WORKSHOP	SCHEDULE	CONTENT
	10th JANUARY **WORKSHOPS PROGRAMS**	
[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	14:00 - 14:15	Introduction
[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	14:15 - 15:15	Invited Talk: Micheal Jenkin - Working with Robots at Depth
[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	15:15 - 15:20	Break
[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	15:20 - 16:20	Technical talks: Underwater Robotics 15:20 - 15:40 Deep Sea Robotic Imaging Simulator 15:40 - 16:00 Optimization of Multi-LED Setups for Underwater Robotic Vision Systems 16:00 - 16:20 Learning Visual Free Space Detection for Deep-Diving Robots
[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	16:20 - 16:25	Break
[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	16:25 - 16:45	Technical talks: Underwater Image Enhancement 16:25 - 16:45 Removal of Floating Particles from Underwater Images Using Image Transformation Networks
[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	16:25 - 17:25	Technical talks: Species Classification and Enumeration 16:45 - 17:05 Video-based Hierarchical Species Classification for Longline Fishing Monitoring 17:05 - 17:25 Robust Fish Enumeration by Multiple Object Tracking in Overhead Videos
[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	17:25 - 17:30	Closing Remarks
[WS02 - MAES] Machine Learning Advances Environmental Science]	12:00 - 12:05	Welcome from the Chairs
[WS02 - MAES] Machine Learning Advances Environmental Science]	12:05 - 12:35	Invited Talk: Friedrich Recknagel - Harnessing big environmental data by Machine Learning
[WS02 - MAES] Machine Learning Advances Environmental Science]	12:35 - 12:45	Natural Disaster Classification using Aerial Photography Explainable for Typhoon Damaged Feature
[WS02 - MAES] Machine Learning Advances Environmental Science]	12:45 - 12:55	Developing a Segmentation Model for Microscopic Images of Microplastics Isolated from Clams
[WS02 - MAES] Machine Learning Advances Environmental Science]	12:55 - 13:05	Environment Object Detection for Marine ARGO Drone by Deep Learning
[WS02 - MAES] Machine Learning Advances Environmental Science]	13:05 - 13:35	Invited Talk: Michele Scardi - 25 years of Machine Learning applications in marine ecology: a personal perspective
[WS02 - MAES] Machine Learning Advances Environmental Science]	13:40 - 13:50	Environmental Time Series Prediction with Missing Data by Machine Learning and Dynamics Reconstruction
[WS02 - MAES] Machine Learning Advances Environmental Science]	13:50 - 14:00	Semi-Supervised Learning for Grain Size Distribution Interpolation, Konstantin Kobs
[WS02 - MAES] Machine Learning Advances Environmental Science]	14:00 - 14:10	Location-specific vs location-agnostic machine learning metamodels for predicting pasture nitrogen response rate
[WS02 - MAES] Machine Learning Advances Environmental Science]	14:10 - 14:20	Pattern Classification from Multi-Beam Acoustic Data Acquired in Kongsfjorden
[WS02 - MAES] Machine Learning Advances Environmental Science]	14:20 - 14:30	Break
[WS02 - MAES] Machine Learning Advances Environmental Science]	14:30 - 14:40	Unsupervised classification of acoustic echoes from two krill species in the Southern Ocean (Ross Sea)
[WS02 - MAES] Machine Learning Advances Environmental Science]	14:40 - 14:50	Multi-Input ConvLSTM for Flood Extent Prediction
[WS02 - MAES] Machine Learning Advances Environmental Science]	14:50 - 15:00	A machine learning approach to chlorophyll a time series analysis in the Mediterranean Sea
[WS02 - MAES] Machine Learning Advances Environmental Science]	15:00 - 15:10	Plankton recognition in images with varying size
[WS02 - MAES] Machine Learning Advances Environmental Science]	15:10 - 15:20	Finding Relevant Flood Images on Twitter using Content-based Filters
[WS02 - MAES] Machine Learning Advances Environmental Science]	15:20 - 15:30	Unsupervised Learning of High Dimensional Environmental Data Using Local Fractality Concept
[WS02 - MAES] Machine Learning Advances Environmental Science]	15:30 - 15:40	Spatiotemporal Air Quality Inference of Low-Cost Sensor Data; Application on a Cycling Monitoring Network
[WS02 - MAES] Machine Learning Advances Environmental Science]	15:40 - 15:50	How do Deep Convolutional SDM trained on satellite images unravel vegetation ecology?
[WS02 - MAES] Machine Learning Advances Environmental Science]	15:50 - 16:00	Closing remarks
[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	12:00 - 12:10	Introduction to workshop form the Organizers

[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	12:10 - 12:40	Keynote speech: Frédéric Bosché - Recent advances in automation in construction,
[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	12:40 - 13:00	Clutter Slices Approach for Identification-on-the-fly of Indoor Spaces
[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	13:00 - 13:20	Salient object detection with pretrained Deeplab and k-means: Application to UAV-captured building imagery
[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	13:20 - 13:40	Image Segmentation of Bricks in Masonry Wall Using a Fusion of Machine Learning Algorithms
[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	13:40 - 14:00	Automatic MEP Component Detection with Deep Learning
[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	14:00 - 14:20	Demand Flexibility Estimation Based on Habitual Behaviour and Motif Detection
[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	14:20 - 14:40	Sentinel-2 and SPOT-7 Images in Machine Learning Frameworks for SuperResolution
[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	14:40 - 15:00	Road tracking in semi-structured environments using spatial distribution of Lidar data
[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	15:00 - 15:20	Mixed RealityBased Dataset Generation for Learning-Based Scan-to-BIM
[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	15:20 - 15:40	An Augmented Reality-based Remote Collaboration Platform for Worker Assistance
[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	15:40 - 16:00	Discussion and closing remarks
[WS04 - PRRS] Pattern Recognition in Remote Sensing	14:00 - 14:10	Welcome
[WS04 - PRRS] Pattern Recognition in Remote Sensing	14:10 - 15:00	Keynote: Bertrand Le Saux - Beyond labels: semi-supervised and continual learning for Earth observation
[WS04 - PRRS] Pattern Recognition in Remote Sensing	15:10 - 16:30	Q&A Session 1 (pre-recorded videos + live Q&A) - Remembering Both the Machine and the Crowd when Sampling Points: Active Learning for Semantic Segmentation of ALS Point Clouds - Towards Urban Tree Recognition in Airborne Point Clouds with Deep 3D Single-Shot Detectors - Shared-space Autoencoders with Randomized Skip Connections for Building Footprint Detection with Missing Views
[WS04 - PRRS] Pattern Recognition in Remote Sensing	16:30 - 16:50	Break
