WORKSHOP	SCHEDULE	CONTENT
11th JANUARY		
WORKSHOPS PROGRAMS		
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	12:00 - 12:15	Opening Remarks
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	12:15 - 12:45	Keynote
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	12:45 - 13:05	Fine-tuning for one-look regression vehicle counting in low-shot aerial datasets
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	13:05 - 13:25	Generative Data Augmentation for Vehicle Detection in Aerial Images
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	13:25 - 13:45	An Efficient and Reasonably Simple Solution to the Perspective-Three-Point Problem
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	13:45 - 14:05	Modeling and Simulation Framework for Airborne Camera Systems
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	14:05 - 14:25	City-Scale Point Cloud Stitching Using 2D/3D Registration for Large Geographical Coverage
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	14:25 - 14:45	On The Development of a Classification Based Automated Motion Imagery Interpretability Prediction
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	14:45 - 15:05	Remote Liveness and Heart Rate Detection from Video
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	15:05 - 15:25	RADARSAT-2 Synthetic-Aperture Radar Land Cover Segmentation using Deep Convolutional Neural Networks
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	15:25 - 15:45	Deep Learning Based Domain Adaptation with Data Fusion for Aerial Image Data Analysis
[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	15:45 - 16:00	Closing Remarks and Open Discussion
[WS14 - HCAU] Human-Centric Activity Understanding	14:00 - 14:10	Welcome
[WS14 - HCAU] Human-Centric Activity Understanding	14:10 - 14:50	Keynote: Wenjun Zeng
[WS14 - HCAU] Human-Centric Activity Understanding	14:50 - 15:30	Keynote: Dima Damen
[WS14 - HCAU] Human-Centric Activity Understanding	15:30 - 16:10	Keynote: Xavier Alameda-Pineda
[WS14 - HCAU] Human-Centric Activity Understanding	16:10 - 16:50	Keynote: Jiebo Luo
[WS14 - HCAU] Human-Centric Activity Understanding	16:50 - 17:00	TrajNet++ Challenge by Kothari Parth
[WS14 - HCAU] Human-Centric Activity Understanding	17:00 - 18:00	Papers Presentation - Spot What Matters: Learning Context Using Graph Convolutional Networks for Weakly-Supervised Action Detection - Social Modeling Meets Virtual Reality: An Immersive Implication - Pickpocketing Recognition in Still Images - t-EVA: Time-Efficient t-SNE Video Annotation - Vision-based Fall Detection using Body Geometry - Comparative Analysis of CNN-based Spatiotemporal Reasoning in Videos - Generalization of Fitness Exercise Recognition from Doppler Measurements by Domain-Adaption and Few-Shot Learning - Local Anomaly Detection in Videos using Object-Centric Adversarial Learning - A Hierarchical Framework for Motion Trajectory Forecasting Based on Modality Sampling - Skeleton-based Methods for Speaker ActionClassification on Lecture Videos
[WS14 - HCAU] Human-Centric Activity Understanding	18:00	Closing
[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	12:00 - 12:10	Opening Welcome
[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	12:10 - 12:50	Invited Talk: Fabio Remondino - Machine and Deep Learning Methods for Semantic Segmentation of 3D Heritage Data
[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	12:50 - 13:10	Break
[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	13:10 - 14:00	Understanding Art - A Brief Overview of Deep Learning Approaches to Pattern Extraction and Recognition in Paintings and Drawings - Iconographic Image Captioning for Artworks - Semantic Analysis of Cultural Heritage Data: Aligning Paintings and Descriptions in Art-Historic Collections - Insights from a Large-Scale Database of Material Depictions in Paintings - An Analysis of the Transfer Learning of Convolutional Neural Networks for Artistic Images
[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	14:00 - 14:15	Break
[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	14:15 - 14:55	Perceiving Art - Color Space Exploration of Paintings Using a Novel Probabilistic Divergence - Identifying Centres of Interest in Paintings Using Alignment and Edge Detection: Case Studies on Works by Luc Tuymans - Handwriting Classification for the Analysis of Art-Historical Documents - Attention-based Multi-modal Emotion Recognition from Art

[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	14:55 - 15:10	Break
[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	15:10 - 16:00	Restoring & Preserving Art - Machines Learning for Mixed Reality: The Milan's Cathedral from Survey to Holograms - From Fully Supervised to Blind Digital Anastylosis on DAFNE dataset - Restoration and Enhancement of Historical Stereo Photos Through Optical Flow - Automatic Chain Line Segmentation in Historical Prints - Documenting the State of Preservation of Historical Stone Sculptures in Three Dimensions with Digital Tools
[WS25 - MANPU] coMics ANalysis, Processing and Understanding	14:00 - 14:10	Opening
[WS25 - MANPU] coMics ANalysis, Processing and Understanding	14:10 - 15:00	Invited Talk: Ryosuke Yamanishi - Towards the future of comics
[WS25 - MANPU] coMics ANalysis, Processing and Understanding	15:00 - 15:10	Break
[WS25 - MANPU] coMics ANalysis, Processing and Understanding	15:10 - 16:10	Oral Session 1 - An OCR Pipeline and Semantic Text Analysis for Comics - Text block segmentation in comic speech bubbles
[WS25 - MANPU] coMics ANalysis, Processing and Understanding	16:10 - 16:20	Break
[WS25 - MANPU] coMics ANalysis, Processing and Understanding	16:20 - 17:20	Oral Session 2 - Manga Vocabulometer, A new support system for extensive reading with Japanese manga translated into English - Automatic Landmark-guided Face Image Generation for Anime Characters Using C2GAN
[WS25 - MANPU] coMics ANalysis, Processing and Understanding	17:20 - 17:50	Discussion
[WS25 - MANPU] coMics ANalysis, Processing and Understanding	17:50 - 18:00	Closing
[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	12:00 - 12:15	Opening
[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	12:15 - 13:30	Oral session I - Monuments, violins and coins 12:15 - 12:30 Quaternion Generative Adversarial Networks for Inscription Detection in Byzantine Monuments 12:30 - 12:45 AnCoins: Image-based Automated Identification of Ancient Coins Through Transfer Learning Approaches 12:45 - 13:00 Stone-by-stone segmentation for monitoring large historical monuments using deep neural networks 13:00 - 13:15 Stylistic classification of historical violins: a deep learning approach 13:15 - 13:30 MCCNet: Multi-Color Cascade Network with Weight Transfer for Single Image Depth Prediction on Outdoor Relief Images
[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	13:30 - 14:30	Invited Talk: Davide Tanasi - From bits to bytes: pattern recognition and digital imaging for the study of ancient mosaics
[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	14:30 - 15:30	Poster session (Poster presentations are made in parallel) - Underground Archaeology: Photogrammetry and Terrestrial Laser Scanning of the Hypogeum of Crispia Salvia (Marsala, Italy) - A Contextual Approach for Coastal Tourism and Cultural Heritage Enhancing - Recommender System for Digital Storytelling: a novel approach to enhance Cultural Heritage - PapyRow: a dataset of row images from ancient Greek Papyri for writers identification - Abstracting stone walls for visualization and analysis - Can OpenPose be used as a 3D registration method for 3D scans of cultural heritage artifacts - Extracting Descriptive Words from Untranscribed Handwritten Images - Handwriting classification of Byzantine codices via geometric transformations induced by curvature deformations - Weakly supervised bounding box extraction for unlabeled data in table detection - Visual Programming-based Interactive Analysis of Ancient Documents: The Case of Magical Signs in Jewish Manuscripts
[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	15:30 - 16:45	Oral session II - Ancient documents: restoration and analysis 15:30 - 15:45 Deep learning spatial-spectral processing of hyperspectral images for pigment mapping of cultural heritage artifacts 15:45 - 16:00 Using Graph Neural Networks to Reconstruct Ancient Documents 16:00 - 16:15 A Two-stage Unsupervised Deep Learning Framework for Degradation Removal in Ancient Documents 16:15 - 16:30 Subjective Assessments of Legibility in Ancient Manuscript Images - The SALAMI Dataset 16:30 - 16:45 Simultaneous Detection of Regular Patterns in Ancient Manuscripts using GAN-based Deep Unsupervised Segmentation
[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	16:45 - 18:00	Oral session III - Ancient documents: knowledge extraction 16:45 - 17:00 Transfer learning methods for extracting,classifying and searching large collections ofhistorical images and their captions 17:00 - 17:15 Survey on Deep Learning-based Kuzushiji Recognition 17:15 - 17:30 Text line extraction using fully convolutional network and energy minimization 17:30 - 17:45 A Comparison of Character-based Neural Machine Translations Techniques Applied to Spelling Normalization 17:45 - 18:00 A Convolutional Recurrent Neural Network for the Handwritten Text Recognition of Historical Greek manuscripts
[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	18:00	Closing
[WS28 - CADL] Computational Aspects of Deep Learning	12:00 - 12:10	Welcome and introduction
[WS28 - CADL] Computational Aspects of Deep Learning	12:10 - 13:30	Tutorial: Adam Henryk Grzywaczewski - Data Parallel training of Neural Networks. Overcoming the challenges of very large batch training
[WS28 - CADL] Computational Aspects of Deep Learning	13:30 - 14:00	Lightning talks – Short summaries of all the papers accepted to the workshop (3 minutes each)
[WS28 - CADL] Computational Aspects of Deep Learning	14:00 - 14:30	Oral presentation - WaveTF: a fast 2D wavelet transform for machine learning in Keras
[WS28 - CADL] Computational Aspects of Deep Learning	14:30 - 15:00	Short presentations - Learning Sparse Filters In Deep Convolutional Neural Networks With A l1/l2 Pseudo-Norm - Introducing Region Pooling Learning
[WS28 - CADL] Computational Aspects of Deep Learning	15:00 - 15:30	Short presentations - Multi-node training for StyleGAN2 - Flow R-CNN: Flow-enhanced object detection

