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MONDAY NOVEMBER 26

Plenary Talk 1 (9:00-10:00, 26.11, Chair: Karen Egiazarian)

Consciousness of Stream: Perceptually Optimizing Global Video

Alan Bovik, Laboratory for Image and Video Engineering (LIVE), The University of Texas at Austin

Oral Session 1.1 : Quality and Performance Assessment (10:30-12:10, 26.11, Chair: Azeddine Beghdadi)

DEIMEQ - A DEEP NEURAL NETWORK BASED HYBRID NO-REFERENCE IMAGE QUALITY MODEL

Steve Goering (TU Ilmenau, Germany), Alexander Raake, (TU Ilmenau, Germany)

BLIND DCT-BASED PREDICTION OF IMAGE DENOISING EFFICIENCY USING NEURAL NETWORKS

Oleksii Rubel (National Aerospace University KhAI, Ukraine), Andrii Rubel (National Aerospace University KhAI, Ukraine), Vladimir Lukin (National Aerospace University KhAI, Ukraine), Karen Egiazarian (Tampere University of Technology, Finland)

A PERFORMANCE EVALUATION FRAMEWORK FOR VIDEO STABILIZATION METHODS

Wilko Guilluy (L2TI, Université Paris 13, France), Azeddine Beghdadi (L2TI, Université Paris 13, France), Laurent Oudre (L2TI, Université Paris 13, France)

THE GAUSSIAN HYPOTHESIS IN SUBJECTIVE QUALITY EVALUATION FOR STEREOSCOPIC AND 2D VIDEO CONTENT

Rania Bensaïed (ARTEMIS, IMT-Telecom SudParis, France), Mihai Petru Mitrea (IMT-Telecom SudParis, France)

JOINT STATISTICAL MODELS FOR NO-REFERENCE STEREOSCOPIC IMAGE QUALITY ASSESSMENT

Zohaib Amjad Khan (L2TI, Université Paris 13, France), Mounir Kaaniche (L2TI, Université Paris 13, France), Azeddine Beghdadi (L2TI, Université Paris 13, France), Faouzi Alaya-Chekh (NTNU, Norway)

Oral Session 1.2 : Multi-view and omnidirectional encoding (13:30-14:30, 26.11, Chairs: Frederic Dufaux and Ioan Tabus)

GEOMETRY-GUIDED 3D DATA INTERPOLATION FOR PROJECTION-BASED DYNAMIC POINT CLOUD CODING

Vida Fakour Sevom (Tampere University of Technology, Finland), Sebastian Schwarz (Nokia Technologies, Finland), Moncef Gabbouj (Tampere University of Technology, Finland)

WASP: HIERARCHICAL WARPING, MERGING, AND SPARSE PREDICTION FOR LIGHT-TO-VIDEO IMAGE COMPRESSION

Pekka Astola (Tampere University of Technology, Finland), Ioan Tabus (Tampere University of Technology, Finland)

EFFICIENT VIDEO STREAMING OF 360 CAMERAS IN UNMANNED AERIAL VEHICLES: AN ANALYSIS OF REAL VIDEO SOURCES

Ludovico Ferranti (Northeastern University, U.S.A.); Stefania Colonnese (University of Rome La Sapienza, Italy), Francesca Cuomo (University of Rome La Sapienza, Italy), Tommaso Melodia (Northeastern University, U.S.A.)

Oral Session 1.3 : Deep Learning for Visual Information Processing (14:30-15:30, 26.11, Chair: Heikki Huttunen)

ON THE LAYER SELECTION IN SMALL-SCALE DEEP NETWORKS

Anton Muravev (Tampere University of Technology, Finland), Jenni Raitoharju (Tampere University of Technology, Finland), Moncef Gabbouj (Tampere University of Technology, Finland)

SEGMENTED AUTOENCODERS FOR UNSUPERVISED EMBEDDED HYPERSPECTRAL BAND SELECTION

Julius Tschannerl (University of Strathclyde, UK), Jinchang Ren (University of Strathclyde, UK), Jaime Zabalza (University of Strathclyde, UK), Stephen Marshall (University of Strathclyde, UK)