[WS04 - PRRS] Pattern Recognition in Remote Sensing	16:50 - 17:50	Q&A Session 2 (pre-recorded videos + live Q&A) - Using a binary diffractive optical element to increase the imaging system depth of field in UAV remote sensing tasks - Self-supervised pre-training enhances change detection in Sentinel-2 imagery - Early and Late Fusion of Multiple Modalities in Sentinel Imagery and Social Media Retrieval
[WS04 - PRRS] Pattern Recognition in Remote Sensing	17:50 - 18:00	Final remarks
[WS06 - AIDP] Artificial Intelligence for Digital Pathology	12:00 - 12:15	Opening
[WS06 - AIDP] Artificial Intelligence for Digital Pathology	12:15 - 13:15	Invited Talk: Nasir Rajpoot
[WS06 - AIDP] Artificial Intelligence for Digital Pathology	13:15 - 13:35	Noise-Robust Training of Segmentation model using Knowledge Distillation
[WS06 - AIDP] Artificial Intelligence for Digital Pathology	13:40 - 14:00	Semi-supervised learning with a teacher-student paradigm for histopathology classification: a resource to face data heterogeneity and lack of local annotations
[WS06 - AIDP] Artificial Intelligence for Digital Pathology	14:05 - 14:25	Self-Attentive Adversarial Stain Normalization
[WS06 - AIDP] Artificial Intelligence for Digital Pathology	14:30 - 14:50	Certainty Pooling for Multiple Instance Learning
[WS06 - AIDP] Artificial Intelligence for Digital Pathology	14:55 - 15:15	Classification of noisy free-text prostate cancer pathology reports using natural language processing
[WS06 - AIDP] Artificial Intelligence for Digital Pathology	15:20 - 15:40	AI slipping on tiles: data leakage in digital pathology
[WS06 - AIDP] Artificial Intelligence for Digital Pathology	15:40 - 16:00	Discussion and closing
[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	12:00 - 12:15	Opening

[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	12:15 - 13:15	Invited Talk: Nico Karssemeijer - AI applications for early detection and diagnosis of breast cancer
[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	13:15 - 14:30	Oral session I - Disease diagnosis and prediction 13:15 - 13:30 Predictive Medicine Using Interpretable Recurrent Neural Networks 13:30 - 13:45 Length of Stay Prediction for Northern Italy COVID - 19 Patients based on Lab Tests and X-Ray Data 13:45 - 14:00 Advanced Non-Linear Generative Model with a Deep Classifier for Immunotherapy Outcome Prediction: A Bladder Cancer Case Study 14:00 - 14:15 Double Encoder-Decoder Networks for Gastrointestinal Polyp Segmentation 14:15 - 14:30 Organ Segmentation with Recursive Data Augmentation for Deep Models
[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	14:30 - 15:30	Poster session I - Medical image segmentation and classification (Poster presentations are made in parallel) - Medical Image Tampering Detection: a New Dataset and Baseline -Deep Learning for Human Embryo Classification at the Cleavage Stage (Day 3) - A Superpixel-wise Fully Convolutional Neural Network Approach for Diabetic Foot Ulcer Tissue Classification - Fully vs. Weakly Supervised Caries Localization in Smartphone Images with CNNs - Pollen Grain Microscopic Image Classification Using an Ensemble of Fine-Tuned Deep Convolutional Neural Networks - Active Surface for Fully 3D Automatic Segmentation - Penalizing small errors using an Adaptive Logarithmic Loss - Exploiting Saliency in Attention based Convolutional Neural Network for classfication of Vertical Root Fractures - UIP-net: a Decoder-Encoder CNN for the Detection and Quantification of Usual Interstitial Pneumoniae Pattern in Lung CT Scan Images - Don't Tear Your Hair Out: Analysis of the Impact of Skin Hair on the Diagnosis of Microscopic Skin Lesions - Deep Learning Based Segmentation of Breast Lesions in DCE-MRI
[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	15:30 - 15:45	Coffee break
[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	15:45 - 17:00	Oral session II - Mental disease assessment and assisted surgery 15:45 - 16:00 A Comparative Study on Autism Spectrum Disorder Detection via 3D Convolutional Neural Networks 16:00 - 16:15 Handwriting-based classifier combination for Cognitive Impairment prediction 16:15 - 16:30 A Lightweight Spatial Attention Module with Adaptive Receptive Fields in 3D Convolutional Neural Network for Alzheimer's Disease Classification 16:30 - 16:45 Sinc-based convolutional neural networks for EEG-BCI-based motor imagery classification 16:45 - 17:00 Deep Attention Based Semi-Supervised 2D-Pose Estimation for Surgical Instruments
[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	17:00 - 18:00	Poster session II - Healthcare applications (Poster presentations are made in parallel) - Automated detection of adverse drug events from older patients' electronic medical records using text mining - Multi-model ensemble to classify acute lymphoblastic leukemia in blood smear images - MIINet: An Image Quality Improvement Framework for Supporting Medical Diagnosis - Fall detection and recognition from egocentric visual data: A case study - Development of an Augmented Reality system based on marker - Towards Stroke Patients' Upper-limb Automatic Motor Assessment Using Smartwatches - Multimodal Detection of Tonic-Clonic Seizures based on 3D Acceleration and Heart Rate Data from an In-Ear Sensor - Deep learning detection of cardiac akinesis in echocardiograms - Prediction of minimally conscious state responder patients to non-invasive brain stimulation using machine learning algorithms - An analysis of tasks and features for neuro-degenerative disease assessment by handwriting - A Multi Classifier Approach for Supporting Alzheimer's Diagnosis Based on Handwriting Analysis
[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	18:00	Closing
[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	12:00 - 12:05	Introduction
[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	12:05 - 13:05	Session 1 Oral Presentation 12:05 - 12:25 Towards Robust Deep Neural Networks for Affect and Depression Recognition from Speech 12:25 - 12:45 Deep Learning Approach to Automated Detection of Dyslexia-Dysgraphia 12:45 - 13:05 A New Facial Expression Processing System for an Affectively Aware Hospital Robot
[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	13:05 - 13:45	Session 2: Poster Presentation 13:05 - 13:15 Multi-stream Integrated Neural Networks for Facial Expression-based Pain Recognition 13:15 - 13:25 COVID - 19 and Mental Health/Substance Use Disorders on Reddit: A Longitudinal Study 13:25 - 13:35 Classification of Autism Spectrum Disorder Across Age using Questionnaire and Demographic Information 13:35 - 13:45 Longitudinal Classification of Mental Effort Using Electrodermal Activity, Heart Rate, and Skin Temperature Data from a Wearable Sensor
[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	13:45 - 14:15	Keynote: Rosalind Picard - How can a wristband with AI help improve brain health?
