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Program

Tuesday, May 29

Tuesday, May 29, 08:40 - 09:30

Keynote speech 1 - Content Creation for AR, VR, and Free Viewpoint Video

Aljosa Smolic

Augmented reality (AR) and virtual reality (VR) are among most important technology trends these days. Major industry players make huge investments, vibrant activity can be observed in the start-up scene and academia. The elements of the ecosystem seem mature enough for broad adoption and success. However, availability of compelling content can become a limiting factor. This talk will address this content gap for AR/VR, and present solutions developed in the V-SENSE team at TCD, i.e. 3D reconstruction of dynamic real world scenes and their interactive visualization in AR/VR.

Tuesday, May 29, 09:30 - 10:30

OS1: Virtual Reality - 1

Chair: Andrew Perkis

Visual Attention in Omnidirectional Video for Virtual Reality Applications
Cagri Ozcinar and Aljosa Smolic
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Ambiqual - a full reference objective quality metric for ambisonic spatial audio
Miroslaw Narbutt, Andrew Allen, Michael Chinen, Jan Skoglund and Andrew Hines
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Virtual Reality Sickness Predictor: Analysis of visual-vestibular conflict and VR contents
Jaekyung Kim, Kim Woojae, Sewoong Ahn, Jinwoo Kim and Sanghoon Lee
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Tuesday, May 29, 11:00 - 12:40

OS2: Speech & Audio

Chair: Tiago Falk

Influence of Number of Stimuli for Subjective Speech Quality Assessment in Crowdsourcing
Rafael Zequeira Jiménez, Laura Fernández Gallardo and Sebastian Möller
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Variable Voice Likability Affecting Subjective Speech Quality Assessments
Laura Fernández Gallardo, Gabriel Mittag, Sebastian Möller and John Beerends
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Effects of Transmitted Speech Bandwidth on Subjective Assessments of Speaker Characteristics
Laura Fernández Gallardo
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On the quality perception of multiparty conferencing calls
Janto Skowronek and Alexander Raake
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Quantifying Quality Degradation of the EVS Super-Wideband Speech Codec
Gabriel Mittag, Sebastian Möller, Vincent Barriac and Stéphane Ragot
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IS1: Interactive Session

Chair: Peter A. Kara

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Direct Scaling & Quality Prediction for perceptual Video Quality Dimensions
Falk Schiffner and Sebastian Möller
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Effect of Primitive Features of Content on Perceived Quality of Light Field Visualization
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Effects of light field subsampling on the quality of experience in refocusing applications
Cristian Perra, Wei Song and Antonio Liotta
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Evaluation of No-reference quality metrics for Ultrasound liver images
Meriem Outtas, Lu Zhang, Olivier Deforges, Wassim Hamidouche and Amina Serir
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Getting Crevices, Cracks, and Grooves in Line: Anomaly Categorization for AQC Judgment Models
Anne Juhler Hansen, Hendrik Knoche and Thomas B. Moeslund
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Influence of Virtual Environments and Conversations on User Engagement During Multiplayer Exergames
Tanja Kojic, Jan-Niklas Voigt-Antons, Steven Schmidt, Lukas Tetzlaff, Bruno Kortowski, Uliana Sirotina and Sebastian Möller
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On Design of Problem Token Questions in Quality of Experience Surveys
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Spatiotemporal Feature Combination Model for No-Reference Video Quality Assessment
Hui Men, Hanhe Lin and Dietmar Saupe
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The Suitability of Young Students for Video Subjective Testing
Mike E Nilsson, Brahim Allan and Steve Appleby
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Validation of a Repeatable Pair Comparison Method
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VRate: A Unity3D Asset for integrating Subjective Assessment Questionnaires in Virtual Environments
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OS3: Haptics & Positioning

Chair: Alexander Raake

Predicting personality traits from touchscreen based interactions
Ludwig Küster, Carola Trahms and Jan-Niklas Voigt-Antons
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A Comparison of Interactive and Passive Quality Assessment for Gaming Research
Steven Schmidt, Saman Zadtootaghaj and Sebastian Möller
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Estimating Quality Ratings from Touch Interactions in Mobile Games
Carola Trahms, Sebastian Möller and Jan-Niklas Voigt-Antons
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HSSIM: An Objective Haptic Quality Assessment Measure for Force-Feedback Signals
Rania Hassen and Eckehard Steinbach
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Tuesday, May 29, 16:30 - 17:30

