Learning for Efficient Body-Schema Online Adaptation	Gonçalo Cunha, Alexandre Bernardino, Pedro Vicente, Ricardo Ribeiro and Plínio Moreno
26	Learning to Grasp Objects in Virtual Environments through Imitation	Alexandre Filipe, Alexandre Bernardino and Plínio Moreno
30	Fire and Smoke Detection using CNN's trained with Fully Supervised methods and Search by Quad-Tree	Gonçalo Perrolas, Alexandre Bernardino and Ricardo Ribeiro
32	Assessment of Motor Compensation Patterns in Stroke Rehabilitation Exercises	Ana Rita Cóias and Alexandre Bernardino
33	Exploring the Impact of Color Space in 6D Object Pose Estimation	Nuno Pereira and Luís A. Alexandre
34	Fire and Smoke Detection in Aerial Images	Bernardo Amaral, Alexandre Bernardino and Catarina Barata
36	Real-Time 3D Tracking of Simple Objects with an RGB Camera	Lino Pereira, Bernardo Ferreira and Alexandre Bernardino
42	Cluster-based Anchor Box Optimisation Method for Different Object Detection Architectures	Ana Filipa Sampaio, João Gonçalves, Luís Rosado and Maria Vasconcelos
48	Assessing the Potential of Multi-view approaches in Breast Cancer Mass Detection	Eduardo Castro, José Costa Pereira and Jaime S. Cardoso
51	Object Detection in Equirectangular Images	Francisco Henriques, Joana Costa, Catarina Silva and Pedro Assunção

13:00 Lunch break

14:30 Oral session

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11	Training Convolutional Neural Networks to be Background Invariant	Ricardo Cruz and Jaime S. Cardoso
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45	A Deep Image Segmentation Approach to Breast Keypoint Detection	Tiago Gonçalves, Wilson Silva and Jaime Cardoso
49	Fire and Smoke recognition in crowdsourced images with YOLO networks	Ana Madeira, Catarina Silva, Alberto Cardoso and Bernardete Ribeiro

15:30 Poster session 3

Neural networks, machine learning, data mining; Signal analysis, image coding and processing, shape and texture analysis; Statistical, structural, syntactic pattern recognition

#	Título	Autores
8	Corpus Callosum Segmentation using UNET and Transfer Learning	Afonso Pinto, Regina Oliveira, Ana Tomé and Augusto Silva
10	Extremely Randomised Trees for Computational Complexity Reduction of Omnidirectional Intra Video Coding	Jose N. Filipe, João Carreira, Luis Tavora, Sérgio Faria, Antonio Navarro and Pedro A. Amado Assuncao
16	Deep Learning Algorithms for Tissue Identification in Hysteroscopies	Ana Martins, Francesco Renna, Mihaela Gotseva, Hélder Ferreira and Miguel Coimbra
25	Ship Segmentation in Areal Images for Maritime Surveillance	Carlos Pires, Alexandre Bernardino and Bruno Damas
27	Comparison and Evaluation of Information-based Measures in Images	Jorge Miguel Ferreira da Silva, Diogo Pratas and Sérgio Matos
28	Benchmarking bioinspired machine learning algorithms with CSE-CIC-IDS2018 network intrusions dataset	Paulo Ferreira and Mário Antunes
29	Vessel Segmentation on Low-Resolution Retinal Imaging	Paulo Coelho, José Camara, Hasan Zengin, João Rodrigues and António Cunha
31	Identifying Risky Dropout Student Profiles using Machine Learning Models	Sharmin Sultana Prite, Teresa Gonçalves and Luís Rato
35	Classifying Soil Type Using Radar Satellite Images	Sajib Ahmed, Teresa Gonçalves, Luís Rato, J. R. Marques da Silva, Filipe Vieira, Luis Paixão and Pedro Salgueiro
38	Prediction of pollution levels from atmospheric variables: A study using clusterwise symbolic regression	Nikhil Suresh, Paula Brito and Sonia Dias
41	Forecasting Ozone and Nitrogen Oxides for Air Quality Monitoring	Cesar Bouças, Catarina Silva, Alberto Cardoso, Filipe Araujo, Joel Arrais, Paulo Gil and Bernardete Ribeiro
44	Exploring a Siamese Neural Network Architecture for Drug Discovery	Luis Torres, Joel Arrais and Bernardete Ribeiro
47	Federated approaches for Remaining Useful Life prognosis	Raúl Llasag Rosero, Catarina Silva and Bernardete Ribeiro
49	Fire and Smoke recognition in crowdsourced images with YOLO networks	Ana Madeira, Catarina Silva, Alberto Cardoso and Bernardete Ribeiro
50	Path planning by hybrid PSO-Splines algorithm	Paulo Salgado
52	Federated Learning Optimization	Miguel Fernandes, Joel Arrais, Catarina Silva, Alberto Cardoso and Bernardete Ribeiro
54	Optimal lag selection for covariates in INGARCH models: an application to the analysis of air quality effect on daily respiratory hospital admissions	Ana Martins, Manuel Scottó and Sónia Gouveia

16:30 Coffee break

17:00 Awards and Closing