[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	14:15 - 14:45	Keynote: Jiebo Luo - Intelligent Monitoring of Individual and Population Mental Health using Social Media Data
[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	14:45 - 15:30	Session 3: Oral Presentation 14:45 - 15:05 Pain Intensity Assessment in Sickle Cell Disease patients using Vital Signs during Hospital Visits 15:05 - 15:25 Neonatal pain scales and human visual perception: An exploratory analysis based on facial expression recognition and eye-tracking
[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	15:30 - 16:00	Final Session: Fireside Chat, Chris Wright - AI for Good Mental Health
[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	13:45 - 14:00	Opening
[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	14:00 - 14:40	Keynote: H. Gunes - Creating technology with socio-emotional intelligence
[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	14:40 - 16:00	Session 1 14:40 - 14:55 Multimodal Physiological-based Emotion Recognition 14:55 - 15:10 Combining deep and unsupervised features for multilingual speech emotion recognition 15:10 - 15:25 Towards Generating Topic-driven and Affective Responses to assist Mental Wellness 15:25 - 15:40 Keypoint-Based Gaze Tracking 15:40 - 15:50 Multimodal Empathic Feedback Through a Virtual Character (short paper) 15:50 - 16:00 A WebGL virtual reality exergame for assessing the cognitive capabilities of elderly people: a study about digital autonomy for web-based applications (short paper)

Workshop	Time	Content
[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	16:00 - 16:15	Break
[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	16:15 - 16:55	Keynote: A. Gaggioli - Positive Technology: designing digital experiences for positive change
[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	16:55 - 18:05	Session 2 16:55 - 17:10 Daily Living Activity Recognition Using Wearable Devices: A Features-rich Dataset and a Novel Approach 17:10 - 17:25 Deep Neural Networks for real-time remote fall detection 17:27 - 17:40 Mutual use of semantics and geometry for CNN-based object localization in ToF images 17:40 - 17:55 Development and evaluation of a mouse emulator using multi-modal real-time head tracking systems with facial gesture recognition as a switching mechanism 17:55 - 18:05 A Video-Based MarkerLess Body Machine Interface: a Pilot Study (short paper)
[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	18:05 - 18:15	Closing
[WS11 MadiMA] Multimedia Assisted Dietary Management	14:00 - 14:05	Workshop opening and welcome
[WS11 MadiMA] Multimedia Assisted Dietary Management	14:05 - 14:45	Invited Talk: Anastasios Delopoulos - BigO: Big Behavioural data against childhood obesity
[WS11 MadiMA] Multimedia Assisted Dietary Management	14:45 - 15:00	Assessing Individual Dietary Intake in Food Sharing Scenarios with Food and Human Pose Detection
[WS11 MadiMA] Multimedia Assisted Dietary Management	15:00 - 15:15	UEC-FoodPix Complete: A Large-scale Food Image Segmentation Dataset
[WS11 MadiMA] Multimedia Assisted Dietary Management	15:15 - 15:30	Analysis of Chewing Signals Based on Chewing Detection Using Proximity Sensor for Diet Monitoring
[WS11 MadiMA] Multimedia Assisted Dietary Management	15:30 - 15:45	Recognition of food-texture attributes using an in-ear microphone
[WS11 MadiMA] Multimedia Assisted Dietary Management	15:45 - 16:00	Analysis of Traditional Italian Food Recipes: Experiments and Results
[WS11 MadiMA] Multimedia Assisted Dietary Management	16:00 - 16:05	Break
[WS11 MadiMA] Multimedia Assisted Dietary Management	16:05 - 16:45	Invited Talk: Benny Lo - An innovative passive dietary monitoring system
[WS11 MadiMA] Multimedia Assisted Dietary Management	16:45 - 17:00	Partially Supervised Multi-Task Network for Single-View Dietary Assessment
[WS11 MadiMA] Multimedia Assisted Dietary Management	17:00 - 17:15	Event Mining Driven Context-Aware Personal Food Preference Modelin
[WS11 MadiMA] Multimedia Assisted Dietary Management	17:15 - 17:30	Food Recognition in the Presence of Label Noise
[WS11 MadiMA] Multimedia Assisted Dietary Management	17:30 - 17:45	S2ML-TL Framework for Multi-label Food Recognition
[WS11 MadiMA] Multimedia Assisted Dietary Management	17:45 - 18:00	Visual Aware Hierarchy Based Food Recognition
[WS12 - 3DHU] 3D Human Understanding	12:00 - 12:10	Welcome
[WS12 - 3DHU] 3D Human Understanding	12:10 - 13:00	Invited speaker: Dr. Federico Tombari - 3D Object Understanding with Less Annotation
[WS12 - 3DHU] 3D Human Understanding	13:00 - 13:50	P1 - Paper session 1: 13:00 - 13:10 Towards generalization of Human Pose estimation in the wild. 13:10 - 13:30 A novel joint points and silhouette-based method to estimate 3D human pose and shape. 13:30 - 13:50 3D Human Pose Estimation based on Multi-Input Multi-Output CNN and Event Cameras: proof of concept on the DHP19 dataset.
[WS12 - 3DHU] 3D Human Understanding	13:50 - 14:00	Break
[WS12 - 3DHU] 3D Human Understanding	14:00 - 15:00	P2 - Paper Session 2 14:00 - 14:20 Image-based Out-of-Distribution-Detector Principles on Graph-based Input Data in Human Action Recognition. 14:20 - 14:40 Pose Based Trajectory Forecast of Vulnerable Road Users Using Recurrent Neural Networks. 3D Human Understanding2:40 - 2:50 Space-Time Triplet Loss Network for Dynamic 3D Face Verification. 14:50 - 15:00 Subject Identification Across large expression variations using 3D facial landmarks.
[WS12 - 3DHU] 3D Human Understanding	15:00 - 15:50	Invited Talk 2: Prof. Anup Basu - Perceptually Guided transmission of 3D Humans
[WS12 - 3DHU] 3D Human Understanding	15:50 - 14:00	Closing
[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	12:00 - 12:10	Opening Remarks
[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	12:10 - 12:50	Keynote speaker (Guoying Zhao) + discussion
[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	12:50 - 13:40	Action Recognition Session 12:50 – 13:05 Slow Feature Subspace for Action Recognition 13:05 – 13:20 Nonlinear temporal correlation based network for action recognition 13:20 – 13:30 Spatial Temporal Transformer Network for Skeleton-based Action Recognition 13:30 – 13:40 Deformable Convolutional LSTM for Human Body Emotion Recognition
[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	13:40 - 13:50	Coffee Break
[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	13:50 - 14:35	Facial Expression Recognition Session 13:50 – 14:05 Motion Attention Deep Transfer Network for Cross-Database Micro-Expression Recognition 14:05 – 14:20 Classification Mechanism of Convolutional Neural Network for Facial Expression Recognition 14:20 – 14:35 Applying delauney triangulation augmentation for deep learning facial expression generation and recognition
[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	14:35 - 14:45	Closing Remarks
[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	12:00 - 12:20	Invited Talk: Xavier Alameda-Pineda - Combining auditory and visual data to enhance the speech signal

[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	12:20 - 12:40	ODANet: Online Deep Appearance Network for Identity-Consistent Multi-Person Tracking
[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	12:40 - 13:00	Explainable Model Selection of a Convolutional Neural Network for Driver's Facial Emotion Identication
[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	13:00 - 13:20	Articial Kindness – The Italian Case of Google Mini Recognition Patterns
[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	13:20 - 13:40	Fingerspelling recognition with two-steps cascade process of spotting and classication
[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	13:40 - 14:00	Invited Talk: Dilana Hazer-Rau - Affective Computing and Stress Recognition for Healthcare Application
[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	14:00 - 14:20	CNN Depression Severity Level Estimation from Upper Body vs. Face-Only Images
[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	14:20 - 14:40	Range-Doppler Hand Gesture Recognition using Deep Residual-3DCNN with Transformer Network