Madness Session

Chair: Raimund Schatz

Tuesday, May 29, 17:30 - 18:30

Speed PhD mentoring

Chair: Sebastian Möller

Wednesday, May 30

Wednesday, May 30, 08:40 - 09:30

Keynote speech 2 - Building Multimodal User Experience on Brain Theory: Experiments with the Active Learning in Digitally Enriched Spaces Paradigm in Neurorehabilitation, Human-Robot Interaction, and Cultural Heritage

Paul Verschure

Wednesday, May 30, 09:30 - 10:30

OS4: Virtual reality - 2

Chair: Aljosa Smolic

Assessing the QoE Impact of 3D Rendering Style in the Context of VR-based Training
Raimund Schatz, Georg Regal, Stephanie Schwarz, Stefan Suette and Marina Kempf
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OS5: OS5 - Video & 3D

Chair: Pedro A. Amado Assuncao

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José Filipe, Pedro A. Amado Assuncao, Luis Tavora, Rui Fonseca-Pinto and Sérgio M. M. Faria
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Subjective quality assessment of textured human full-body 3D-reconstructions
Alexandros Doumanoglou, Nikolaos Zioulis, Emmanouil Christakis, Dimitrios Zarpalas and Petros Daras
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Comparison of Compression Efficiency between HEVC/H.265, VP9 and AV1 based on Subjective Quality Assessments
Pinar Akyazi and Touradj Ebrahimi
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IS2: Interactive Session 2

Chair: Cristian Perra

A High-angular-resolution Turntable Data-set for Experiments on Light Field Visualization Quality
Roopak R. Tamboli, Shanmukh Manne, Peter A. Kara, Maria G. Martini, Sumohana Channappayya and Soumya Jana
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Dissociating Perceptual Quality Dimensions of Transmitted Speech Using Electroencephalography
Stefan Uhrig, Sebastian Möller and Jan-Niklas Voigt-Antons
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EmIoT: Giving Emotional Intelligence to the Internet of Things
Michele Nitti, Virginia Pilloni and Luigi Atzori
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Nevrez Imamoglu, Oishi Yu, Xiaoqiang Zhang, Guanqun Ding, Yuming Fang, Toru Kouyama and Ryousuke Nakamura
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Improving the discriminability of standard subjective quality assessment methods: a case study
Jing Li and Patrick Le Callet
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Introducing UN Salient360! Benchmark: A platform for evaluating visual attention models for 360º contents
Jesús Gutiérrez, Erwan David, Antoine Coutrot, Matthieu Perreira Da Silva and Patrick Le Callet
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Know your Game: A bottom-up Approach for Gaming Research
Sajad Mowlaei, Steven Schmidt, Saman Zadtootaghaj and Sebastian Möller
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Subjective Assessment of Different Locomotion Techniques in Virtual Reality Environments
Sara Vlahovic, Mirko Suznjevic and Lea Skorin-Kapov
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Subjective Assessment of Post-Processing Methods for Low Light Consumer Photos
Linlin Bie, Xu Wang and Jari Korhonen
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Towards systematic analysis of cybersickness in high motion omnidirectional video
Pablo Pérez, Nuria Oyaga, Jaime Ruiz and Alvaro Villegas
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User Experience of Web Browsing - The Relationship of Usability and Quality of Experience
Jan-Niklas Voigt-Antons, Tobias Hoßfeld, Sebastian Egger, Raimund Schatz and Sebastian Möller
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VALID: Visual quality Assessment for Light field Images Dataset
Irene Viola and Touradj Ebrahimi
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Wednesday, May 30, 15:00 - 16:30