EMBEDDED IMPLEMENTATION OF A DEEP LEARNING SMILE DETECTOR

Pedram Ghazi (Tampere University of Technology, Finland), Antti Happonen (Tampere University of Technology, Finland), Jani Boutellier (Tampere University of Technology, Finland), Heikki Huttunen (Tampere University of Technology, Finland)

Poster Session 1 (16:00-17:00, 26.11, Chair: Sari Peltonen)

CHOICE OF THE PARAMETER FOR BM3D DENOISING ALGORITHM USING NO-REFERENCE METRIC

Andrey Krylov (Lomonosov Moscow State University, Russia), Nikolay Mamaev (Lomonosov Moscow State University, Russia), Dmitry Yurin (Lomonosov Moscow State University, Russia)

A HYBRID APPROACH TO HAND DETECTION AND TYPE CLASSIFICATION IN UPPER-BODY VIDEOS

Katerina Papadimitriou (University of Thessaly, Greece), Gerasimos Potamianos (University of Thessaly, Greece)

A NEURAL NETWORK-BASED APPROACH FOR PUBLIC TRANSPORTATION PREDICTION WITH TRAFFIC DENSITY MATRIX

Dancho Panovski (Telecom SudParis, France), Veronica Scurtu (Telecom SudParis, France), Titus Zaharia (IMT-Telecom SudParis, France)

THE CHALLENGES OF APPLYING DEEP LEARNING FOR HEMANGIOMA LESION SEGMENTATION

Jaime S. Cardoso (INESC Porto, Universidade do Porto, Portugal)

USING VISIBLE+NIR INFORMATION FOR CNN FACE RECOGNITION

Sanae Boutarfass (MIA laboratory, France), Bernard Besserer (MIA Laboratory, France)

BUILDING A LABELLED DATASET FOR RECOGNITION OF HANDBALL ACTIONS USING MASK R-CNN AND STIPS

Marina Ivacic-Kos (University of Rijeka, Croatia), Miran Pobar (University of Rijeka, Croatia)

DCT-TENSOR-NET FOR SOLAR FLARES DETECTION ON IRIS DATA

Denis Ullmann (University of Geneva, Switzerland), Svyatoslav Voloshynovskiy (University of Geneva, Switzerland), Lucia Kleint (FHNW, Switzerland), Sam Krucker (FHNW, Switzerland), Martin Melchior (FHNW, Switzerland), Cedric Huwyler (FHNW, Switzerland), Brandon Panos (FHNW, Switzerland)

VIRTUAL REALITY MEETS DEGAS: AN IMMERSIVE FRAMEWORK FOR ART EXPLORATION AND LEARNING

Federica Battisti (Roma Tre University, Italy), Chiara Di Stefano, (Independent researcher, Italy)

FASTER BOUNDING BOX ANNOTATION FOR OBJECT DETECTION IN INDOOR SCENES

Bishwo Adhikari (Tampere University of Technology, Finland), Jukka Peltomaki (Tampere University of Technology, Finland), Jussi Puura (Sandvik Mining and Construction Oyj, Finland), Heikki Huttunen (Tampere University of Technology, Finland)

CLASSIFICATION OF BUILDING INFORMATION MODEL (BIM) STRUCTURES WITH DEEP LEARNING

Francesco Lomio (Tampere University of Technology, Finland), Ricardo Farinha (Sweco Finland Ltd., Finland), Mauri Laasonen (Sweco Structures Ltd., Finland), Heikki Huttunen (Tampere University of Technology, Finland)

TUESDAY NOVEMBER 27

Plenary Talk 2 (9:00-10:00, 27.11, Chair: Ioan Tabus)

Sparse Modeling in Image Processing and Deep Learning

Michael Elad, Israel Institute of Technology

Oral Session 2.1 : Image Restoration and Enhancement (10:30-12:10, 27.11, Chairs: Vladimir Katkovnik and Karen Egiazarian)

TOWARDS PHYSICAL DISTORTION IDENTIFICATION AND REMOVAL IN DOCUMENT IMAGES

Tan Lu (VUB, Belgium), Ann Doots (VUB, Belgium)

PSEUDO SPECTRAL METHOD BASED ON SYMMETRIC EXTENSION

Izumi Ito (Tokyo Institute of Technology, Japan)