[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	14:40 - 15:00	Invited Talk: Steffen Walter - Multimodal Automatic Pain Recognition / Machine Learning
[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	15:00 - 15:20	Introducing Bidirectional Ordinal Classier Cascades Based on a Pain Intensity Recognition Scenario
[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	15:20 - 15:40	Personalized k-fold Cross-validation Analysis with Transfer from phasic to tonic Pain Recognition on X-ITE Pain Database
[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	15:40 - 16:00	Invited Talk: Mariofanna Milanova - Deep Learning and Multiple Data Types Analysis
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	12:10 - 12:55	Keynote: Alberto Del Bimbo - Garment Recommendation from fashion collections using Memory Augmented Neural Networks
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	12:55 - 13:10	Content based image retrieval and Semantic Gap in the Deep Learning Era
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	13:10 - 13:25	A Modality Converting Approach for Image Annotation to Overcome the Inconsistent Labels in Training Data
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	13:25 - 13:40	Iconic-based Retrieval of Grocery Images via Siamese Neural Network
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	13:40 - 13:50	Break
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	13:50 - 14:05	Recent Advances in Video Question Answering: A Review of Datasets and Methods
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	14:05 - 14:20	IQ-VQA: Intelligent Visual Question Answering
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	14:20 - 14:35	Developing a Smart PACS: CBIR System Using Deep Learning
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	14:35 - 14:50	Multi Color Channel vs. Multi Spectral Band representations for texture classification
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	14:50 - 15:05	Multi-task learning for supervised and unsupervised classification of Grocery Images
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	15:05 - 15:50	Keynote: Arnold WM Smeulders - At the end of content-based image search
[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	15:50 - 16:00	Closing speech
[WS19 - EgoApp] Applications of Egocentric Vision	14:00 - 14:10	Welcome from organizers and opening remarks

[WS19 - EgoApp] Applications of Egocentric Vision	14:10 - 15:00	Keynote: Danica Kragic - Vision for action and interaction: from grasping to HRI
[WS19 - EgoApp] Applications of Egocentric Vision	15:00 - 16:00	Oral Session 15:00 - 15:20 Camera Ego-Positioning Using Sensor Fusion and Complementary Method 15:20 - 15:40 ATSal: An Attention Based Architecture for Saliency Prediction in 360 Videos 15:40 - 16:00 Rescue Dog Action Recognition by Integrating Ego-centric Video, Sound and Sensor Information
[WS19 - EgoApp] Applications of Egocentric Vision	16:00 - 16:50	Keynote: Walterio Mayol-Cuevas - Egocentric Vision from early works to future possibilities
[WS19 - EgoApp] Applications of Egocentric Vision	17:00 - 17:40	Oral Session 17:00 - 17:20 Understanding Event Boundaries for Egocentric Activity Recognition from Photo-Streams 17:20 - 17:40 Egomap: Hierarchical First-person Semantic Mapping
[WS19 - EgoApp] Applications of Egocentric Vision	17:40 - 17:45	Closing remarks
[WS20 - ETTAC] Eye Tracking Techniques, Applications and Challenges	14:00 - 14:10	Welcome by the workshop organizers
[WS20 - ETTAC] Eye Tracking Techniques, Applications and Challenges	14:10 - 14:55	Keynote speech: Olivier Le Meur - Eye-Movement Patterns and Viewing Biases During Visual Scene Processing
[WS20 - ETTAC] Eye Tracking Techniques, Applications and Challenges	14:55 - 16:15	SESSION 1: GAZE DATA ACQUISITION AND INTERPRETATION 14:55 - 15:15 Ultrasound for Gaze Estimation 15:15 - 15:35 Synthetic Gaze Data Augmentation for Improved User Calibration 15:35 - 15:55 Eye Movement Classification With Temporal Convolutional Networks 15:55 - 16:15 A Web-Based Eye Tracking Data Visualization Tool
[WS20 - ETTAC] Eye Tracking Techniques, Applications and Challenges	16:15 - 17:55	SESSION 2: APPLICATIONS AND USER STUDIES 16:15 - 16:35 Influence of Peripheral Vibration Stimulus on Viewing and Response Actions 16:35 - 16:55 Judging Qualification, Gender, and Age of Observer Based on Gaze Patterns When Looking at Faces 16:55 - 17:15 Predicting Reading Speed From Eye-Movement Measures 17:15 - 17:35 Investigating the Effect of Inter-Letter Spacing Modulation on Data-Driven Detection of Developmental Dyslexia Based on Eye-Movement Correlates of Reading: A Machine Learning Approach 17:35 - 17:55 Gaze Stability During Ocular Proton Therapy: Quantitative Evaluation Based on Eye Surface Surveillance Videos
[WS20 - ETTAC] Eye Tracking Techniques, Applications and Challenges	17:55 - 18:00	Closing remarks by the workshop organizers
[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	14:00 - 14:10	Welcome and opening
[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	14:10 - 15:30	Four Invited Talks (20 minutes each)
[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	15:30 - 16:00	Coffee break
[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	16:00 - 17:20	Four Invited Talks (20 minutes each)
[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	17:20 - 17:50	Group discussion session
[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	17:50 - 18:00	Closing remarks
[WS23 - W4PR] Women at ICPR 2020	16:00 - 16:10	Welcome
[WS23 - W4PR] Women at ICPR 2020	16:10 - 16:30	Invited Talk: Ingela Nyström - Towards Equal Opportunities in Academia - Experiences and Lessons Learned internationally and at Uppsala University
[WS23 - W4PR] Women at ICPR 2020	16:30 - 16:55	Breakout Discussion and Plenary 1
[WS23 - W4PR] Women at ICPR 2020	16:55 - 17:15	Invited Talk: Linda O'Gorman - A Brief Look at the Evolution of the Role of Women in the IAPR
[WS23 - W4PR] Women at ICPR 2020	17:15 - 17:40	Breakout Discussion and Plenary 2
[WS23 - W4PR] Women at ICPR 2020	17:40 - 18:10	Panel Discussion: Recent successes and upcoming challenges for women in a male-dominated industry/discipline
[WS23 - W4PR] Women at ICPR 2020	18:10 - 18:15	Closing remarks
[WS32 - IML] Industrial Machine Learning	12:00 - 12:15	Initial greatings from the organizing committee
[WS32 - IML] Industrial Machine Learning	12:15 - 13:00	Invited Talk: Emanuele Frontoni - From Predictive Maintenance to Design Support Systems: how ML is supporting Industrial processes
[WS32 - IML] Industrial Machine Learning	13:00 - 13:15	Localisation of defects in volumetric Computed Tomography scans of valuable wood logs
[WS32 - IML] Industrial Machine Learning	13:15 - 13:35	Spotlights - session 1
[WS32 - IML] Industrial Machine Learning	13:35 - 13:50	Real-time Cross-dataset Quality Production Assessment in Industrial Laser Cutting Machines
[WS32 - IML] Industrial Machine Learning	13:50 - 14:10	Spotlights - session 2
[WS32 - IML] Industrial Machine Learning	14:10 - 14:55	Invited Talk
[WS32 - IML] Industrial Machine Learning	14:55 - 15:15	Coffee Break
[WS32 - IML] Industrial Machine Learning	15:15 - 16:00	Invited Talk
[WS32 - IML] Industrial Machine Learning	16:00 - 16:20	Spotlights - session 3
[WS32 - IML] Industrial Machine Learning	16:20 - 16:35	Evaluation of Edge Platforms for Deep Learning in Computer Vision
[WS32 - IML] Industrial Machine Learning	16:35 - 16:55	Spotlights - session 4

[WS32 - IML] Industrial Machine Learning	16:55 - 17:10	PaDiM: a Patch Distribution Modeling framework for anomaly detection and localization
[WS32 - IML] Industrial Machine Learning	17:10 - 17:30	Spotlights - session 5
[WS32 - IML] Industrial Machine Learning	17:30 - 18:00	Closing remarks

10th JANUARY DAY SCHEDULING		
SCHEDULE	**WORKSHOP**	**CONTENT**
12:00 - 12:05	[WS02 - MAES] Machine Learning Advances Environmental Science]	Welcome from the Chairs
12:00 - 12:05	[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	Introduction