[WS28 - CADL] Computational Aspects of Deep Learning	15:30 - 16:00	Oral presentation – Convergence dynamics of Generative Adversarial Networks: the dual metric flows
[WS28 - CADL] Computational Aspects of Deep Learning	16:00 - 16:30	Short presentations - Compressed Video Action Recognition using Motion Vector Representation - Second order bifurcating methodology for Neural Network training and topology optimization
[WS28 - CADL] Computational Aspects of Deep Learning	16:30 - 17:00	Invited Talk: Tom Gibbs - Using the Convergence of HPC*AI to Solve Science Grand Challenges
[WS28 - CADL] Computational Aspects of Deep Learning	17:00 - 17:30	Short presentations - Biomedical Named Entity Recognition at Scale - PyraD-DCNN: a Fully Convolutional Neural Network for signal to sequence modeling, application on Offline Text Recognition Systems
[WS28 - CADL] Computational Aspects of Deep Learning	17:30 - 18:00	Invited Talk: Mirko Cestari - Get to Know Leonardo, the Next EuroHPC System for Italian and European Research
[WS28 - CADL] Computational Aspects of Deep Learning	18:00	Concluding remarks
[WS29 - DLPR] Deep Learning for Pattern Recognition	14:00 - 14:45	Do We Really Need Ground Truths to Evaluate A Model?
[WS29 - DLPR] Deep Learning for Pattern Recognition	14:45 - 14:57	Recurrent Graph Convolutional Network for Skeleton-Based Abnormal Driving Behavior Recognition
[WS29 - DLPR] Deep Learning for Pattern Recognition	14:57 - 15:09	Supervised Autoencoder Variants for End to End Anomaly Detection
[WS29 - DLPR] Deep Learning for Pattern Recognition	15:09 - 15:21	Fuzzy-based Pseudo Segmentation Approach for Handwritten Word Recognition using a Sequence to Sequence Model with Attention
[WS29 - DLPR] Deep Learning for Pattern Recognition	15:21 - 15:33	Bifurcated Autoencoder for Segmentation of COVID - 19 Infected Regions in CT Images
[WS29 - DLPR] Deep Learning for Pattern Recognition	15:33 - 15:45	DeepPBM: Deep Probabilistic Background Model Estimation from Video Sequences
[WS29 - DLPR] Deep Learning for Pattern Recognition	15:45 - 15-57	Tracker Evaluation for Small Object Tracking
[WS29 - DLPR] Deep Learning for Pattern Recognition	15:57 - 16:09	DepthOBJ: a syntethic dataset for 3D mesh model retrieval
[WS29 - DLPR] Deep Learning for Pattern Recognition	16:09 - 16:29	Coffee Break
[WS29 - DLPR] Deep Learning for Pattern Recognition	16:29 - 16:41	GFTE: Graph-based Financial Table Extraction
[WS29 - DLPR] Deep Learning for Pattern Recognition	16:41 - 16:53	Relative Attribute Classification with Deep-RankSVM
[WS29 - DLPR] Deep Learning for Pattern Recognition	16:53 - 17:05	Adversarial Continuous Learning in Unsupervised Domain Adaptation
[WS29 - DLPR] Deep Learning for Pattern Recognition	17:05 - 17:17	A survey of Deep Learning based Fully Automatic Bone Age Assessment Algorithms
[WS29 - DLPR] Deep Learning for Pattern Recognition	17:17 - 17:29	Unsupervised Real-World Super-Resolution using Variational Auto-Encoder And Generative Adversarial Network
[WS29 - DLPR] Deep Learning for Pattern Recognition	17:29 - 17:41	Training of Multiple and Mixed Tasks With A Single Network Using Feature Modulation
[WS29 - DLPR] Deep Learning for Pattern Recognition	17:41 - 17:53	Deep Image Clustering Using Self-Learning Optimization in a Variational Auto-Encoder
[WS30 - EDL/AI] Explainable Deep Learning/AI	12:00 - 12:15	Welcome and overview of the Workshop
[WS30 - EDL/AI] Explainable Deep Learning/AI	12:15 - 13:00	Plenary talk: D. Petkovic - Towards AI Ethics and Explainability
[WS30 - EDL/AI] Explainable Deep Learning/AI	13:00 - 14:20	Morning Session - A Multi-layered Approach for Tailored Black-box Explanations - Explanatory Variations for Deep Learning Using Twin Systems - Expert level evaluations for explainable AI (XAI) methods in the medical domain - Pixel oriented visualization of samples across layers of a classification based DNN
[WS30 - EDL/AI] Explainable Deep Learning/AI	14:20 - 14:30	Break
[WS30 - EDL/AI] Explainable Deep Learning/AI	14:30 - 15:50	Afternoon session - Toward Explainable AI: Random Forest Mandel and Sample Explainer - Jointly Optimize Positive and Negative Saliencies for Black Box Classifiers - Low Dimensional Visual Attributes: An Interpretable Image Encoding - Explainable 3D-CNN for Multiple Sclerosis patients stratification
[WS30 - EDL/AI] Explainable Deep Learning/AI	15:50 - 16:00	Break

[WS30 - EDL/AI] Explainable Deep Learning/AI	16:00 - 17:00	Poster Session - Visualizing the Effect of Semantic Classes in the Attribution of Scene Recognition Models - The Impact of Activation Sparsity on Overfitting in Convolutional Neural Networks - Remove To Improve? - Explaining How Deep Neural Networks Forget by Deep Visualization - Deep Learning for Astrophysics, Understanding the Impact of Attention on Variability Induced by Parameter Initialization - A general approach to compute the relevance of middle-level input features - Evaluation of Interpretable Association Rule Mining Methods on time-series in the Maritime Domain - Anchors vs Attention: comparing XAI on a real-life use case - Explanation-driven Characterisation of Android Ransomware - Reliability of eXplainable Artificial Intelligence in Adversarial Perturbation Scenarios - AI Explainability. A Bridge between Machine Vision and Natural Language Processing - Recursive Division of Image for Explanation of Shallow CNN Models
[WS30 - EDL/AI] Explainable Deep Learning/AI	17:00 - 17:50	Panel discussion (Panelists will each present a 5 min their position and challenges they see, after which the audience will be engaged in moderated discussion)
[WS30 - EDL/AI] Explainable Deep Learning/AI	17:50 - 18:00	Closing remarks
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	12:00 - 12:10	Welcome and overview of the workshop
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	12:10 - 12:50	Invited Talk: Philippe Fournier-Viger - Topic: Advances and Challenges for the Automatic Discovery of Interesting Pattern in Data
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	12:50 - 13:00	Q&A and discussion
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	13:00 - 13:20	A PSO-based Sanitization Process with Multi-Thresholds Model
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	13:20 - 13:40	Fake Review Classification using Supervised Machine Learning
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	13:40 - 14:00	Defect Detection of Stainless Steel Plates Using Deep Learning Technology
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	14:00 - 14:20	Deep Neural Networks for Detecting Real Emotions Using Biofeedback and Voice
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	14:20 - 14:40	Data Augmentation for a Deep Learning Framework for Ventricular Septal Defect Ultrasound Image Classification
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	14:40 - 15:00	A neural network model for lead optimization of MMP12 inhibitors
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	15:00 - 15:20	An Empirical Analysis of Integrating Feature Extraction to Automated Machine Learning Pipeline
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	15:20 - 15:40	Input-aware Neural Knowledge Tracing Machine
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	15:40 - 16:00	Break
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	16:00 - 16:20	Towards Corner Case Detection by Modeling the Uncertainty of Instance Segmentation Networks
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	16:20 - 16:40	Intelligent and Interactive Video Annotation for Instance Segmentation using Siamese Neural Networks
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	16:40 - 17:00	Imputation of Rainfall Data using improved Neural Network Algorithm
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	17:00 - 17:20	Novelty based Driver Identification on RR Intervals from ECG Data
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	17:20 - 17:40	Link prediction in social networks by Variational Graph Autoencoder and similarity-based methods: a brief comparative analysis
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	17:40 - 18:00	A Hybrid Wine Classification Model for Quality Prediction
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	18:00 - 18:20	Task-specific Novel Object Characterization
[WS31 - IADS] Integrated Artificial Intelligence In Data Science	18:20 - 18:30	Conclusion
[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	14:00 - 14:10	Workshop welcome and opening
[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	14:10 - 14:50	Invited talk: Ha Quang Minh
[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	14:50 - 15:20	Improving neural network robustness through neighborhood preserving layers
[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	15:20 - 15:40	Latent Space Geometric Statistics

[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	15:40 - 15:50	Break
[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	15:50 - 16:20	Metric Learning on the Manifold of Oriented Ellipses: Application to Facial Expression Recognition
[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	16:20 - 17:00	Invited talk: Shantanu H. Joshi
[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	17:00 - 17:40	Invited talk: Xavier Pennec
[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	17:40 - 18:20	Invited talk: Nicolas Boumal
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	12:00	Joining the online conference. Introduction to the technical information (for online participants)
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	12:00 - 12:40	Keynote: Henning Muller - Multimodal Medical Data Analysis: Machine Learning in Histopathology
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	12:40 - 13:00	Hierarchical Consistency and Refnement for Semi-supervised Medical Segmentation
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	13:00 - 13:20	BVTNet: Multi-label Multi-class Fusion of Visible and Thermal Camera for Free Space and Pedestrian Segmentation
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	13:20 - 13:40	Cross-modal Deep Learning Applications: Audio-Visual Retrieval
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	13:40 - 14:00	Automated segmentation of lateral ventricle in MR images using multi-scale feature fusion convolutional neural network
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	14:00 - 14:20	From Bottom to Top: A Coordinated Feature Representation Method for Speech Recognition
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	14:20 - 15:00	Keynote: Ting Yao - Vision to Language: from Independency, Interaction, to Symbiosis
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	15:00 - 15:20	An Overview of Image-to-Image Translation using Generative Adversarial Networks
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	15:20 - 15:40	Multimodal Emotion Recognition Based on Speech and Physiological Signals Using Deep Neural Networks
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	15:40 - 16:00	Exploiting Word Embeddings for Recognition of Unseen Objects
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	16:00 - 16:20	Visual Word Embedding for Text Classification
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	16:20 - 16:40	Fusion Models for Improved Visual Captioning
[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	16:40 - 18:00	Closing Ceremony
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	12:00 - 12:15	Welcome from the chairs
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	12:15 - 12:45	Invited Talk: Robin Jenkin - Imaging and Metric Considerations for DNNS
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	12:45 - 13:00	On the impact of rain over semantic segmentation of street scenes
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	13:00 - 13:15	The impact of linear motion blur on object recognition efficiency of CNNs
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	13:15 - 13:25	Break
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	13:25 - 13:40	Performance of Deep Learning and Traditional Techniques in Single Image Super-Resolution of Noisy Images
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	13:40 - 13:55	The effect of noise and brightness on convolutional deep neural networks
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	13:55 - 14:25	Coffee break