SALIENCY-ENHANCED ROBUST VISUAL TRACKING

Caglar Aytekin (Nokia Technologies, Finland), Francesco Cricri (Nokia Technologies, Finland), Emre Aksu (Nokia Technologies, Finland)

HIGH-PRECISION POLARIZATION MEASUREMENTS AND ANALYSIS FOR MACHINE VISION APPLICATIONS

Gary Atkinson (Bristol Robotics Laboratory, UK), Thomas Thornton (University of the West of England, UK), Demitri Peynado (University of the West of England, UK), Jorgen Ernst (Fraunhofer-Institut for Integrierte Schaltungen IIS, Germany)

OPTIMIZATION OF HYBRID OPTICS WITH MULTILEVEL PHASE MASK FOR IMPROVED DEPTH OF FOCUS BROADBAND IMAGING

Vladimir Katkovnik (Tampere University of Technology, Finland), Mykola Ponomarenko (Tampere University of Technology, Finland), Karen Egiazarian (Tampere University of Technology, Finland)

Plenary Talk 3 (13:30-14:30, 27.11, Chair: Chaker Larabi)

Patch-based regularization in hyperspectral imaging inverse problems

Jose Bioucas-Dias, Instituto de Telecomunicacoes, Universidade de Lisboa

Oral Session 2.2 : Color and Hyperspectral Imaging (14:30-15:30, 27.11, Chair: Vladimir Lukin)

RBF NEURAL NETWORK FOR LANDMINE DETECTION IN HYPERSPECTRAL IMAGING

Ihab Makki (Lebanese University, Lebanon), Jihan Khoder (Lebanese University, Lebanon), Rafic Younes (Lebanese University, Lebanon), Clovis Francis (Lebanese University, Lebanon), Mahdi Khoder (Politecnico di Torino, Italy), Tiziano Bianchi (Politecnico di Torino, Italy), Massimo Zucchetti (Politecnico di Torino, Italy), Patrick Rizk (Lebanese University, Lebanon)

DEEP METRIC LEARNING FOR COLOR DIFFERENCES

Fedor Zolotarev (Lappeenranta University of Technology, Finland), Arto Kaarna (Lappeenranta University of Technology, Finland)

CONTENT-COLOR-DEPENDENT SCREENING (CCDS) USING REGULAR OR IRREGULAR CLUSTERED-DOT HALFTONES

Altyngul Jumabayeva (Purdue University, U.S.A.), Tal Frank (Hewlett-Packard Indigo Division, Israel), Yotam Ben-Shoshan (Hewlett-Packard Indigo Division, Israel), Robert Ulichney (Hewlett-Packard Laboratories, U.S.A.), Jan Allebach (Purdue University, U.S.A.)

Poster Session 2 (16:00-17:00, 27.11, Chair: Federica Battisti)

JPEG BASED COMPRESSION OF DIGITAL HOLOGRAMS

Azza Ouled Zaid (Higher Institute of Computer Science (ISI), Tunisia), Frederic Dufaux (CNRS, France), Ines Bouzidi (National Engineering School of Tunis, Tunisia), Nada Chamakhi (Higher Institute of Computer Science, Tunisia)

VIEWPORT-AWARE OMNIDIRECTIONAL VIDEO STREAMING USING VISUAL ATTENTION AND DYNAMIC TILES

Cagri Ozcinar (Trinity College Dublin, Ireland), Julian Cabrera (Universidad Politecnica de Madrid, Spain), Aljosa Smolic (Trinity College Dublin, Ireland)

AN IMPROVEMENT OF BM3D IMAGE DENOISING AND DEBLURRING ALGORITHM BY GENERALIZED TOTAL VARIATION

Andrey Nasonov (Lomonosov Moscow State University, Russia), Andrey Krylov (Lomonosov Moscow State University, Russia)

AUTOMATIC 3D DETECTION AND SEGMENTATION OF HEAD AND NECK CANCER FROM MRI DATA

Baixaing Zhao (University of Strathclyde, UK), John Soraghan (University of Strathclyde, UK), Gaetano Di Caterina (University of Strathclyde, UK), Derek Grose (Beatson West of Scotland Cancer Centre, UK)