12:00 - 12:10	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	Introduction to workshop form the Organizers
12:00 - 12:10	[WS12 - 3DHU] 3D Human Understanding	Welcome
12:00 - 12:10	[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	Opening Remarks
12:00 - 12:15	[WS06 - AIDP] Artificial Intelligence for Digital Pathology	Opening
12:00 - 12:15	[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	Opening
12:00 - 12:15	[WS32 - IML] Industrial Machine Learning	Initial greatings from the organizing committee
12:00 - 12:20	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	Invited Talk: Xavier Alameda-Pineda - Combining auditory and visual data to enhance the speech signal
12:05 - 12:35	[WS02 - MAES] Machine Learning Advances Environmental Science]	Invited Talk: Friedrich Recknagel - Harnessing big environmental data by Machine Learning
12:05 - 13:05	[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	Session 1 Oral Presentation 12:05 - 12:25 Towards Robust Deep Neural Networks for Affect and Depression Recognition from Speech 12:25 - 12:45 Deep Learning Approach to Automated Detection of Dyslexia-Dysgraphia 12:45 - 13:05 A New Facial Expression Processing System for an Affectively Aware Hospital Robot
12:10 - 12:40	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	Keynote speech: Frédéric Bosché - Recent advances in automation in construction,
12:10 - 12:50	[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	Keynote speaker (Guoying Zhao) + discussion
12:10 - 12:55	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	Keynote: Alberto Del Bimbo - Garment Recommendation from fashion collections using Memory Augmented Neural Networks
12:10 - 13:00	[WS12 - 3DHU] 3D Human Understanding	Invited speaker: Dr. Federico Tombari - 3D Object Understanding with Less Annotation
12:15 - 13:00	[WS32 - IML] Industrial Machine Learning	Invited Talk: Emanuele Frontoni - From Predictive Maintenance to Design Support Systems: how ML is supporting Industrial processes
12:15 - 13:15	[WS06 - AIDP] Artificial Intelligence for Digital Pathology	Invited Talk: Nasir Rajpoot
12:15 - 13:15	[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	Invited Talk: Nico Karssemeijer - AI applications for early detection and diagnosis of breast cancer
12:20 - 12:40	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	ODANet: Online Deep Appearance Network for Identity-Consistent Multi-Person Tracking
12:35 - 12:45	[WS02 - MAES] Machine Learning Advances Environmental Science]	Natural Disaster Classification using Aerial Photography Explainable for Typhoon Damaged Feature
12:40 - 13:00	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	Clutter Slices Approach for Identification-on-the-fly of Indoor Spaces
12:40 - 13:00	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	Explainable Model Selection of a Convolutional Neural Network for Driver's Facial Emotion Identication
12:45 - 12:55	[WS02 - MAES] Machine Learning Advances Environmental Science]	Developing a Segmentation Model for Microscopic Images of Microplastics Isolated from Clams
12:50 - 13:40	[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	Action Recognition Session 12:50 - 13:05 Slow Feature Subspace for Action Recognition 13:05 – 13:20 Nonlinear temporal correlation based network for action recognition 13:20 – 13:30 Spatial Temporal Transformer Network for Skeleton-based Action Recognition 13:30 – 13:40 Deformable Convolutional LSTM for Human Body Emotion Recognition

Time	Workshop	Title
12:55 - 13:05	[WS02 - MAES] Machine Learning Advances Environmental Science]	Environment Object Detection for Marine ARGO Drone by Deep Learning
12:55 - 13:10	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	Content based image retrieval and Semantic Gap in the Deep Learning Era
13:00 - 13:20	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	Salient object detection with pretrained Deeplab and k-means: Application to UAV-captured building imagery
13:00 - 13:20	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	Articial Kindness – The Italian Case of Google Mini Recognition Patterns
13:00 - 13:50	[WS12 - 3DHU] 3D Human Understanding	P1 - Paper session 1: 13:00 - 13:10 Towards generalization of Human Pose estimation in the wild. 13:10 - 13:30 A novel joint points and silhouette-based method to estimate 3D human pose and shape. 13:30 - 13:50 3D Human Pose Estimation based on Multi-Input Multi-Output CNN and Event Cameras: proof of concept on the DHP19 dataset.
13:00 - 13:15	[WS32 - IML] Industrial Machine Learning	Localisation of defects in volumetric Computed Tomography scans of valuable wood logs
13:05 - 13:35	[WS02 - MAES] Machine Learning Advances Environmental Science]	Invited Talk: Michele Scardi - 25 years of Machine Learning applications in marine ecology: a personal perspective
13:05 - 13:45	[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	Session 2: Poster Presentation 13:05 - 13:15 Multi-stream Integrated Neural Networks for Facial Expression-based Pain Recognition 13:15 - 13:25 COVID - 19 and Mental Health/Substance Use Disorders on Reddit: A Longitudinal Study 13:25 - 13:35 Classification of Autism Spectrum Disorder Across Age using Questionnaire and Demographic Information 13:35 - 13:45 Longitudinal Classification of Mental Effort Using Electrodermal Activity, Heart Rate, and Skin Temperature Data from a Wearable Sensor
13:10 - 13:25	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	A Modality Converting Approach for Image Annotation to Overcome the Inconsistent Labels in Training Data
13:15 - 13:35	[WS06 - AIDP] Artificial Intelligence for Digital Pathology	Noise-Robust Training of Segmentation model using Knowledge Distillation
13:15 - 13:35	[WS32 - IML] Industrial Machine Learning	Spotlights - session 1
13:15 - 14:30	[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	Oral session I - Disease diagnosis and prediction 13:15 - 13:30 Predictive Medicine Using Interpretable Recurrent Neural Networks 13:30 - 13:45 Length of Stay Prediction for Northern Italy COVID - 19 Patients based on Lab Tests and X-Ray Data 13:45 - 14:00 Advanced Non-Linear Generative Model with a Deep Classifier for Immunotherapy Outcome Prediction: A Bladder Cancer Case Study 14:00 - 14:15 Double Encoder-Decoder Networks for Gastrointestinal Polyp Segmentation 14:15 - 14:30 Organ Segmentation with Recursive Data Augmentation for Deep Models
13:20 - 13:40	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	Image Segmentation of Bricks in Masonry Wall Using a Fusion of Machine Learning Algorithms
13:20 - 13:40	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	Fingerspelling recognition with two-steps cascade process of spotting and classication
13:25 - 13:40	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	Iconic-based Retrieval of Grocery Images via Siamese Neural Network
13:35 - 13:50	[WS32 - IML] Industrial Machine Learning	Real-time Cross-dataset Quality Production Assessment in Industrial Laser Cutting Machines
13:40 - 13:50	[WS02 - MAES] Machine Learning Advances Environmental Science]	Environmental Time Series Prediction with Missing Data by Machine Learning and Dynamics Reconstruction
13:40 - 13:50	[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	Coffee Break
13:40 - 13:50	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	Break
13:40 - 14:00	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	Automatic MEP Component Detection with Deep Learning
13:40 - 14:00	[WS06 - AIDP] Artificial Intelligence for Digital Pathology	Semi-supervised learning with a teacher-student paradigm for histopathology classification: a resource to face data heterogeneity and lack of local annotations
13:40 - 14:00	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	Invited Talk: Dilana Hazer-Rau - Affective Computing and Stress Recognition for Healthcare Application
13:45 - 14:15	[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	Keynote: Rosalind Picard - How can a wristband with AI help improve brain health?