[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	14:25 - 14:55	Invited Talk: Marius Pedersen - Impact of Color on Deep Convolutional Neural Networks
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	14:55 - 15:10	Exploring the Contributions of Low-light Image Enhancement to Network-based Object Detection
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	15:10 - 15:20	Break
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	15:20 - 15:35	Multi-level Fusion based Deep Convolutional Network for Image Quality Assessment
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	15:35 - 15:50	CNN Based Predictor of Face Image Quality
[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	15:50 - 16:00	Closing remarks
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	12:00 - 12:05	Welcome and opening remarks
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	12:05 - 12:40	Invited Talk: Francesco Marzoni - Purpose-driven analytics at scale: strategy building blocks
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	12:40 - 13:20	Invited Talk: Alexandre Alahi - Perceiving and Predicting Human behaviours in the built environments
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	13.20 - 13:40	Vision-based Shelf Monitoring System for Intelligent Retail
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	14:00 - 14:20	Faithful Fit, Markerless, 3D Eyeglasses Virtual Try-On
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	14:20 - 14:40	Break
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	14:40 - 15:00	Performance assessment of face analysis algorithms with occluded faces
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	15:00 - 15:20	Shoppers detection analysis in an intelligent retail environment
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	15:20 - 15:40	A Saliency-based Technique for Advertisement Layout Optimisation to predict Customers' Behaviour
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	15:40 - 16:00	Data-Driven Knowledge Discovery in Retail: Evidences from the Vending Machine's Industry
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	16.00 - 16.20	Who is in the crowd? Deep face analysis for crowd understanding
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	16:20 - 16:40	People counting on low cost embedded hardware during the SARS-CoV-2 pandemic
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	16:40 - 17.30	Questions & Panel Discussion
[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	17.30 - 18:00	Closing Remarks
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	12:00 - 12:05	Opening

[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	12:05 - 12:45	Keynote: Alberto del Bimbo - Semi-Supervised Learning for Fine-Grained Classification
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	12:45 - 13:25	Keynote: Rita Cucchiara - Fine-grained human analysis in surveillance environment
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	13:25 - 13:40	Densely Annotated Photorealistic Virtual Dataset Generation for Abnormal Event Detection
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	13:40 - 13:55	Unsupervised Domain Adaptive Re-Identification with Feature Adversarial Learning and Self-Similarity Clustering
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	13:55 - 14:10	A Framework for Jointly Training GAN with Person Re-Identification Model
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	14:10 - 14:20	Break
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	14:20 - 15:00	Keynote: Weishi Zheng - Weakly Supervised Person Re-Identification
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	15:00 - 15:40	Keynote: Elisa Ricci - Learning to Adapt: Domain Adaptation and Generalization for Robust and Fine-Grained Recognition
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	15:40 - 15:55	Interpretable Attention Guided Network for Fine-grained Visual Classification
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	15:55 - 16:10	Use of Frequency Domain for Complexity Reduction of Convolutional Neural Netoworks
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	16:10 - 16:25	From Coarse to Fine: Hierarchical Structure-Aware Video Summarization
[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	16:25 - 16:40	ADNet: Temporal Anomaly Detection in Surveillance Videos
[WS38 - IWBDAF] IIternational Workshop on Biometric Data Analysis and Forensics	14:00 - 14:05	Introduction to Session 1: Face search and recognition
[WS38 - IWBDAF] IIternational Workshop on Biometric Data Analysis and Forensics	14:05 - 14:35	Keynote: Modesto Castrillòn Santana - Vision-based biometrics in massive sports events
[WS38 - IWBDAF] IIternational Workshop on Biometric Data Analysis and Forensics	14:35 - 15:55	Session 1: Face search and recognition 14:35 - 15:55 IFEPE: On the Impact of Facial Expression in head Pose Estimation 14:55 - 15:15 A Novel Ensemble Framework for Face Search 15:15 - 15:35 Real-Time Thermal Face Identification System for Low Memory Vision Applications Using CNN 15:35 - 15:55 DeepFakes Evolution: Analysis of Facial Regions and Fake Detection Performance
[WS38 - IWBDAF] IIternational Workshop on Biometric Data Analysis and Forensics	15:55 - 16:00	Introduction to Session 2: Biometry and data forensics
[WS38 - IWBDAF] IIternational Workshop on Biometric Data Analysis and Forensics	16:00 - 16:30	Keynote: CNCPO - CNCPO and University of Salerno - a 10 years long cooperation
[WS38 - IWBDAF] IIternational Workshop on Biometric Data Analysis and Forensics	16:30 - 17:50	Session 2: Biometry and data forensics 16:30 - 16:50 Blockchain-based iris authentication in order to secure IoT access and digital money spending 16:50 - 17:10 DEEP IRIS COMPRESSION 17:10 - 17:30 Large Scale Graph based Network Forensics Analysis 17:30 - 17:50 Analysing and Exploiting Complexity Information in On-Line Signature Verification
[WS38 - IWBDAF] IIternational Workshop on Biometric Data Analysis and Forensics	17:50 - 18:00	Salutation
[WS38 - IWBDAF] IIternational Workshop on Biometric Data Analysis and Forensics	18:00	Conclusion
[WS39 - MMForWild] MultiMedia FORensics in the WILD	11:00 - 11:10	Opening & Welcome by Chair
[WS39 - MMForWild] MultiMedia FORensics in the WILD	11:10 - 12:30	Technical Session #1 11:10 - 11:30 Analysis of the Scalability of a Deep-Learning Network for Steganography "Into the Wild" 11:30 - 11:50 Forensics Through Stega Glasses: the Case of Adversarial Images 11:50 - 12:10 Increased-confidence Adversarial Examples for Deep Learning Counter-Forensics 12:10 - 12:30 Defending Neural ODE Image Classifiers from Adversarial Attacks with Tolerance Randomization
[WS39 - MMForWild] MultiMedia FORensics in the WILD	12:30 - 13:20	Break
[WS39 - MMForWild] MultiMedia FORensics in the WILD	13:20 - 14:10	Keynote: Giovanni Tessitore,
[WS39 - MMForWild] MultiMedia FORensics in the WILD	14:10 - 15:30	Technical Session #2 14:10 - 14:30 The Forchheim Image Database for Camera Identification in the Wild 14:30 - 14:50 LSSD: a Controlled Large JPEG Image Database for Deep-Learning-based Steganalysis "into the Wild" 14:50 - 15:10 In-Depth DCT Coefficient Distribution Analysis for First Quantization Estimation 15:10 - 15:30 Nested Attention U-Net: A Splicing Detection Method for Satellite Images
[WS39 - MMForWild] MultiMedia FORensics in the WILD	15:30 - 15:50	Break
[WS39 - MMForWild] MultiMedia FORensics in the WILD	15:50 - 16:40	Keynote: Fernando Pérez-González - A walk on the wild side of camera attribution
[WS39 - MMForWild] MultiMedia FORensics in the WILD	16:40 - 18:00	Technical Session #3 16:40 - 17:00 Learning to Decipher License Plates in Severely Degraded Images 17:00 - 17:20 Neural Network for Denoising and Reading Degraded License Plates 17:20 - 17:40 Differential Morphed Face Detection Using Deep Siamese Networks 17:40 - 18:00 Fingerprint Adversarial Presentation Attack in the Physical Domain

[WS39 - MMForWild] MultiMedia FORensics in the WILD	18:00 - 18:10	Closing Remarks
[WS40 - RISS] Research & Innovation for Secure Societies	12:00 - 13:00	Keynote: Vincent Charvillat - Visual Computing with Human in the Loop
[WS40 - RISS] Research & Innovation for Secure Societies	13:00 - 13:15	Virtual coffee break & discussions
[WS40 - RISS] Research & Innovation for Secure Societies	13:15 - 13:30	SURVANT: An Innovative Semantics-based Surveillance Video Archives Investigation Assistant
[WS40 - RISS] Research & Innovation for Secure Societies	13:30 - 13:35	Q&A
[WS40 - RISS] Research & Innovation for Secure Societies	13:35 - 13:50	Automatic Fake News Detection with Pre-Trained Transformer Models
[WS40 - RISS] Research & Innovation for Secure Societies	13:50 - 13:55	Q&A
[WS40 - RISS] Research & Innovation for Secure Societies	13:55 - 14:10	A Serverless Architecture for a Wearable Face Recognition Application
[WS40 - RISS] Research & Innovation for Secure Societies	14:10 - 14:15	Q&A
[WS40 - RISS] Research & Innovation for Secure Societies	14:15 - 14:30	RGB-D Railway Platform Monitoring and Scene Understanding for Enhanced Passenger Safety
[WS40 - RISS] Research & Innovation for Secure Societies	14:30 - 14:35	Q&A
[WS40 - RISS] Research & Innovation for Secure Societies	14:35 - 14:50	A Survey About the Cyberbullying Problem on Social Media by using Machine Learning Approaches
[WS40 - RISS] Research & Innovation for Secure Societies	14:50 - 15:05	Virtual coffee break & discussions
[WS40 - RISS] Research & Innovation for Secure Societies	15:05 - 16:00	Keynote on Video-surveillance in the COVID Times
[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	12:00 - 12:10	Opening & Welcome by Chair
[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	12:10 - 12:55	Keynote: R. Guest - Biometrics on mobile devices - Results from the AMBER EU H2020 Project
[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	12:55 - 14:15	Technical Session #1 12:55 - 13:15 Adapting to Movement Patterns for Face Recognition on Mobile Devices 13:15 - 13:35 SqueezeFacePoseNet: Lightweight Face Verification Across Different Poses for Mobile Platforms 13:35 - 13:55 Biometric Recognition of PPG Cardiac Signals Using Transformed Spectrogram Images 13:55 - 14: 15 Advanced Temporal Dilated Convolutional Neural Network for a Robust Car Driver Identification
[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	14:15 - 14:30	Break
[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	14:30 - 15:50	Technical Session #2 14:30 - 14:50 Deep Learning-based Semantic Segmentation for Touchless Fingerprint Recognition 14:50 - 15:10 VISOB 2.0 - The Second International Competition on Mobile Ocular Biometric Recognition 15:10 - 15:30 Probing Fairness of Mobile Ocular Biometrics Methods Across Gender on VISOB 2.0 Dataset 15:30 - 15:50 FaceHop: A Light-Weight Low-Resolution Face Gender Classification Method
[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	15:50 - 16:00	Closing Remarks
[WS42 - IMTA] Image Mining Theory and Applications	12:00 -12:20	Workshop Opening
[WS42 - IMTA] Image Mining Theory and Applications	12:21-12:50	Keynote: Davide Moroni and Maria Antonietta Pascali - Learning topology: bridging computational topology and machine learning
[WS42 - IMTA] Image Mining Theory and Applications	12:51-13:20	Keynote: Bernd Radig - Automated Visual Large Scale Monitoring of Faunal Biodiversity
[WS42 - IMTA] Image Mining Theory and Applications	13:21 - 16:00	Session 2 13:21-13:30 The Study of Improving the Accuracy of Convolutional Neural Networks in Face Recognition Tasks 13:31-13:40 First Step Towards Creating a Software Package for Detecting the Dangerous States During Driver Eye Monitoring 13:41-13:55 Maximum Similarity Method for Image Mining 13:56-14:05 Two-stage classification model for feather images identification 14:06-14:20 Image decomposition based on region-constrained smoothing 14:21-14:30 The use of machine learning methods to detect defects in images of metal structures 14:31-14:40 MobileEmotiFace: Efficient Facial Image Representations in Video-based Emotion Recognition on Mobile Devices 14:41-14:55 On New Kemeny's Medians 14:56-15:05 Automation of the Detection of Pathological Changes in the Morphometric Characteristics of the Human Eye Fundus Based on the Data of Optical Coherence Tomography Angiography 15:06-15:20 High-performance algorithms application for retinal image segmentation based on texture features 15:21-15:30 Recognition of tomographic images in the diagnosis of stroke 15:31-15:40 Interest points detection based on sign representations of digital images 15:41-15:50 The test of covariation functions of cylindrical and circular images 15:51-16:00 Human Action Recognition using Recurrent Bag-of-Features Pooling
[WS42 - IMTA] Image Mining Theory and Applications	16:01-16:30	Keynote: Igor Gurevich and Vera Yashina - Basic Models of Descriptive Image Analysis
[WS42 - IMTA] Image Mining Theory and Applications	16:31-17:00	Keynote: Gerhard Ritter - Pattern Recognition Capabilities of Lattice based Neural Networks