SS1: Special Session on User-centric Evaluation of Interactive Applications

Chairs: Matthias Hirth, Sebastian Egger, Florian Metzger, Florian Hammer

Exploring the Interplay of Context and Interaction in the Field
Svenja Schröder, Jakob Hirschl and Peter Reichl
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Speed Index: Relating the Industrial Standard for User Perceived Web Performance to Web QoE
Tobias Hoßfeld, Florian Metzger and Dario Rossi
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New ITU-T Standards for Gaming QoE Evaluation and Management
Sebastian Möller, Steven Schmidt and Saman Zadtootaghaj
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Modeling Gaming QoE: Towards the Impact of Frame Rate and Bit Rate on Cloud Gaming
Saman Zadtootaghaj, Steven Schmidt and Sebastian Möller
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Wednesday, May 30, 16:30 - 17:30

Industrial panel

Jörgen Gustafsson, from Ericsson; Christian Schmidmer, from Opticom; Christian Timmerer, from Bitmovin; Ioannis Katsavounidis from Netflix

Chairs: Bernhard Feiten, Maria G. Martini

Thursday, May 31

Thursday, May 31, 08:30 - 10:30

SS2: Special session on Psychophysiological Assessment of Quality of Experience

Chairs: Sebastian Bosse, Naeem Ramzan

On the Stimulation Frequency in SSVEP-based Image Quality Assessment
Sebastian Bosse, Milena T. Bagdasarian, Wojciech Samek, Gabriel Curio and Thomas Wiegand
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Psychometric scaling of TID2013 dataset
Aliaksei Mikhailiuk, María Pérez-Ortiz and Rafal Mantiuk
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Effects of delay on perceived quality, behavior and oscillatory brain activity in dyadic telephone conversations
Stefan Uhrig, Thilo Michael, Sebastian Möller, Peter Keller and Jan-Niklas Voigt-Antons
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Towards a neuro-inspired no-reference instrumental quality measure for text-to-speech systems
Tiago Falk, Anderson Avila and Rishabh Gupta
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Evaluation of preference of multimedia content using deep neural networks for electroencephalography
Seong-Eun Moon, Soobeom Jang and Jong-Seok Lee
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A Neurophysiological Sensor-Equipped Head-Mounted Display for Instrumental QoE Assessment of Immersive Multimedia
Raymundo Cassani, Marc-Antoine Moinnereau and Tiago Falk
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Thursday, May 31, 11:00 - 12:40

OS6: Fundamentals

Chair: Antonio Liotta

Disregarding the Big Picture: Towards Local Image Quality Assessment
Oliver Wiedemann, Vlad Hosu, Hanhe Lin and Dietmar Saupe
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On the Subjective Assessment of the Perceived Quality of Medical Images and Videos
Lucie Lévêque, Hantao Liu, Sabina Barakovic, Jasmina Baraković Husić, Asli Kumcu, Ljiljana Platiša, Maria G. Martini, Rafael Rodrigues, Antonio M. G. Pinheiro, Meriem Outtas, Lu Zhang and

Athanassios N. Skodras
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Extended Features using Machine Learning Techniques for Photo Liking Prediction
Steve Göring, Konstantin Brand and Alexander Raake
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Playing with delay: With poor timing comes poor performance, and experience follows suit
Ragnhild Eg, Kjetil Raaen and Mark Claypool
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Expertise screening in crowdsourcing image quality
Vlad Hosu, Hanhe Lin and Dietmar Saupe
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Thursday, May 31, 13:40 - 14:20

Keynote speech 3 - Improving user experience on web TV through automated content analysis and organisation

Alberto Messina

This speech will touch upon on various aspects about Quality of Experience for broadcasters, and specifically from the point of view of RAI. Starting from the latest advancements brought in by standards and technologies in the area of perceived quality (HDR, HFR, VR), the speech will focus on the quality of experience that customers have with online media services and how this experience can be improved and enhanced through the usage of Artificial Intelligence technologies and smart applications.