13:45 - 14:00	[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	Opening
13:50 - 14:00	[WS02 - MAES] Machine Learning Advances Environmental Science]	Semi-Supervised Learning for Grain Size Distribution Interpolation, Konstantin Kobs

13:50 - 14:05	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	Recent Advances in Video Question Answering: A Review of Datasets and Methods
13:50 - 14:10	[WS32 - IML] Industrial Machine Learning	Spotlights - session 2
13:50 - 14:35	[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	Facial Expression Recognition Session 13:50 – 14:05 Motion Attention Deep Transfer Network for Cross-Database Micro-Expression Recognition 14:05 – 14:20 Classification Mechanism of Convolutional Neural Network for Facial Expression Recognition 14:20 – 14:35 Applying delauney triangulation augmentation for deep learning facial expression generation and recognition
13:50 - 14:00	[WS12 - 3DHU] 3D Human Understanding	Break
14:00 - 14:05	[WS11 MadiMA] Multimedia Assisted Dietary Management	Workshop opening and welcome
14:00 - 14:10	[WS02 - MAES] Machine Learning Advances Environmental Science]	Location-specific vs location-agnostic machine learning metamodels for predicting pasture nitrogen response rate
14:00 - 14:10	[WS04 - PRRS] Pattern Recognition in Remote Sensing	Welcome
14:00 - 14:10	[WS19 - EgoApp] Applications of Egocentric Vision	Welcome from organizers and opening remarks
14:00 - 14:10	[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	Welcome and opening
14:00 - 14:15	[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	Introduction
14:00 - 14:20	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	Demand Flexibility Estimation Based on Habitual Behaviour and Motif Detection
14:00 - 14:20	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	CNN Depression Severity Level Estimation from Upper Body vs. Face-Only Images
14:00 - 15:00	[WS12 - 3DHU] 3D Human Understanding	P2 - Paper Session 2 14:00 - 14:20 Image-based Out-of-Distribution-Detector Principles on Graph-based Input Data in Human Action Recognition. 14:20 – 14:40 Pose Based Trajectory Forecast of Vulnerable Road Users Using Recurrent Neural Networks. 3D Human Understanding2:40 - 2:50 Space-Time Triplet Loss Network for Dynamic 3D Face Verification. 14:50 - 15:00 Subject Identification Across large expression variations using 3D facial landmarks.
14:00 - 14:10	[WS20 - ETTAC] Eye Tracking Techniques, Applications and Challenges	Welcome by the workshop organizers
14:00 - 14:40	[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	Keynote: H. Gunes - Creating technology with socio-emotional intelligence
14:05 - 14:20	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	IQ-VQA: Intelligent Visual Question Answering
14:05 - 14:25	[WS06 - AIDP] Artificial Intelligence for Digital Pathology	Self-Attentive Adversarial Stain Normalization
14:05 - 14:45	[WS11 MadiMA] Multimedia Assisted Dietary Management	Invited Talk: Anastasios Delopoulos - BigO: Big Behavioural data against childhood obesity
14:10 - 14:20	[WS02 - MAES] Machine Learning Advances Environmental Science]	Pattern Classification from Multi-Beam Acoustic Data Acquired in Kongsfjorden
14:10 - 14:55	[WS20 - ETTAC] Eye Tracking Techniques, Applications and Challenges	Keynote speech: Olivier Le Meur - Eye-Movement Patterns and Viewing Biases During Visual Scene Processing
14:10 - 14:55	[WS32 - IML] Industrial Machine Learning	Invited Talk
14:10 - 15:00	[WS04 - PRRS] Pattern Recognition in Remote Sensing	Keynote: Bertrand Le Saux - Beyond labels: semi-supervised and continual learning for Earth observation
14:10 - 15:00	[WS19 - EgoApp] Applications of Egocentric Vision	Keynote: Danica Kragic - Vision for action and interaction: from grasping to HRI
14:10 - 15:30	[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	Four Invited Talks (20 minutes each)
14:15 - 14:45	[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	Keynote: Jiebo Luo - Intelligent Monitoring of Individual and Population Mental Health using Social Media Data
14:15 - 15:15	[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	Invited Talk: Micheal Jenkin - Working with Robots at Depth
14:20 - 14:30	[WS02 - MAES] Machine Learning Advances Environmental Science]	Break
14:20 - 14:35	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	Developing a Smart PACS: CBIR System Using Deep Learning
14:20 - 14:40	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	Sentinel-2 and SPOT-7 Images in Machine Learning Frameworks for SuperResolution

14:20 - 14:40	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	Range-Doppler Hand Gesture Recognition using Deep Residual-3DCNN with Transformer Network
14:30 - 14:40	[WS02 - MAES] Machine Learning Advances Environmental Science]	Unsupervised classification of acoustic echoes from two krill species in the Southern Ocean (Ross Sea)
14:30 - 14:50	[WS06 - AIDP] Artificial Intelligence for Digital Pathology	Certainty Pooling for Multiple Instance Learning
14:30 - 15:30	[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	Poster session I - Medical image segmentation and classification (Poster presentations are made in parallel) - Medical Image Tampering Detection: a New Dataset and Baseline -Deep Learning for Human Embryo Classification at the Cleavage Stage (Day 3) - A Superpixel-wise Fully Convolutional Neural Network Approach for Diabetic Foot Ulcer Tissue Classification - Fully vs. Weakly Supervised Caries Localization in Smartphone Images with CNNs - Pollen Grain Microscopic Image Classification Using an Ensemble of Fine-Tuned Deep Convolutional Neural Networks - Active Surface for Fully 3D Automatic Segmentation - Penalizing small errors using an Adaptive Logarithmic Loss - Exploiting Saliency in Attention based Convolutional Neural Network for classfication of Vertical Root Fractures - UIP-net: a Decoder-Encoder CNN for the Detection and Quantification of Usual Interstitial Pneumoniae Pattern in Lung CT Scan Images - Don't Tear Your Hair Out: Analysis of the Impact of Skin Hair on the Diagnosis of Microscopic Skin Lesions - Deep Learning Based Segmentation of Breast Lesions in DCE-MRI
14:35 - 14:45	[WS13 - FBE] Facial and Body Expressions, micro-expressions and behavior recognition	Closing Remarks
14:35 - 14:50	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	Multi Color Channel vs. Multi Spectral Band representations for texture classification