[WS42 - IMTA] Image Mining Theory and Applications	17:01 - 19:40	Session 4 17:01-17:15 Estimate of the Neural Network Dimension Using Algebraic Topology and Lie Theory 17:16-17:30 On the Depth of Gestalt Hierarchies in Common Imagery 17:31-17:40 Algorithms Based on Maximization of the Mutual Information for Measuring Parameters of Canvas Texture from Images 17:41-17:55 Evaluation of spectral similarity measures and dimensionality reduction techniques for hyperspectral images 17:56-18:05 Tire Surface Segmentation in Infrared Imaging with Convolutional Neural Networks 18:06-18:20 Image recognition algorithms based on the representation of classes by convex hulls 18:21-18:30 Library of sample image instances for the Cutting Path Problem 18:31-18:40 Multiregion multiscale image segmentation with anisotropic diffusion 18:41-18:50 Machine learning approach for contactless photoplethysmographic measurement verification 18:51-19:00 One-class classification criterion robust to anomalies in training dataset 19:01-19:10 Machine Learning Based on Minimizing Robust Mean Estimates 19:11-19:25 An Objective Comparison of Ridge/Valley Detectors by Image Filtering 19:26-19:40 Memory Consumption and Computation Efficiency Improvements of Viola-Jones Object Detection Method for UAVs
[WS42 - IMTA] Image Mining Theory and Applications	19:41-20:00	Workshop Closing
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	12:00 - 12:10	Welcome and Opening
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	12:10 - 12:50	Invited Talk: Stan Z. Li - Challenges in Face Recognition and Solutions
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	12:50 - 13:30	Invited Talk: Tony Han - Deploy Robotaxi at Scale in China
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	13:30 - 14:10	Invited Talk: Si Liu - Human Object Interaction Detection and Segmentation
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	14:15 - 14:30	Unbalanced Optimal Transport in Multi-Camera Tracking Applications
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	14:30 - 14:45	Arithmetic evaluation system based on MixNet-YOLOv3 and CRNN neural networks
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	14:45 - 15:00	Light-Weight Distilled HRNet For Facial Landmark Detection
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	15:00 - 15:15	A Novel Multi-Feature Skeleton Regpresentation for 3D Action Recognition
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	15:15 - 15:30	R2SN: Refined Semantic Segmentation Network of City Remote Sensing Image for Re-identification
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	15:30 - 15:45	HSS-GCN: A Hierarchical Spatial Structural Graph Convolutional Network for Vehicle Re-identification
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	15:45 - 16:00	A DeepFM-based recommention for taxi pick-up area
[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	16:00 - 16:10	Discussion and closing
[WS44 - PATCAST] Pattern Forecasting	12:00 - 12:05	Opening by workshop chairs
[WS44 - PATCAST] Pattern Forecasting	12:05 - 12:25	Invited talk: Thomas Brox and Osama Makansi
[WS44 - PATCAST] Pattern Forecasting	12:25 - 12:45	Invited talk: Dino Zardi
[WS44 - PATCAST] Pattern Forecasting	12:45 - 12:55	Adaptive Future Frame Prediction with Ensemble Network
[WS44 - PATCAST] Pattern Forecasting	12:55 - 13:15	Invited talk: Carolina García Martos
[WS44 - PATCAST] Pattern Forecasting	13:15 - 13:35	Invited talk: Giovanni Maria Farinella
[WS44 - PATCAST] Pattern Forecasting	13:35 - 13:50	Invited spotlight presentations - AC-VRNN: Attentive Conditional-VRNN for Multi-Future Trajectory Prediction - Inverting the Pose Forecasting Pipeline with SPF2: Sequential Pointcloud Forecasting for Sequential Pose Forecasting - DLow: Diversifying Latent Flows for Diverse Human Motion Prediction - Transformer Networks for Trajectory Forecasting - Short and long-term clothing sales forecasting with exogenous factors - Finding a needle in a haystack: forecasting user search for fine-grained image retrieval - The Garden of Forking Paths: Towards Multi-Future Trajectory Prediction
[WS44 - PATCAST] Pattern Forecasting	13:50 - 14:10	Invited talk: Marco Bee
[WS44 - PATCAST] Pattern Forecasting	14:10 - 14:30	Invited talk: Novella Bartolini
[WS44 - PATCAST] Pattern Forecasting	14:30 - 14:40	Rain Code: Multi-Frame Based Forecasting Spatiotemporal Precipitation Using ConvLSTM
[WS44 - PATCAST] Pattern Forecasting	14:40 - 15:00	Invited talk: Pratik Prabhanjan Brahma
[WS44 - PATCAST] Pattern Forecasting	15:00 - 15:20	Invited talk: Marco Pavone and James Harrison
[WS44 - PATCAST] Pattern Forecasting	15:20 - 16:00	Panel Discussion and concluding remarks
[WS45 - RRPR] Reproducible Research in Pattern Recognition	14:00 - 14:05	Workshop Introduction from organizers
[WS45 - RRPR] Reproducible Research in Pattern Recognition	14:05 - 14:45	Invited Talk: Roberto Di Cosmo - Preserving source code in Software Heritage: a foundation for reproducibility

[WS45 - RRPR] Reproducible Research in Pattern Recognition	14:45 - 15:30	RR Framework (RRPR room) 14:45 - 15:00ReproducedPapers.org: Openly teaching and structuring machine learning reproducibility 15:00 - 15:15 Reproducibility: Evaluating the Evaluations 15:15 - 15:30 torchdistill: A Modular, Configuration-Driven Framework for Knowledge Distillation
[WS45 - RRPR] Reproducible Research in Pattern Recognition	15:30 - 15:40	Virtual Coffee break
[WS45 - RRPR] Reproducible Research in Pattern Recognition	15:40 - 16:20	Invited Talk: N. Bonneel|D. Coeurjolly|J. Digne|N. Mellado - There and back again, a replicability tale
[WS45 - RRPR] Reproducible Research in Pattern Recognition	16:20 - 16:45	RR Results 16:20 - 16:35 Pith Estimation on Tree Log End Images 16:35 - 16:45 Structure and Concept of the Benchmark for Vesselness Filters with focus on Reproducibilty and Future Evaluations
[WS45 - RRPR] Reproducible Research in Pattern Recognition	16:45 - 16:55	Virtual Coffee break
[WS45 - RRPR] Reproducible Research in Pattern Recognition	16:55 - 17:40	RR Results: Special Track Deep Learning (RRPR room) 16:55 - 17:10 Spatio-Temporal Convolutional Autoencoders for Perimeter Intrusion Detection 17:10 - 17:25 Tree Defect Segmentation using Geometric Features and CNN 17:25 - 17:40 Creating Emotion Recognition Algorithms based on a Convolutional Neural Network for Sentiment Analysis
[WS45 - RRPR] Reproducible Research in Pattern Recognition	17:40 - 17:55	Fast track of short papers (RRPR room) 17:40 - 17:43 Reproducing the sparse Huffman Address Map compression for deep neural networks 17:43 - 17:46 A Heuristic-Based Decision Tree for Connected Components Labeling of 3D Volumes: Implementation and Reproducibility Notes 17:46 - 17:49 Implementation of Genetic Pseudo Rehearsal 17:49 - 17:52 On the Implementation of Planar 3D Transfer Learning for End to End Unimodal MRI Unbalanced Data Segmentation 17:52 - 17:55 Reproducibility Aspects of Crack Detection as a Weakly-Supervised Problem: Towards Achieving Less Annotation-Intensive Crack Detectors 17:55 - 18:00Workshop Conclusion
[WS46 - VAIB] Visual observation and analysis of Vertebrate And Insect Behavior	14:00 - 14:15	Welcome and Housekeeping
[WS46 - VAIB] Visual observation and analysis of Vertebrate And Insect Behavior	14:15 - 15:30	Insects 14:15 - 14:35 Towards Visual Insect Camera Traps 14:35 - 14:55 Pose estimation of free-flying fruit flies 14:55 - 15:15 Automatic Analysis of Bees' Waggle Dance 15:15 - 15:30 General discussion and break
[WS46 - VAIB] Visual observation and analysis of Vertebrate And Insect Behavior	15:30 - 16:45	Monkeys & Apes 15:30 - 15:50 Multiple Monkey Pose Estimation Using OpenPose 15:50 - 16:10 A Dataset and Application for Facial Recognition of Individual Gorillas in Zoo Environments 16:10 - 16:30 Visual Recognition of Great Ape Behaviours in the Wild 16:30 - 16:45 General discussion and break
[WS46 - VAIB] Visual observation and analysis of Vertebrate And Insect Behavior	16:45 - 18:00	Other Animals 16:45 - 17:05 Computer-Aided Visual Analysis of Feathers 17:05 - 17:25 A Walk through a Digital Savanna: Aerial Wildlife Detection with Synthetic Data 17:25 - 17:45 Markerless 3D spatio-temporal reconstruction of microscopic swimmers from video 17:45 - 18:00 General discussion
[WS46 - VAIB] Visual observation and analysis of Vertebrate And Insect Behavior	18:00	Close