Thursday, May 31, 14:20 - 15:00

Keynote speech 4 - Optimizing on-demand streaming video quality @ NETFLIX

Ioannis Katsavounidis

Ensuring high quality of experience for 125 million members in over 190 countries is our mission and at Netflix we are using and developing multiple technologies to achieve that goal. We will focus on the encoding task, which includes 3 major tasks - inspect, encode, validate, and we will show how we do it at scale. We will first present VMAF, the perceptual quality metric developed at Netflix which is used to assess quality of our encodes; also, an important building block in assessing members' streaming quality. We will then show how we optimize video codec parameters to achieve the highest possible quality. Of particular importance is how we address the video resolution/bitrate tradeoff and how we are willing to spend enormous amounts of CPU in order to achieve the best video quality for our members. We will also expand on how we are using royalty-free codecs, such as VP9 and the new AV1 codec, and finally present a system developed at Netflix that ties everything together, called Dynamic Optimizer.

Thursday, May 31, 15:20 - 17:00

OS7: Network & Management

Chair: Tobias Hoßfeld

360˚ Mulsemedia Experience over Next Generation Wireless Networks - A Reinforcement Learning Approach
Ioan-Sorin Comşa, Ramona Trestian and Gheorghita Ghinea
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Learning-based Prediction of Packet Loss Artifact Visibility in Networked Video
Jari Korhonen

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Timber: An SDN based emulation platform for QoE Management Experimental Research
Arslan Ahmad, Alessandro Floris and Luigi Atzori
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YouTube QoE Estimation from Encrypted Traffic: Comparison of Test Methodologies and Machine Learning Based Models
Irena Orsolic, Mirko Suznjevic and Lea Skorin-Kapov
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A Cumulative Quality Model for HTTP Adaptive Streaming
Huyen Tran, Pham Nam, Tobias Hoßfeld and Truong Cong Thang
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Thursday, May 31, 16:40 - 17:30

WRKS SS: Workshop special session

Chair: Thomas Zinner

A Glance at the Dagstuhl Manifesto 'QoE Vadis?'
Markus Fiedler, Sebastian Möller, Peter Reichl and Min Xie
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Quality of Experience Management of Smart City services
Alessandro Floris, Simone Porcu and Luigi Atzori
pp. 315-317

Friday, June 1

Friday, June 1, 09:00 - 10:00

Keynote speech 5 - QoE in the world of 5G

Jörgen Gustafsson

Communication networks are rapidly evolving, and around the corner is 5G, with an even increase capacity, performance, and features that will enable wireless communication for a huge amount of new services, for both consumers and enterprises. At the same time AI, or Machine Intelligence, is transforming virtually all industry segments, and rapidly starting to become an integrated part of life for all of us. What are the role of QoE in this new world? How can these services be managed, taking QoE into account? And what are the challenges for the QoE community? This keynote will address those questions, and give inspiration for important QoE research questions that should be addressed in the world we are moving into.

Friday, June 1, 10:30 - 11:30

WRKS OS1: Streaming

Chair: Lea Skorin-Kapov

Streaming Characteristics of Spotify Sessions
Anika Schwind, Florian Wamser, Thomas Gensler, Michael Seufert, Pedro Casas and Phuoc Tran-Gia
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Measuring YouTube QoE with ITU-T P.1203 under Constrained Bandwidth Conditions
Werner Robitza, Dhananjay Kittur, Alexander Dethof, Steve Göring, Bernhard Feiten and Alexander

Raake
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Evaluation of the Benefits of Variable Segment Durations for Adaptive Streaming
Susanna Schwarzmann, Thomas Zinner, Christian Sieber and Stefan Geissler
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Friday, June 1, 11:30 - 12:30

WRKS OS2: Beyond Streaming

Chair: Markus Fiedler

Observations on Emerging Aspects in QoE Modeling and Their Impact on QoE Management
Tobias Hoßfeld, Martín Varela, Poul E. Heegaard and Lea Skorin-Kapov
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How Long is Long Enough to Induce Immersion? Comparing the Immersiveness of Three Variations of Spatial Immersion
Chenyan Zhang, Saman Zadtootaghaj, Aud Sissel Hoel and Andrew Perkis
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Identification of Delay Thresholds Representing the Perceived Quality of Enterprise Applications
Kathrin Borchert, Thomas Zinner, Stanislav Lange and Matthias Hirth
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