GRID WARPING POSTPROCESSING FOR LINEAR MOTION BLUR IN IMAGES

Andrey Nasonov (Lomonosov Moscow State University, Russia), Yakov Pchelintsev (Lomonosov Moscow State University, Russia), Andrey Krylov (Lomonosov Moscow State University, Russia)

DRIVER DROWSINESS DETECTION: A COMPARISON BETWEEN INTRUSIVE AND NON-INTRUSIVE SIGNAL ACQUISITION METHODS

Licínio Oliveira (Faculty of Engineering of the University of Porto, Portugal), Jaime S. Cardoso (INESC Porto, Universidade do Porto), André Lourenco (CardiolD), Christer Ahlström (Swedish National Road and Transport Research Institute (VTI))

TO SEE OR NOT TO SEE: DETERMINING THE RECOGNITION THRESHOLD OF ENCRYPTED IMAGES

Heinz Hofbauer (University of Salzburg, Austria), Florent Autrusseau (University of Nantes, France), Andreas Uhl (University of Salzburg, Austria)

A NOVEL HUMAN IDENTIFICATION METHOD BY GAIT USING DYNAMICS OF FEATURE POINTS AND LOCAL SHAPE FEATURES

Daisuke Imoto (National Research Institute of Police Science, Japan)

REAL-TIME LIGHT-FIELD 3D TELEPRESENCE

Aron Cserkaszky (Holografika Ltd., Hungary), Attila Barsi (Holografika Ltd., Hungary), Zsolt Nagy (Holografika Ltd., Hungary), Gabor Puhf (Holografika Ltd., Hungary), Tibor Balogh (Holografika Ltd., Hungary), Peter Kara (Holografika Ltd., Hungary)

WEDNESDAY NOVEMBER 28

Plenary Talk 4 (9:00-10:00, 28.11, Azeddine Beghdadi)

Novel Machine Learning Solutions for Pertinent Applications

Moncef Gabbouj, Signal Processing Laboratory, Tampere University of Technology

Oral Session 3.1 : Video Compression (10:30-12:10, 28.11, Chair: Moncef Gabbouj)

HIGHER PRECISION RANGE ESTIMATION FOR CABAC

Sio-Kei Im (Macao Polytechnic Institute), Ka-Hou Chan (Macao Polytechnic Institute)

PERCEPTUAL VIDEO CONTENT ANALYSIS AND APPLICATION TO HEVC QUANTIZATION REFINEMENT

Kais Rouis (National School of Engineering of Sousse, Tunisia), Chaker Larabi (University of Poitiers, France)

FAST MOTION ESTIMATION ALGORITHM WITH EFFICIENT MEMORY ACCESS FOR HEVC HARDWARE ENCODERS

Farhad Pakdaman (Nokia Technologies, Finland), Moncef Gabbouj (Nokia Technologies, Finland), Mahmoud R. Hashemi (University of Tehran, Iran), Mohammad Ghanbari (University of Essex, UK)

EFFICIENT 2D VIDEO CODING OF VOLUMETRIC VIDEO DATA

Nahid Sheikhi-Pour (Tampere University of Technology, Finland), Sebastian Schwarz (Nokia Technologies, Finland), Vinod Malamal Vadakital (Nokia Technologies, Finland), Moncef Gabbouj (Tampere University of Technology, Finland)

FAST INTRA-PREDICTION MODE DECISION ALGORITHM BASED ON GRADIENT IN HEVC

Wenwu Li (National University of Defense Technology, China), Shuwei Sun (National University of Defense Technology, China), Yang Guo (National University of Defense Technology, China)

Oral Session 3.2 : Sparse Visual Data Representations (13:30-14:30, 28.11, Chairs: Stefania Colonnese and Ioan Tabus)

LEARNING OVERCOMPLETE AND SPARSIFYING TRANSFORM WITH EXACT AND APPROXIMATE CLOSED FORM SOLUTIONS

Dimche Kostadinov (University of Geneva, Switzerland), Svyatoslav Voloshynovskiy (University of Geneva, Switzerland), Sohrab Ferdowsi (University of Geneva, Switzerland)