11th JANUARY		
DAY SCHEDULING		
SCHEDULE	**WORKSHOP**	**CONTENT**
11:00 - 11:10	[WS39 - MMForWild] MultiMedia FORensics in the WILD	Opening & Welcome by Chair
11:10 - 12:30	[WS39 - MMForWild] MultiMedia FORensics in the WILD	Technical Session #1 11:10 - 11:30 Analysis of the Scalability of a Deep-Learning Network for Steganography "Into the Wild" 11:30 - 11:50 Forensics Through Stega Glasses: the Case of Adversarial Images 11:50 - 12:10 Increased-confidence Adversarial Examples for Deep Learning Counter-Forensics 12:10 - 12:30 Defending Neural ODE Image Classifiers from Adversarial Attacks with Tolerance Randomization
12:00	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	Joining the online conference. Introduction to the technical information (for online participants)
12:00 - 12:05	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Welcome and opening remarks
12:00 - 12:05	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	Opening
12:00 - 12:05	[WS44 - PATCAST] Pattern Forecasting	Opening by workshop chairs
12:00 - 12:10	[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	Opening Welcome
12:00 - 12:10	[WS28 - CADL] Computational Aspects of Deep Learning	Welcome and introduction
12:00 - 12:10	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Welcome and overview of the workshop
12:00 - 12:10	[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	Opening & Welcome by Chair
12:00 - 12:10	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	Welcome and Opening

12:00 - 12:15	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	Opening Remarks
12:00 - 12:15	[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	Opening
12:00 - 12:15	[WS30 - EDL/AI] Explainable Deep Learning/AI	Welcome and overview of the Workshop
12:00 - 12:15	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	Welcome from the chairs
12:00 - 12:40	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	Keynote: Henning Muller - Multimodal Medical Data Analysis: Machine Learning in Histopathology
12:00 - 13:00	[WS40 - RISS] Research & Innovation for Secure Societies	Keynote: Vincent Charvillat - Visual Computing with Human in the Loop
12:00 -12:20	[WS42 - IMTA] Image Mining Theory and Applications	Workshop Opening
12:05 - 12:25	[WS44 - PATCAST] Pattern Forecasting	Invited talk: Thomas Brox and Osama Makansi
12:05 - 12:40	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Invited Talk: Francesco Marzoni - Purpose-driven analytics at scale: strategy building blocks
12:05 - 12:45	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	Keynote: Alberto del Bimbo - Semi-Supervised Learning for Fine-Grained Classification
12:10 - 12:50	[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	Invited Talk: Fabio Remondino - Machine and Deep Learning Methods for Semantic Segmentation of 3D Heritage Data
12:10 - 12:50	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Invited Talk: Philippe Fournier-Viger - Topic: Advances and Challenges for the Automatic Discovery of Interesting Pattern in Data
12:10 - 12:50	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	Invited Talk: Stan Z. Li - Challenges in Face Recognition and Solutions
12:10 - 12:55	[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	Keynote: R. Guest - Biometrics on mobile devices - Results from the AMBER EU H2020 Project
12:10 - 13:30	[WS28 - CADL] Computational Aspects of Deep Learning	Tutorial: Adam Henryk Grzywaczewski - Data Parallel training of Neural Networks. Overcoming the challenges of very large batch training
12:15 - 12:45	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	Keynote
12:15 - 12:45	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	Invited Talk: Robin Jenkin - Imaging and Metric Considerations for DNNS
12:15 - 13:00	[WS30 - EDL/AI] Explainable Deep Learning/AI	Plenary talk: D. Petkovic - Towards AI Ethics and Explainability
12:15 - 13:30	[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	Oral session I - Monuments, violins and coins 12:15 - 12:30 Quaternion Generative Adversarial Networks for Inscription Detection in Byzantine Monuments 12:30 - 12:45 AnCoins: Image-based Automated Identification of Ancient Coins Through Transfer Learning Approaches 12:45 - 13:00 Stone-by-stone segmentation for monitoring large historical monuments using deep neural networks 13:00 - 13:15 Stylistic classification of historical violins: a deep learning approach 13:15 - 13:30 MCCNet: Multi-Color Cascade Network with Weight Transfer for Single Image Depth Prediction on Outdoor Relief Images
12:21-12:50	[WS42 - IMTA] Image Mining Theory and Applications	Keynote: Davide Moroni and Maria Antonietta Pascali - Learning topology: bridging computational topology and machine learning
12:25 - 12:45	[WS44 - PATCAST] Pattern Forecasting	Invited talk: Dino Zardi
12:30 - 13:20	[WS39 - MMForWild] MultiMedia FORensics in the WILD	Break
12:40 - 13:00	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	Hierarchical Consistency and Refnement for Semi-supervised Medical Segmentation
12:40 - 13:20	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Invited Talk: Alexandre Alahi - Perceiving and Predicting Human behaviours in the built environments
12:45 - 12:55	[WS44 - PATCAST] Pattern Forecasting	Adaptive Future Frame Prediction with Ensemble Network
12:45 - 13:00	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	On the impact of rain over semantic segmentation of street scenes
12:45 - 13:05	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	Fine-tuning for one-look regression vehicle counting in low-shot aerial datasets
12:45 - 13:25	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	Keynote: Rita Cucchiara - Fine-grained human analysis in surveillance environment
12:50 - 13:00	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Q&A and discussion
12:50 - 13:10	[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	Break

Time	Workshop	Session
12:50 - 13:30	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	Invited Talk: Tony Han - Deploy Robotaxi at Scale in China
12:51-13:20	[WS42 - IMTA] Image Mining Theory and Applications	Keynote: Bernd Radig - Automated Visual Large Scale Monitoring of Faunal Biodiversity
12:55 - 13:15	[WS44 - PATCAST] Pattern Forecasting	Invited talk: Carolina García Martos
12:55 - 14:15	[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	Technical Session #1 12:55 - 13:15 Adapting to Movement Patterns for Face Recognition on Mobile Devices 13:15 - 13:35 SqueezeFacePoseNet: Lightweight Face Verification Across Different Poses for Mobile Platforms 13:35 - 13:55 Biometric Recognition of PPG Cardiac Signals Using Transformed Spectrogram Images 13:55 - 14: 15 Advanced Temporal Dilated Convolutional Neural Network for a Robust Car Driver Identification
13:00 - 13:15	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	The impact of linear motion blur on object recognition efficiency of CNNs
13:00 - 13:15	[WS40 - RISS] Research & Innovation for Secure Societies	Virtual coffee break & discussions
13:00 - 13:20	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	A PSO-based Sanitization Process with Multi-Thresholds Model
13:00 - 13:20	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	BVTNet: Multi-label Multi-class Fusion of Visible and Thermal Camera for Free Space and Pedestrian Segmentation
13:00 - 14:20	[WS30 - EDL/AI] Explainable Deep Learning/AI	Morning Session - A Multi-layered Approach for Tailored Black-box Explanations - Explanatory Variations for Deep Learning Using Twin Systems - Expert level evaluations for explainable AI (XAI) methods in the medical domain - Pixel oriented visualization of samples across layers of a classification based DNN
13:05 - 13:25	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	Generative Data Augmentation for Vehicle Detection in Aerial Images
13:10 - 14:00	[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	Understanding Art - A Brief Overview of Deep Learning Approaches to Pattern Extraction and Recognition in Paintings and Drawings - Iconographic Image Captioning for Artworks - Semantic Analysis of Cultural Heritage Data: Aligning Paintings and Descriptions in Art-Historic Collections - Insights from a Large-Scale Database of Material Depictions in Paintings - An Analysis of the Transfer Learning of Convolutional Neural Networks for Artistic Images
13:15 - 13:25	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	Break
13:15 - 13:30	[WS40 - RISS] Research & Innovation for Secure Societies	SURVANT: An Innovative Semantics-based Surveillance Video Archives Investigation Assistant
13:15 - 13:35	[WS44 - PATCAST] Pattern Forecasting	Invited talk: Giovanni Maria Farinella
13:20 - 13:40	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Fake Review Classification using Supervised Machine Learning
13:20 - 13:40	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	Cross-modal Deep Learning Applications: Audio-Visual Retrieval
13:20 - 14:10	[WS39 - MMForWild] MultiMedia FORensics in the WILD	Keynote: Giovanni Tessitore,
13:21 - 16:00	[WS42 - IMTA] Image Mining Theory and Applications	Session 2 13:21-13:30 The Study of Improving the Accuracy of Convolutional Neural Networks in Face Recognition Tasks 13:31-13:40 First Step Towards Creating a Software Package for Detecting the Dangerous States During Driver Eye Monitoring 13:41-13:55 Maximum Similarity Method for Image Mining 13:56-14:05 Two-stage classification model for feather images identification 14:06-14:20 Image decomposition based on region-constrained smoothing 14:21-14:30 The use of machine learning methods to detect defects in images of metal structures 14:31-14:40 MobileEmotiFace: Efficient Facial Image Representations in Video-based Emotion Recognition on Mobile Devices 14:41-14:55 On New Kemeny's Medians 14:56-15:05 Automation of the Detection of Pathological Changes in the Morphometric Characteristics of the Human Eye Fundus Based on the Data of Optical Coherence Tomography Angiography 15:06-15:20 High-performance algorithms application for retinal image segmentation based on texture features 15:21-15:30 Recognition of tomographic images in the diagnosis of stroke 15:31-15:40 Interest points detection based on sign representations of digital images 15:41-15:50 The test of covariation functions of cylindrical and circular images 15:51-16:00 Human Action Recognition using Recurrent Bag-of-Features Pooling
13:25 - 13:40	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	Performance of Deep Learning and Traditional Techniques in Single Image Super-Resolution of Noisy Images
13:25 - 13:40	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	Densely Annotated Photorealistic Virtual Dataset Generation for Abnormal Event Detection
13:25 - 13:45	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	An Efficient and Reasonably Simple Solution to the Perspective-Three-Point Problem
13:30 - 13:35	[WS40 - RISS] Research & Innovation for Secure Societies	Q&A
13:30 - 14:00	[WS28 - CADL] Computational Aspects of Deep Learning	Lightning talks – Short summaries of all the papers accepted to the workshop (3 minutes each)
13:30 - 14:10	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	Invited Talk: Si Liu - Human Object Interaction Detection and Segmentation
13:30 - 14:30	[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	Invited Talk: Davide Tanasi - From bits to bytes: pattern recognition and digital imaging for the study of ancient mosaics