14:40 - 14:50	[WS02 - MAES] Machine Learning Advances Environmental Science]	Multi-Input ConvLSTM for Flood Extent Prediction
14:40 - 15:00	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	Road tracking in semi-structured environments using spatial distribution of Lidar data
14:40 - 15:00	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	Invited Talk: Steffen Walter - Multimodal Automatic Pain Recognition / Machine Learning
14:40 - 16:00	[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	Session 1 14:40 - 14:55 Multimodal Physiological-based Emotion Recognition 14:55 - 15:10 Combining deep and unsupervised features for multilingual speech emotion recognition 15:10 - 15:25 Towards Generating Topic-driven and Affective Responses to assist Mental Wellness 15:25 - 15:40 Keypoint-Based Gaze Tracking 15:40 - 15:50 Multimodal Empathic Feedback Through a Virtual Character (short paper) 15:50 - 16:00 A WebGL virtual reality exergame for assessing the cognitive capabilities of elderly people: a study about digital autonomy for web-based applications (short paper)
14:45 - 15:00	[WS11 MadiMA] Multimedia Assisted Dietary Management	Assessing Individual Dietary Intake in Food Sharing Scenarios with Food and Human Pose Detection
14:45 - 15:30	[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	Session 3: Oral Presentation 14:45 - 15:05 Pain Intensity Assessment in Sickle Cell Disease patients using Vital Signs during Hospital Visits 15:05 - 15:25 Neonatal pain scales and human visual perception: An exploratory analysis based on facial expression recognition and eye-tracking
14:50 - 15:00	[WS02 - MAES] Machine Learning Advances Environmental Science]	A machine learning approach to chlorophyll a time series analysis in the Mediterranean Sea
14:50 - 15:05	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	Multi-task learning for supervised and unsupervised classification of Grocery Images
14:55 - 15:15	[WS06 - AIDP] Artificial Intelligence for Digital Pathology	Classification of noisy free-text prostate cancer pathology reports using natural language processing
14:55 - 15:15	[WS32 - IML] Industrial Machine Learning	Coffee Break
14:55 - 16:15	[WS20 - ETTAC] Eye Tracking Techniques, Applications and Challenges	SESSION 1: GAZE DATA ACQUISITION AND INTERPRETATION 14:55 - 15:15 Ultrasound for Gaze Estimation 15:15 - 15:35 Synthetic Gaze Data Augmentation for Improved User Calibration 15:35 - 15:55 Eye Movement Classification With Temporal Convolutional Networks 15:55 - 16:15 A Web-Based Eye Tracking Data Visualization Tool
15:00 - 15:10	[WS02 - MAES] Machine Learning Advances Environmental Science]	Plankton recognition in images with varying size
15:00 - 15:15	[WS11 MadiMA] Multimedia Assisted Dietary Management	UEC-FoodPix Complete: A Large-scale Food Image Segmentation Dataset
15:00 - 15:20	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	Mixed RealityBased Dataset Generation for Learning-Based Scan-to-BIM
15:00 - 15:20	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	Introducing Bidirectional Ordinal Classier Cascades Based on a Pain Intensity Recognition Scenario
15:00 - 15:50	[WS12 - 3DHU] 3D Human Understanding	Invited Talk 2: Prof. Anup Basu - Perceptually Guided transmission of 3D Humans
15:00 - 16:00	[WS19 - EgoApp] Applications of Egocentric Vision	Oral Session 15:00 - 15:20 Camera Ego-Positioning Using Sensor Fusion and Complementary Method 15:20 - 15:40 ATSal: An Attention Based Architecture for Saliency Prediction in 360 Videos 15:40 - 16:00 Rescue Dog Action Recognition by Integrating Ego-centric Video, Sound and Sensor Information
15:05 - 15:50	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	Keynote: Arnold WM Smeulders - At the end of content-based image search

15:10 - 15:20	[WS02 - MAES] Machine Learning Advances Environmental Science]	Finding Relevant Flood Images on Twitter using Content-based Filters
15:10 - 16:30	[WS04 - PRRS] Pattern Recognition in Remote Sensing	Q&A Session 1 (pre-recorded videos + live Q&A) - Remembering Both the Machine and the Crowd when Sampling Points: Active Learning for Semantic Segmentation of ALS Point Clouds - Towards Urban Tree Recognition in Airborne Point Clouds with Deep 3D Single-Shot Detectors - Shared-space Autoencoders with Randomized Skip Connections for Building Footprint Detection with Missing Views
15:15 - 15:20	[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	Break
15:15 - 15:30	[WS11 MadiMA] Multimedia Assisted Dietary Management	Analysis of Chewing Signals Based on Chewing Detection Using Proximity Sensor for Diet Monitoring
15:15 - 16:00	[WS32 - IML] Industrial Machine Learning	Invited Talk
15:20 - 15:30	[WS02 - MAES] Machine Learning Advances Environmental Science]	Unsupervised Learning of High Dimensional Environmental Data Using Local Fractality Concept
15:20 - 15:40	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	An Augmented Reality-based Remote Collaboration Platform for Worker Assistance
15:20 - 15:40	[WS06 - AIDP] Artificial Intelligence for Digital Pathology	AI slipping on tiles: data leakage in digital pathology
15:20 - 15:40	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	Personalized k-fold Cross-validation Analysis with Transfer from phasic to tonic Pain Recognition on X-ITE Pain Database
15:20 - 16:20	[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	Technical talks: Underwater Robotics 15:20 - 15:40 Deep Sea Robotic Imaging Simulator 15:40 - 16:00 Optimization of Multi-LED Setups for Underwater Robotic Vision Systems 16:00 - 16:20 Learning Visual Free Space Detection for Deep-Diving Robots
15:30 - 15:40	[WS02 - MAES] Machine Learning Advances Environmental Science]	Spatiotemporal Air Quality Inference of Low-Cost Sensor Data; Application on a Cycling Monitoring Network
15:30 - 15:45	[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	Coffee break
15:30 - 15:45	[WS11 MadiMA] Multimedia Assisted Dietary Management	Recognition of food-texture attributes using an in-ear microphone
15:30 - 16:00	[WS08 - CAIHA] Computational and Affective Intelligence in Healthcare Applications for Vulnerable Populations	Final Session: Fireside Chat, Chris Wright - AI for Good Mental Health
15:30 - 16:00	[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	Coffee break
15:40 - 15:50	[WS02 - MAES] Machine Learning Advances Environmental Science]	How do Deep Convolutional SDM trained on satellite images unravel vegetation ecology?