COMPOUND MARKOV RANDOM FIELD MODEL OF SIGNALS ON GRAPH: AN APPLICATION TO GRAPH LEARNING

Stefania Colonnese (University of Rome La Sapienza, Italy), Giulio Pagliari (University of Rome La Sapienza, Italy), Mauro Biagi (University of Rome La Sapienza, Italy), Roberto Cusani (University of Rome La Sapienza, Italy), Gaetano Scarano (University of Rome La Sapienza, Italy)

COMPRESSIVELY SENSED IMAGE RECOGNITION

Mehmet Yamac (Tampere University of Technology, Finland), Aysen Degerli (Tampere University of Technology, Finland), Bulent Sankur (Bogazici University, Turkey), Moncef Gabbouj (Tampere University of Technology, Finland), Sinem Aslan (Department of Informatics, Systems and Communication, University of Milano-Bicocca, Italy)

Student posters, demos and industrial presentations (14:30-15:30, 28.11, Chair: Mykola Ponomarenko)

COMBINING DATA OBTAINED IN DIFFERENT ELECTROMAGNETIC RANGES

Evgeny Semenishchev (Don State Technical University, Russia), Viacheslav Voronin (Don State Technical University, Russia)

IMPROVED 3D-POSITION DETECTION BY HOLOGRAPHICAL POINT REPLICATION

Flavio Guerra (University of Stuttgart, Germany), Simon Hartlieb (University of Stuttgart, Germany), K. Hoppe (University of Stuttgart, Germany), Tobias Haist (University of Stuttgart, Germany), Wolfgang Osten (University of Stuttgart, Germany)

REAL TIME SYSTEM FOR FACIAL ANALYSIS

Janne Tommola (Tampere University of Technology, Finland), Pedram Ghazi (Tampere University of Technology, Finland), Bishwo Adhikari (Tampere University of Technology, Finland), and Heikki Huttunen (Tampere University of Technology, Finland)

VIDEO STABILIZATION: CHALLENGES, METHODS AND EVALUATION

Wilko Guilluy (Université Paris 13, France), Laurent Oudre (Université Paris 13, France), Azeddine Beghdadi (Université Paris 13, France)

SINGLE EXPOSURE LENSLESS PHASE IMAGING

Péter Kocsis (Tampere University of Technology, Finland), Igor Shevkunov (Tampere University of Technology, Finland), Vladimir Katkovnik (Tampere University of Technology, Finland), Karen Egiazarian (Tampere University of Technology, Finland)

UNSUPERVISED APPROACH TOWARDS VISUAL SALIENCY MODELLING

Homapriya Tarigopula (The University of Edinburgh, United Kingdom), Beren Millidge (The University of Edinburgh, United Kingdom), Richard Shillcock (The University of Edinburgh, United Kingdom)

COLOR IMAGE DENOISING BASED ON CASCADED CNN AND NONLOCAL FILTERS

Cristovao Cruz (Noiseless Imaging Ltd, Finland), Alessandro Foi (Tampere University of Technology, Finland), Vladimir Katkovnik (Tampere University of Technology, Finland), Karen Egiazarian (Tampere University of Technology, Finland)

COMPRESSION OF POINT CLOUD GEOMETRY WITH RANDOM ACCESS

Emanuele Palma (Tampere University of Technology, Finland), Ioan Tabus (Tampere University of Technology, Finland)

REAL-TIME 3D IMAGING SYSTEM OPERATING IN LOW-SENSING MODE

Mihail Georgiev (Tampere University of Technology, Finland), Atanas Gotchev (Tampere University of Technology, Finland)

HYPERPECTRAL DATA DENOISING FOR TERAHERTZ PULSE TIME-DOMAIN HOLOGRAPHY

Maksim Kulya (ITMO University, Russia), Nikolay Petrov (ITMO University, Russia), Karen Egiazarian (Tampere University of Technology, Finland), Vladimir Katkovnik (Tampere University of Technology, Finland)

RECORDING AND DIGITAL HOLOGRAPHIC ANALYSIS OF COMPLEX SUPERIMPOSED GRATINGS

Cazac Veronica (Tampere University of Technology, Finland), Meshalkin Alexey (Institute of Applied Physics, Moldova), Loshmanschii Constantin (Institute of Applied Physics, Moldova), Abaskin Vladimir (Institute of Applied Physics, Moldova), Achimova Elena (Institute of Applied Physics, Moldova)