Time	Workshop	Title
13:35 - 13:50	[WS40 - RISS] Research & Innovation for Secure Societies	Automatic Fake News Detection with Pre-Trained Transformer Models
13:35 - 13:50	[WS44 - PATCAST] Pattern Forecasting	Invited spotlight presentations - AC-VRNN: Attentive Conditional-VRNN for Multi-Future Trajectory Prediction - Inverting the Pose Forecasting Pipeline with SPF2: Sequential Pointcloud Forecasting for Sequential Pose Forecasting - DLow: Diversifying Latent Flows for Diverse Human Motion Prediction - Transformer Networks for Trajectory Forecasting - Short and long-term clothing sales forecasting with exogenous factors - Finding a needle in a haystack: forecasting user search for fine-grained image retrieval - The Garden of Forking Paths: Towards Multi-Future Trajectory Prediction
13:40 - 13:55	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	The effect of noise and brightness on convolutional deep neural networks
13:40 - 13:55	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	Unsupervised Domain Adaptive Re-Identification with Feature Adversarial Learning and Self-Similarity Clustering
13:40 - 14:00	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Defect Detection of Stainless Steel Plates Using Deep Learning Technology
13:40 - 14:00	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	Automated segmentation of lateral ventricle in MR images using multi-scale feature fusion convolutional neural network
13:45 - 14:05	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	Modeling and Simulation Framework for Airborne Camera Systems
13:50 - 13:55	[WS40 - RISS] Research & Innovation for Secure Societies	Q&A
13:50 - 14:10	[WS44 - PATCAST] Pattern Forecasting	Invited talk: Marco Bee
13:55 - 14:10	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	A Framework for Jointly Training GAN with Person Re-Identification Model
13:55 - 14:10	[WS40 - RISS] Research & Innovation for Secure Societies	A Serverless Architecture for a Wearable Face Recognition Application
13:55 - 14:25	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	Coffee break
13.20 - 13:40	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Vision-based Shelf Monitoring System for Intelligent Retail
14:00 - 14:05	[WS38 - IWBDAF] Iternational Workshop on Biometric Data Analysis and Forensics	Introduction to Session 1: Face search and recognition
14:00 - 14:05	[WS45 - RRPR] Reproducible Research in Pattern Recognition	Workshop Introduction from organizers
14:00 - 14:10	[WS14 - HCAU] Human-Centric Activity Understanding	Welcome
14:00 - 14:10	[WS25 - MANPU] coMics ANalysis, Processing and Understanding	Opening
14:00 - 14:10	[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	Workshop welcome and opening
14:00 - 14:15	[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	Break
14:00 - 14:15	[WS46 - VAIB] Visual observation and analysis of Vertebrate And Insect Behavior	Welcome and Housekeeping
14:00 - 14:20	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Deep Neural Networks for Detecting Real Emotions Using Biofeedback and Voice
14:00 - 14:20	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	From Bottom to Top: A Coordinated Feature Representation Method for Speech Recognition
14:00 - 14:20	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Faithful Fit, Markerless, 3D Eyeglasses Virtual Try-On
14:00 - 14:30	[WS28 - CADL] Computational Aspects of Deep Learning	Oral presentation - WaveTF: a fast 2D wavelet transform for machine learning in Keras
14:00 - 14:45	[WS29 - DLPR] Deep Learning for Pattern Recognition	Do We Really Need Ground Truths to Evaluate A Model?
14:05 - 14:25	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	City-Scale Point Cloud Stitching Using 2D/3D Registration for Large Geographical Coverage
14:05 - 14:35	[WS38 - IWBDAF] Iternational Workshop on Biometric Data Analysis and Forensics	Keynote: Modesto Castrillòn Santana - Vision-based biometrics in massive sports events
14:05 - 14:45	[WS45 - RRPR] Reproducible Research in Pattern Recognition	Invited Talk: Roberto Di Cosmo - Preserving source code in Software Heritage: a foundation for reproducibility

Time	Workshop	Session
14:10 - 14:15	[WS40 - RISS] Research & Innovation for Secure Societies	Q&A
14:10 - 14:20	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	Break
14:10 - 14:30	[WS44 - PATCAST] Pattern Forecasting	Invited talk: Novella Bartolini
14:10 - 14:50	[WS14 - HCAU] Human-Centric Activity Understanding	Keynote: Wenjun Zeng
14:10 - 14:50	[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	Invited talk: Ha Quang Minh
14:10 - 15:00	[WS25 - MANPU] coMics ANalysis, Processing and Understanding	Invited Talk: Ryosuke Yamanishi - Towards the future of comics
14:10 - 15:30	[WS39 - MMForWild] MultiMedia FORensics in the WILD	Technical Session #2 14:10 - 14:30 The Forchheim Image Database for Camera Identification in the Wild 14:30 - 14:50 LSSD: a Controlled Large JPEG Image Database for Deep-Learning-based Steganalysis "into the Wild" 14:50 - 15:10 In-Depth DCT Coefficient Distribution Analysis for First Quantization Estimation 15:10 - 15:30 Nested Attention U-Net: A Splicing Detection Method for Satellite Images
14:15 - 14:30	[WS40 - RISS] Research & Innovation for Secure Societies	RGB-D Railway Platform Monitoring and Scene Understanding for Enhanced Passenger Safety
14:15 - 14:30	[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	Break
14:15 - 14:30	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	Unbalanced Optimal Transport in Multi-Camera Tracking Applications
14:15 - 14:55	[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	Perceiving Art - Color Space Exploration of Paintings Using a Novel Probabilistic Divergence - Identifying Centres of Interest in Paintings Using Alignment and Edge Detection: Case Studies on Works by Luc Tuymans - Handwriting Classification for the Analysis of Art-Historical Documents - Attention-based Multi-modal Emotion Recognition from Art
14:15 - 15:30	[WS46 - VAIB] Visual observation and analysis of Vertebrate And Insect Behavior	Insects 14:15 - 14:35 Towards Visual Insect Camera Traps 14:35 - 14:55 Pose estimation of free-flying fruit flies 14:55 - 15:15 Automatic Analysis of Bees' Waggle Dance 15:15 - 15:30 General discussion and break
14:20 - 14:30	[WS30 - EDL/AI] Explainable Deep Learning/AI	Break
14:20 - 14:40	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Data Augmentation for a Deep Learning Framework for Ventricular Septal Defect Ultrasound Image Classification
14:20 - 14:40	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Break
14:20 - 15:00	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	Keynote: Ting Yao - Vision to Language: from Independency, Interaction, to Symbiosis
14:20 - 15:00	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	Keynote: Weishi Zheng - Weakly Supervised Person Re-Identification
14:25 - 14:45	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	On The Development of a Classification Based Automated Motion Imagery Interpretability Prediction
14:25 - 14:55	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	Invited Talk: Marius Pedersen - Impact of Color on Deep Convolutional Neural Networks
14:30 - 14:35	[WS40 - RISS] Research & Innovation for Secure Societies	Q&A
14:30 - 14:40	[WS44 - PATCAST] Pattern Forecasting	Rain Code: Multi-Frame Based Forecasting Spatiotemporal Precipitation Using ConvLSTM
14:30 - 14:45	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	Arithmetic evaluation system based on MixNet-YOLOv3 and CRNN neural networks
14:30 - 15:00	[WS28 - CADL] Computational Aspects of Deep Learning	Short presentations - Learning Sparse Filters In Deep Convolutional Neural Networks With A l1/l2 Pseudo-Norm - Introducing Region Pooling Learning
14:30 - 15:30	[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	Poster session (Poster presentations are made in parallel) - Underground Archaeology: Photogrammetry and Terrestrial Laser Scanning of the Hypogeum of Crispia Salvia (Marsala, Italy) - A Contextual Approach for Coastal Tourism and Cultural Heritage Enhancing - Recommender System for Digital Storytelling: a novel approach to enhance Cultural Heritage - PapyRow: a dataset of row images from ancient Greek Papyri for writers identification - Abstracting stone walls for visualization and analysis - Can OpenPose be used as a 3D registration method for 3D scans of cultural heritage artifacts - Extracting Descriptive Words from Untranscribed Handwritten Images - Handwriting classification of Byzantine codices via geometric transformations induced by curvature deformations - Weakly supervised bounding box extraction for unlabeled data in table detection - Visual Programming-based Interactive Analysis of Ancient Documents: The Case of Magical Signs in Jewish Manuscripts
14:30 - 15:50	[WS30 - EDL/AI] Explainable Deep Learning/AI	Afternoon session - Toward Explainable AI: Random Forest Mandel and Sample Explainer - Jointly Optimize Positive and Negative Saliencies for Black Box Classifiers - Low Dimensional Visual Attributes: An Interpretable Image Encoding - Explainable 3D-CNN for Multiple Sclerosis patients stratification

Time	Workshop	Session / Talk
14:30 - 15:50	[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	Technical Session #2 14:30 - 14:50 Deep Learning-based Semantic Segmentation for Touchless Fingerprint Recognition 14:50 - 15:10 VISOB 2.0 - The Second International Competition on Mobile Ocular Biometric Recognition 15:10 - 15:30 Probing Fairness of Mobile Ocular Biometrics Methods Across Gender on VISOB 2.0 Dataset 15:30 - 15:50 FaceHop: A Light-Weight Low-Resolution Face Gender Classification Method
14:35 - 14:50	[WS40 - RISS] Research & Innovation for Secure Societies	A Survey About the Cyberbullying Problem on Social Media by using Machine Learning Approaches
14:35 - 15:55	[WS38 - IWBDAF] Iternational Workshop on Biometric Data Analysis and Forensics	Session 1: Face search and recognition 14:35 - 15:55 IFEPE: On the Impact of Facial Expression in head Pose Estimation 14:55 - 15:15 A Novel Ensemble Framework for Face Search 15:15 - 15:35 Real-Time Thermal Face Identification System for Low Memory Vision Applications Using CNN 15:35 - 15:55 DeepFakes Evolution: Analysis of Facial Regions and Fake Detection Performance
14:40 - 15:00	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	A neural network model for lead optimization of MMP12 inhibitors
14:40 - 15:00	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Performance assessment of face analysis algorithms with occluded faces
14:40 - 15:00	[WS44 - PATCAST] Pattern Forecasting	Invited talk: Pratik Prabhanjan Brahma
14:45 - 14:57	[WS29 - DLPR] Deep Learning for Pattern Recognition	Recurrent Graph Convolutional Network for Skeleton-Based Abnormal Driving Behavior Recognition
14:45 - 15:00	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	Light-Weight Distilled HRNet For Facial Landmark Detection
14:45 - 15:05	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	Remote Liveness and Heart Rate Detection from Video
14:45 - 15:30	[WS45 - RRPR] Reproducible Research in Pattern Recognition	RR Framework (RRPR room) 14:45 - 15:00ReproducedPapers.org: Openly teaching and structuring machine learning reproducibility 15:00 - 15:15 Reproducibility: Evaluating the Evaluations 15:15 - 15:30 torchdistill: A Modular, Configuration-Driven Framework for Knowledge Distillation
14:50 - 15:05	[WS40 - RISS] Research & Innovation for Secure Societies	Virtual coffee break & discussions
14:50 - 15:20	[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	Improving neural network robustness through neighborhood preserving layers
14:50 - 15:30	[WS14 - HCAU] Human-Centric Activity Understanding	Keynote: Dima Damen
14:55 - 15:10	[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	Break
14:55 - 15:10	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	Exploring the Contributions of Low-light Image Enhancement to Network-based Object Detection
14:57 - 15:09	[WS29 - DLPR] Deep Learning for Pattern Recognition	Supervised Autoencoder Variants for End to End Anomaly Detection
15:00 - 15:10	[WS25 - MANPU] coMics ANalysis, Processing and Understanding	Break
15:00 - 15:15	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	A Novel Multi-Feature Skeleton Regpresentation for 3D Action Recognition
15:00 - 15:20	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	An Empirical Analysis of Integrating Feature Extraction to Automated Machine Learning Pipeline
15:00 - 15:20	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	An Overview of Image-to-Image Translation using Generative Adversarial Networks
15:00 - 15:20	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Shoppers detection analysis in an intelligent retail environment
15:00 - 15:20	[WS44 - PATCAST] Pattern Forecasting	Invited talk: Marco Pavone and James Harrison
15:00 - 15:30	[WS28 - CADL] Computational Aspects of Deep Learning	Short presentations - Multi-node training for StyleGAN2 - Flow R-CNN: Flow-enhanced object detection
15:00 - 15:40	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	Keynote: Elisa Ricci - Learning to Adapt: Domain Adaptation and Generalization for Robust and Fine-Grained Recognition
15:05 - 15:25	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	RADARSAT-2 Synthetic-Aperture Radar Land Cover Segmentation using Deep Convolutional Neural Networks
15:05 - 16:00	[WS40 - RISS] Research & Innovation for Secure Societies	Keynote on Video-surveillance in the COVID Times
15:09 - 15:21	[WS29 - DLPR] Deep Learning for Pattern Recognition	Fuzzy-based Pseudo Segmentation Approach for Handwritten Word Recognition using a Sequence to Sequence Model with Attention
15:10 - 15:20	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	Break