15:40 - 16:00	[WS03 - PRAConBE] Pattern Recognition and Automation in Construction & the Built Environment	Discussion and closing remarks
15:40 - 16:00	[WS06 - AIDP] Artificial Intelligence for Digital Pathology	Discussion and closing
15:40 - 16:00	[WS15 - MPRSS] Multimodal pattern recognition for social signal processing in human computer interaction	Invited Talk: Mariofanna Milanova - Deep Learning and Multiple Data Types Analysis
15:45 - 16:00	[WS11 MadiMA] Multimedia Assisted Dietary Management	Analysis of Traditional Italian Food Recipes: Experiments and Results
15:45 - 17:00	[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	Oral session II - Mental disease assessment and assisted surgery 15:45 - 16:00 A Comparative Study on Autism Spectrum Disorder Detection via 3D Convolutional Neural Networks 16:00 - 16:15 Handwriting-based classifier combination for Cognitive Impairment prediction 16:15 - 16:30 A Lightweight Spatial Attention Module with Adaptive Receptive Fields in 3D Convolutional Neural Network for Alzheimer's Disease Classification 16:30 - 16:45 Sinc-based convolutional neural networks for EEG-BCI-based motor imagery classification 16:45 - 17:00 Deep Attention Based Semi-Supervised 2D-Pose Estimation for Surgical Instruments
15:50 - 14:00	[WS12 - 3DHU] 3D Human Understanding	Closing
15:50 - 16:00	[WS02 - MAES] Machine Learning Advances Environmental Science]	Closing remarks
15:50 - 16:00	[WS17 - VITIUR = CBIR/TAILOR/VIQA] Visual-Textual Image Understanding and Retrieval	Closing speech
16:00 - 16:05	[WS11 MadiMA] Multimedia Assisted Dietary Management	Break
16:00 - 16:20	[WS32 - IML] Industrial Machine Learning	Spotlights - session 3
16:00 - 16:50	[WS19 - EgoApp] Applications of Egocentric Vision	Keynote: Walterio Mayol-Cuevas - Egocentric Vision from early works to future possibilities
16:00 - 17:20	[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	Four Invited Talks (20 minutes each)
16:00 - 16:10	[WS23 - W4PR] Women at ICPR 2020	Welcome

16:00 - 16:15	[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	Break
16:05 - 16:45	[WS11 MadiMA] Multimedia Assisted Dietary Management	Invited Talk: Benny Lo - An innovative passive dietary monitoring system
16:10 - 16:30	[WS23 - W4PR] Women at ICPR 2020	Invited Talk: Ingela Nyström - Towards Equal Opportunities in Academia - Experiences and Lessons Learned internationally and at Uppsala University
16:15 - 17:55	[WS20 - ETTAC] Eye Tracking Techniques, Applications and Challenges	SESSION 2: APPLICATIONS AND USER STUDIES 16:15 - 16:35 Influence of Peripheral Vibration Stimulus on Viewing and Response Actions 16:35 - 16:55 Judging Qualification, Gender, and Age of Observer Based on Gaze Patterns When Looking at Faces 16:55 - 17:15 Predicting Reading Speed From Eye-Movement Measures 17:15 - 17:35 Investigating the Effect of Inter-Letter Spacing Modulation on Data-Driven Detection of Developmental Dyslexia Based on Eye-Movement Correlates of Reading: A Machine Learning Approach 17:35 - 17:55 Gaze Stability During Ocular Proton Therapy: Quantitative Evaluation Based on Eye Surface Surveillance Videos
16:15 - 16:55	[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	Keynote: A. Gaggioli - Positive Technology: designing digital experiences for positive change
16:20 - 16:25	[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	Break
16:20 - 16:35	[WS32 - IML] Industrial Machine Learning	Evaluation of Edge Platforms for Deep Learning in Computer Vision
16:25 - 16:45	[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	Technical talks: Underwater Image Enhancement 16:25 - 16:45 Removal of Floating Particles from Underwater Images Using Image Transformation Networks
16:25 - 17:25	[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	Technical talks: Species Classification and Enumeration 16:45 - 17:05 Video-based Hierarchical Species Classification for Longline Fishing Monitoring 17:05 - 17:25 Robust Fish Enumeration by Multiple Object Tracking in Overhead Videos
16:30 - 16:50	[WS04 - PRRS] Pattern Recognition in Remote Sensing	Break
16:30 - 16:55	[WS23 - W4PR] Women at ICPR 2020	Breakout Discussion and Plenary 1
16:35 - 16:55	[WS32 - IML] Industrial Machine Learning	Spotlights - session 4
16:45 - 17:00	[WS11 MadiMA] Multimedia Assisted Dietary Management	Partially Supervised Multi-Task Network for Single-View Dietary Assessment
16:50 - 17:50	[WS04 - PRRS] Pattern Recognition in Remote Sensing	Q&A Session 2 (pre-recorded videos + live Q&A) - Using a binary diffractive optical element to increase the imaging system depth of field in UAV remote sensing tasks - Self-supervised pre-training enhances change detection in Sentinel-2 imagery - Early and Late Fusion of Multiple Modalities in Sentinel Imagery and Social Media Retrieval
16:55 - 17:10	[WS32 - IML] Industrial Machine Learning	PaDiM: a Patch Distribution Modeling framework for anomaly detection and localization
16:55 - 18:05	[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	Session 2 16:55 - 17:10 Daily Living Activity Recognition Using Wearable Devices: A Features-rich Dataset and a Novel Approach 17:10 - 17:25 Deep Neural Networks for real-time remote fall detection 17:27 - 17:40 Mutual use of semantics and geometry for CNN-based object localization in ToF images 17:40 - 17:55 Development and evaluation of a mouse emulator using multi-modal real-time head tracking systems with facial gesture recognition as a switching mechanism 17:55 - 18:05 A Video-Based MarkerLess Body Machine Interface: a Pilot Study (short paper)
16:55 - 17:15	[WS23 - W4PR] Women at ICPR 2020	Invited Talk: Linda O'Gorman - A Brief Look at the Evolution of the Role of Women in the IAPR
17:00 - 17:15	[WS11 MadiMA] Multimedia Assisted Dietary Management	Event Mining Driven Context-Aware Personal Food Preference Modelin
17:00 - 17:40	[WS19 - EgoApp] Applications of Egocentric Vision	Oral Session 17:00 - 17:20 Understanding Event Boundaries for Egocentric Activity Recognition from Photo-Streams 17:20 - 17:40 Egomap: Hierarchical First-person Semantic Mapping
17:00 - 18:00	[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	Poster session II - Healthcare applications (Poster presentations are made in parallel) - Automated detection of adverse drug events from older patients' electronic medical records using text mining - Multi-model ensemble to classify acute lymphoblastic leukemia in blood smear images - MIINet: An Image Quality Improvement Framework for Supporting Medical Diagnosis - Fall detection and recognition from egocentric visual data: A case study - Development of an Augmented Reality system based on marker - Towards Stroke Patients' Upper-limb Automatic Motor Assessment Using Smartwatches - Multimodal Detection of Tonic-Clonic Seizures based on 3D Acceleration and Heart Rate Data from an In-Ear Sensor - Deep learning detection of cardiac akinesis in echocardiograms - Prediction of minimally conscious state responder patients to non-invasive brain stimulation using machine learning algorithms - An analysis of tasks and features for neuro-degenerative disease assessment by handwriting - A Multi Classifier Approach for Supporting Alzheimer's Diagnosis Based on Handwriting Analysis
17:10 - 17:30	[WS32 - IML] Industrial Machine Learning	Spotlights - session 5
17:15 - 17:30	[WS11 MadiMA] Multimedia Assisted Dietary Management	Food Recognition in the Presence of Label Noise
17:15 - 17:40	[WS23 - W4PR] Women at ICPR 2020	Breakout Discussion and Plenary 2
17:20 - 17:50	[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	Group discussion session
17:25 - 17:30	[WS01- CVAUI] Computer Vision for Analysis of Underwater Imagery	Closing Remarks
17:30 - 17:45	[WS11 MadiMA] Multimedia Assisted Dietary Management	S2ML-TL Framework for Multi-label Food Recognition
17:30 - 18:00	[WS32 - IML] Industrial Machine Learning	Closing remarks
17:40 - 17:45	[WS19 - EgoApp] Applications of Egocentric Vision	Closing remarks
17:40 - 18:10	[WS23 - W4PR] Women at ICPR 2020	Panel Discussion: Recent successes and upcoming challenges for women in a male-dominated industry/discipline
17:45 - 18:00	[WS11 MadiMA] Multimedia Assisted Dietary Management	Visual Aware Hierarchy Based Food Recognition

17:50 - 18:00	[WS04 - PRRS] Pattern Recognition in Remote Sensing	Final remarks
17:50 - 18:00	[WS22 - PaMMO] Perception and Modelling for Manipulation of Objects	Closing remarks
17:55 - 18:00	[WS20 - ETTAC] Eye Tracking Techniques, Applications and Challenges	Closing remarks by the workshop organizers
18:00	[WS07 - AIHA] Artificial Intelligence for Healthcare Applications	Closing
18:05 - 18:15	[WS09 - CARE] PR for positive teChnology And eldeRly wEllbeing	Closing
18:10 - 18:15	[WS23 - W4PR] Women at ICPR 2020	Closing remarks