15:10 - 16:00	[WS24 - FAPER] Fine Art Pattern Extraction and Recognition	Restoring & Preserving Art - Machines Learning for Mixed Reality: The Milan's Cathedral from Survey to Holograms - From Fully Supervised to Blind Digital Anastylosis on DAFNE dataset - Restoration and Enhancement of Historical Stereo Photos Through Optical Flow - Automatic Chain Line Segmentation in Historical Prints - Documenting the State of Preservation of Historical Stone Sculptures in Three Dimensions with Digital Tools
15:10 - 16:10	[WS25 - MANPU] coMics ANalysis, Processing and Understanding	Oral Session 1 - An OCR Pipeline and Semantic Text Analysis for Comics - Text block segmentation in comic speech bubbles
15:15 - 15:30	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	R2SN: Refined Semantic Segmentation Network of City Remote Sensing Image for Re-identification
15:20 - 15:35	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	Multi-level Fusion based Deep Convolutional Network for Image Quality Assessment
15:20 - 15:40	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Input-aware Neural Knowledge Tracing Machine
15:20 - 15:40	[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	Latent Space Geometric Statistics
15:20 - 15:40	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	Multimodal Emotion Recognition Based on Speech and Physiological Signals Using Deep Neural Networks
15:20 - 15:40	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	A Saliency-based Technique for Advertisement Layout Optimisation to predict Customers' Behaviour
15:20 - 16:00	[WS44 - PATCAST] Pattern Forecasting	Panel Discussion and concluding remarks
15:21 - 15:33	[WS29 - DLPR] Deep Learning for Pattern Recognition	Bifurcated Autoencoder for Segmentation of COVID - 19 Infected Regions in CT Images
15:25 - 15:45	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	Deep Learning Based Domain Adaptation with Data Fusion for Aerial Image Data Analysis
15:30 - 15:40	[WS45 - RRPR] Reproducible Research in Pattern Recognition	Virtual Coffee break
15:30 - 15:45	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	HSS-GCN: A Hierarchical Spatial Structural Graph Convolutional Network for Vehicle Re-identification
15:30 - 15:50	[WS39 - MMForWild] MultiMedia FORensics in the WILD	Break
15:30 - 16:00	[WS28 - CADL] Computational Aspects of Deep Learning	Oral presentation – Convergence dynamics of Generative Adversarial Networks: the dual metric flows
15:30 - 16:10	[WS14 - HCAU] Human-Centric Activity Understanding	Keynote: Xavier Alameda-Pineda
15:30 - 16:45	[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	Oral session II - Ancient documents: restoration and analysis 15:30 - 15:45 Deep learning spatial-spectral processing of hyperspectral images for pigment mapping of cultural heritage artifacts 15:45 - 16:00 Using Graph Neural Networks to Reconstruct Ancient Documents 16:00 - 16:15 A Two-stage Unsupervised Deep Learning Framework for Degradation Removal in Ancient Documents 16:15 - 16:30 Subjective Assessments of Legibility in Ancient Manuscript Images - The SALAMI Dataset 16:30 - 16:45 Simultaneous Detection of Regular Patterns in Ancient Manuscripts using GAN-based Deep Unsupervised Segmentation
15:30 - 16:45	[WS46 - VAIB] Visual observation and analysis of Vertebrate And Insect Behavior	Monkeys & Apes 15:30 - 15:50 Multiple Monkey Pose Estimation Using OpenPose 15:50 - 16:10 A Dataset and Application for Facial Recognition of Individual Gorillas in Zoo Environments 16:10 - 16:30 Visual Recognition of Great Ape Behaviours in the Wild 16:30 - 16:45 General discussion and break
15:33 - 15:45	[WS29 - DLPR] Deep Learning for Pattern Recognition	DeepPBM: Deep Probabilistic Background Model Estimation from Video Sequences
15:35 - 15:50	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	CNN Based Predictor of Face Image Quality
15:40 - 15:50	[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	Break
15:40 - 15:55	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	Interpretable Attention Guided Network for Fine-grained Visual Classification
15:40 - 16:00	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Break
15:40 - 16:00	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	Exploiting Word Embeddings for Recognition of Unseen Objects
15:40 - 16:00	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Data-Driven Knowledge Discovery in Retail: Evidences from the Vending Machine's Industry
15:40 - 16:20	[WS45 - RRPR] Reproducible Research in Pattern Recognition	Invited Talk: N. Bonneel|D. Coeurjolly|J. Digne|N. Mellado - There and back again, a replicability tale

15:45 - 15-57	[WS29 - DLPR] Deep Learning for Pattern Recognition	Tracker Evaluation for Small Object Tracking
15:45 - 16:00	[WS05 - WAAMI] Workshop on Analysis of Aerial Motion Imagery	Closing Remarks and Open Discussion
15:45 - 16:00	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	A DeepFM-based recommentation for taxi pick-up area
15:50 - 16:00	[WS30 - EDL/AI] Explainable Deep Learning/AI	Break
15:50 - 16:00	[WS35 - MOI2QDN] Metrification and Optimization of Input Image Quality in Deep Networks	Closing remarks
15:50 - 16:00	[WS41 - WMWB] Workshop on Mobile and Wearable Biometrics	Closing Remarks
15:50 - 16:20	[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	Metric Learning on the Manifold of Oriented Ellipses: Application to Facial Expression Recognition
15:50 - 16:40	[WS39 - MMForWild] MultiMedia FORensics in the WILD	Keynote: Fernando Pérez-González - A walk on the wild side of camera attribution
15:55 - 16:00	[WS38 - IWBDAF] International Workshop on Biometric Data Analysis and Forensics	Introduction to Session 2: Biometry and data forensics
15:55 - 16:10	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	Use of Frequency Domain for Complexity Reduction of Convolutional Neural Netoworks
15:57 - 16:09	[WS29 - DLPR] Deep Learning for Pattern Recognition	DepthOBJ: a syntethic dataset for 3D mesh model retrieval
16:00 - 16:10	[WS43 - IUC] Human and Vehicle Analysis for Intelligent Urban Computing	Discussion and closing
16:00 - 16:20	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Towards Corner Case Detection by Modeling the Uncertainty of Instance Segmentation Networks
16:00 - 16:20	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	Visual Word Embedding for Text Classification
16:00 - 16:30	[WS28 - CADL] Computational Aspects of Deep Learning	Short presentations - Compressed Video Action Recognition using Motion Vector Representation - Second order bifurcating methodology for Neural Network training and topology optimization
16:00 - 16:30	[WS38 - IWBDAF] IIternational Workshop on Biometric Data Analysis and Forensics	Keynote: CNCPO - CNCPO and University of Salerno - a 10 years long cooperation
16:00 - 17:00	[WS30 - EDL/AI] Explainable Deep Learning/AI	Poster Session - Visualizing the Effect of Semantic Classes in the Attribution of Scene Recognition Models - The Impact of Activation Sparsity on Overfitting in Convolutional Neural Networks - Remove To Improve? - Explaining How Deep Neural Networks Forget by Deep Visualization - Deep Learning for Astrophysics, Understanding the Impact of Attention on Variability Induced by Parameter Initialization - A general approach to compute the relevance of middle-level input features - Evaluation of Interpretable Association Rule Mining Methods on time-series in the Maritime Domain - Anchors vs Attention: comparing XAI on a real-life use case - Explanation-driven Characterisation of Android Ransomware - Reliability of eXplainable Artificial Intelligence in Adversarial Perturbation Scenarios - AI Explainability. A Bridge between Machine Vision and Natural Language Processing - Recursive Division of Image for Explanation of Shallow CNN Models
16:01-16:30	[WS42 - IMTA] Image Mining Theory and Applications	Keynote: Igor Gurevich and Vera Yashina - Basic Models of Descriptive Image Analysis
16:09 - 16:29	[WS29 - DLPR] Deep Learning for Pattern Recognition	Coffee Break
16:10 - 16:20	[WS25 - MANPU] coMics ANalysis, Processing and Understanding	Break
16:10 - 16:25	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	From Coarse to Fine: Hierarchical Structure-Aware Video Summarization
16:10 - 16:50	[WS14 - HCAU] Human-Centric Activity Understanding	Keynote: Jiebo Luo
16:20 - 16:40	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Intelligent and Interactive Video Annotation for Instance Segmentation using Siamese Neural Networks
16:20 - 16:40	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	Fusion Models for Improved Visual Captioning
16:20 - 16:40	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	People counting on low cost embedded hardware during the SARS-CoV-2 pandemic
16:20 - 16:45	[WS45 - RRPR] Reproducible Research in Pattern Recognition	RR Results 16:20 - 16:35 Pith Estimation on Tree Log End Images 16:35 - 16:45 Structure and Concept of the Benchmark for Vesselness Filters with focus on Reproducibilty and Future Evaluations
16:20 - 17:00	[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	Invited talk: Shantanu H. Joshi

Time	Workshop	Session/Presentation
16:20 - 17:20	[WS25 - MANPU] coMics ANalysis, Processing and Understanding	Oral Session 2 - Manga Vocabulometer, A new support system for extensive reading with Japanese manga translated into English - Automatic Landmark-guided Face Image Generation for Anime Characters Using C2GAN
16:25 - 16:40	[WS37 - FGVRID] Fine-Grained Visual Recognition and re-Identification	ADNet: Temporal Anomaly Detection in Surveillance Videos
16:29 - 16:41	[WS29 - DLPR] Deep Learning for Pattern Recognition	GFTE: Graph-based Financial Table Extraction
16:30 - 17:00	[WS28 - CADL] Computational Aspects of Deep Learning	Invited Talk: Tom Gibbs - Using the Convergence of HPC*AI to Solve Science Grand Challenges
16:30 - 17:50	[WS38 - IWBDAF] International Workshop on Biometric Data Analysis and Forensics	Session 2: Biometry and data forensics 16:30 - 16:50 Blockchain-based iris authentication in order to secure IoT access and digital money spending 16:50 - 17:10 DEEP IRIS COMPRESSION 17:10 - 17:30 Large Scale Graph based Network Forensics Analysis 17:30 - 17:50 Analysing and Exploiting Complexity Information in On-Line Signature Verification
16:31-17:00	[WS42 - IMTA] Image Mining Theory and Applications	Keynote: Gerhard Ritter - Pattern Recognition Capabilities of Lattice based Neural Networks
16:40 - 17:00	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Imputation of Rainfall Data using improved Neural Network Algorithm
16:40 - 17:30	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Questions & Panel Discussion
16:40 - 18:00	[WS34 - MMDLCA] Multi-Modal Deep Learning: Challenges and Applications	Closing Ceremony
16:40 - 18:00	[WS39 - MMForWild] MultiMedia FORensics in the WILD	Technical Session #3 16:40 - 17:00 Learning to Decipher License Plates in Severely Degraded Images 17:00 - 17:20 Neural Network for Denoising and Reading Degraded License Plates 17:20 - 17:40 Differential Morphed Face Detection Using Deep Siamese Networks 17:40 - 18:00 Fingerprint Adversarial Presentation Attack in the Physical Domain
16:41 - 16:53	[WS29 - DLPR] Deep Learning for Pattern Recognition	Relative Attribute Classification with Deep-RankSVM
16:45 - 16:55	[WS45 - RRPR] Reproducible Research in Pattern Recognition	Virtual Coffee break
16:45 - 18:00	[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	Oral session III - Ancient documents: knowledge extraction 16:45 - 17:00 Transfer learning methods for extracting,classifying and searching large collections ofhistorical images and their captions 17:00 - 17:15 Survey on Deep Learning-based Kuzushiji Recognition 17:15 - 17:30 Text line extraction using fully convolutional network and energy minimization 17:30 - 17:45 A Comparison of Character-based Neural Machine Translations Techniques Applied to Spelling Normalization 17:45 - 18:00 A Convolutional Recurrent Neural Network for the Handwritten Text Recognition of Historical Greek manuscripts
16:45 - 18:00	[WS46 - VAIB] Visual observation and analysis of Vertebrate And Insect Behavior	Other Animals 16:45 - 17:05 Computer-Aided Visual Analysis of Feathers 17:05 - 17:25 A Walk through a Digital Savanna: Aerial Wildlife Detection with Synthetic Data 17:25 - 17:45 Markerless 3D spatio-temporal reconstruction of microscopic swimmers from video 17:45 - 18:00 General discussion
16:50 - 17:00	[WS14 - HCAU] Human-Centric Activity Understanding	TrajNet++ Challenge by Kothari Parth
16:53 - 17:05	[WS29 - DLPR] Deep Learning for Pattern Recognition	Adversarial Continuous Learning in Unsupervised Domain Adaptation
16:55 - 17:40	[WS45 - RRPR] Reproducible Research in Pattern Recognition	RR Results: Special Track Deep Learning (RRPR room) 16:55 - 17:10 Spatio-Temporal Convolutional Autoencoders for Perimeter Intrusion Detection 17:10 - 17:25 Tree Defect Segmentation using Geometric Features and CNN 17:25 - 17:40 Creating Emotion Recognition Algorithms based on a Convolutional Neural Network for Sentiment Analysis
16.00 - 16.20	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Who is in the crowd? Deep face analysis for crowd understanding
17:00 - 17:20	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Novelty based Driver Identification on RR Intervals from ECG Data
17:00 - 17:30	[WS28 - CADL] Computational Aspects of Deep Learning	Short presentations - Biomedical Named Entity Recognition at Scale - PyraD-DCNN: a Fully Convolutional Neural Network for signal to sequence modeling, application on Offline Text Recognition Systems
17:00 - 17:40	[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	Invited talk: Xavier Pennec
17:00 - 17:50	[WS30 - EDL/AI] Explainable Deep Learning/AI	Panel discussion (Panelists will each present a 5 min their position and challenges they see, after which the audience will be engaged in moderated discussion)
17:00 - 18:00	[WS14 - HCAU] Human-Centric Activity Understanding	Papers Presentation - Spot What Matters: Learning Context Using Graph Convolutional Networks for Weakly-Supervised Action Detection - Social Modeling Meets Virtual Reality: An Immersive Implication - Pickpocketing Recognition in Still Images - t-EVA: Time-Efficient t-SNE Video Annotation - Vision-based Fall Detection using Body Geometry - Comparative Analysis of CNN-based Spatiotemporal Reasoning in Videos - Generalization of Fitness Exercise Recognition from Doppler Measurements by Domain-Adaption and Few-Shot Learning - Local Anomaly Detection in Videos using Object-Centric Adversarial Learning - A Hierarchical Framework for Motion Trajectory Forecasting Based on Modality Sampling - Skeleton-based Methods for Speaker ActionClassification on Lecture Videos

17:01 - 19:40	[WS42 - IMTA] Image Mining Theory and Applications	Session 4 17:01-17:15 Estimate of the Neural Network Dimension Using Algebraic Topology and Lie Theory 17:16-17:30 On the Depth of Gestalt Hierarchies in Common Imagery 17:31-17:40 Algorithms Based on Maximization of the Mutual Information for Measuring Parameters of Canvas Texture from Images 17:41-17:55 Evaluation of spectral similarity measures and dimensionality reduction techniques for hyperspectral images 17:56-18:05 Tire Surface Segmentation in Infrared Imaging with Convolutional Neural Networks 18:06-18:20 Image recognition algorithms based on the representation of classes by convex hulls 18:21-18:30 Library of sample image instances for the Cutting Path Problem 18:31-18:40 Multiregion multiscale image segmentation with anisotropic diffusion 18:41-18:50 Machine learning approach for contactless photoplethysmographic measurement verification 18:51-19:00 One-class classification criterion robust to anomalies in training dataset 19:01-19:10 Machine Learning Based on Minimizing Robust Mean Estimates 19:11-19:25 An Objective Comparison of Ridge/Valley Detectors by Image Filtering 19:26-19:40 Memory Consumption and Computation Efficiency Improvements of Viola-Jones Object Detection Method for UAVs
17:05 - 17:17	[WS29 - DLPR] Deep Learning for Pattern Recognition	A survey of Deep Learning based Fully Automatic Bone Age Assessment Algorithms
17:17 - 17:29	[WS29 - DLPR] Deep Learning for Pattern Recognition	Unsupervised Real-World Super-Resolution using Variational Auto-Encoder And Generative Adversarial Network
17:20 - 17:40	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Link prediction in social networks by Variational Graph Autoencoder and similarity-based methods: a brief comparative analysis
17:20 - 17:50	[WS25 - MANPU] coMics ANalysis, Processing and Understanding	Discussion
17:29 - 17:41	[WS29 - DLPR] Deep Learning for Pattern Recognition	Training of Multiple and Mixed Tasks With A Single Network Using Feature Modulation
17:30 - 18:00	[WS28 - CADL] Computational Aspects of Deep Learning	Invited Talk: Mirko Cestari - Get to Know Leonardo, the Next EuroHPC System for Italian and European Research
17:40 - 17:55	[WS45 - RRPR] Reproducible Research in Pattern Recognition	Fast track of short papers (RRPR room) 17:40 - 17:43 Reproducing the sparse Huffman Address Map compression for deep neural networks 17:43 - 17:46 A Heuristic-Based Decision Tree for Connected Components Labeling of 3D Volumes: Implementation and Reproducibility Notes 17:46 - 17:49 Implementation of Genetic Pseudo Rehearsal 17:49 - 17:52 On the Implementation of Planar 3D Transfer Learning for End to End Unimodal MRI Unbalanced Data Segmentation 17:52 - 17:55 Reproducibility Aspects of Crack Detection as a Weakly-Supervised Problem: Towards Achieving Less Annotation-Intensive Crack Detectors 17:55 - 18:00 Workshop Conclusion
17:40 - 18:00	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	A Hybrid Wine Classification Model for Quality Prediction
17:40 - 18:20	[WS33 - ManifLearn] Manifold Learning in Machine Learning, From Euclid to Riemann	Invited talk: Nicolas Boumal
17:41 - 17:53	[WS29 - DLPR] Deep Learning for Pattern Recognition	Deep Image Clustering Using Self-Learning Optimization in a Variational Auto-Encoder
17:50 - 18:00	[WS25 - MANPU] coMics ANalysis, Processing and Understanding	Closing
17:50 - 18:00	[WS30 - EDL/AI] Explainable Deep Learning/AI	Closing remarks
17:50 - 18:00	[WS38 - IWBDAF] Iternational Workshop on Biometric Data Analysis and Forensics	Salutation
17.30 - 18:00	[WS36 - DEEPRETAIL] Deep Understanding Shopper Behaviours and Interactions in Intelligent Retail Environments	Closing Remarks
18:00	[WS14 - HCAU] Human-Centric Activity Understanding	Closing
18:00	[WS26 - PATRECH] Pattern Recognition for Cultural Heritage	Closing
18:00	[WS28 - CADL] Computational Aspects of Deep Learning	Concluding remarks
18:00	[WS38 - IWBDAF] Iternational Workshop on Biometric Data Analysis and Forensics	Conclusion
18:00	[WS46 - VAIB] Visual observation and analysis of Vertebrate And Insect Behavior	Close
18:00 - 18:10	[WS39 - MMForWild] MultiMedia FORensics in the WILD	Closing Remarks
18:00 - 18:20	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Task-specific Novel Object Characterization
18:20 - 18:30	[WS31 - IADS] Integrated Artificial Intelligence In Data Science	Conclusion
19:41-20:00	[WS42 - IMTA] Image Mining Theory and Applications	Workshop Closing