17th IEEE International Conference on

# Automatic Face and Gesture Recognition 2023

## Program Booklet

**FG-2023**

**January 5-8, 2023**

**HAWAII, USA.**

IEEE Biometrics Council

# Sponsors



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# Welcome

It is our pleasure and privilege to welcome you to the 17th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2023). This year, FG will be at Waikoloa, Hawaii. We hope your experience at FG is rewarding both professionally and personally! FG 2023 was originally planned to be held in Guangzhou China. Due to the pandemic, the organizers decided to move the conference to be co-located with WACV 2023.

Advances in sensor design, computational power, pattern recognition, image and signal processing, computer vision, cryptography, mobile computing, and machine learning have enabled the development of face and gesture methods for a wide range of applications. Furthermore, there are now several vendors who have successfully incorporated these methods in commercial products. Examples include automated face recognition, body motion analysis, action and gesture recognition, and facial expression analysis. The extensive use of smartphones in contemporary society, and the deployment of related software for face and gesture understanding also concerns regarding the privacy and ethics of FG research. Therefore, the theme of this year's FG conference is to discuss ideas and approaches the FG community could address these concerns.

This year FG received a total of 85 valid submissions. The paper selection process, coordinated by the Program Chairs and the Area Chairs, was conducted in two phases: the review phase and the decision phase. During the review phase, the submissions were subjected to a rigorous double-blind review process. The Technical Program Committee consisted of over 95 experts who conducted the reviews. Each submission was reviewed by at least three experts who were asked to comment on the strengths, weaknesses, novelty, and impact of the work. The reviewers were also asked to justify their recommendation for accepting or rejecting a submission. During the decision phase, the Area Chair assigned to each submission prepared a consolidation report along with a recommendation of "Accept" or "Reject". The Program Chairs used the recommendation and consolidation reports of the Area Chairs, the reviewers' comments and the authors' response to render a final decision on each paper. As a result of this well-organized process, 51 submissions were selected for publication. Due to the relatively small number of papers, we decide that every paper will be Oral presentation. The selected papers will be presented in 4 oral sessions. Due to the pandemic a subset of the authors cannot attend the conference in person. Following the practices in recent top vision conferences such as ECCV, we will play the pre-recorded videos for papers without in-person attendees, and there would not be Q&A session for these papers. We hope to see many intense, productive, and enlightening discussions at the oral sessions, offering attendees a conference experience similar to pre-pandemic.

The conference will feature exciting plenary lectures by four prominent researchers: (i) Yaser Sheikh, a leader in human modeling and Metaverse technology, (ii) Massimo Tistarelli, a leader in the biometric community, (iii) Matthew Turk, a pioneer in automatic face recognition; and (iv) Jim DiCarlo, a leading neuroscientist who has made major contributions to the understanding of human visual intelligence.

FG 2023 will also host one panel session. In the panel session on " Privacy and Ethics of FG Research" (organized by Guoying Zhao and Junsong Yuan), three renowned scientists in automatic face and gesture recognition will present and exchange ideas about how the community conducts FG research in the era with increasing awareness of privacy and ethics.

Five workshops will be held as part of the FG 2023 program to highlight specific topics of interest to the FG community: (i) "First Workshop on Interdisciplinary Applications of Biometrics and Identity Science (InterID 2023)" organized by Tempestt Neal, Shaun Canavan, Patrick Flynn; (ii) "Socially Interactive Human-like Virtual Agents Workshop (SIVA'23)" organized by Nicolas Obin, Ryo Ishii, Rachael Jack, Louis-Philippe Morency, Catherine Pelachaud; (iii) "Artificial Intelligence for Automated Human Healthcare and Monitoring Workshop" organized by Abhijit Das, Srijan Das, Antitza Dantcheva, Hu Han, Francois Bremond, Xilin Chen; (iv) "Workshop on Learning with few or without annotated face, body and gesture data" organized by Maxime Devanne, Mohamed Daoudi,

# Welcome

Stefano Berretti, Germain Forestier, Jonathan Weber; and (v) "Behavioral Digital Twins for Smart Cities Workshop" organized by Koichiro Niinuma, Laszlo A. Jeni, Takahisa Yamamoto, Ryosuke Kawamura.

FG 2023 will have one tutorial titled "Practical Face Recognition Technology in the Industrial World" by Kevin Bowyer; (ii) "Discriminative learning for single-sample face recognition" by Yandong Guo, Jianteng Peng, Xinyi Wang, Bihui Chen, and Sufang Zhang. The tutorial will enable participants to gain new perspectives on topics of immense interest to the broad FG community.

The technical program also includes the Doctoral Symposium. The Doctoral Symposium will allow junior researchers to meet with a panel of distinguished scientists and leaders from academia and industry who will share their workplace experiences, and discuss challenges and mechanisms for career advancement.

In order to acknowledge excellence, FG 2023 will have two awards: (i) the Best Paper Award and (ii) the Best Student Paper Award. For the Best Paper and Best Student Paper Awards, a candidate list of papers was selected by the Program Chairs based on (i) the ratings and reviews provided by the reviewers, and (ii) recommendations provided by the Area Chairs. Papers co-authored by the Program Chairs were ineligible for these awards. The candidate list of papers, along with the reviews, was then sent to the Awards Committee for determining the best papers.

FG 2023 will have two dinners on Jan 5th and 6th. During the dinner of Jan 6$^{th}$, we will also hold the luau.

FG benefits significantly from its sponsorship and various guidance from advisory committees. We want to acknowledge and thank them for their contributions. Mitsubishi Electric Research Laboratories (MERL) is a Silver Sponsor. The PAMI-TC, FG steering committee, and IEEE biometrics council have always been very supportive throughout the entire organization process of FG 2023. To all the sponsors and advisory committees, thank you!

Finally, we would like to express our sincere appreciation to all the committee members and volunteers for their service. Without them, FG'23 would not have been possible!

As an IEEE conference, FG is co-sponsored by the IEEE Computer Society and the IEEE Biometrics Council. If this is your first FG meeting, welcome! If you are a FG veteran, welcome back! In either case, we hope you have a productive and enjoyable meeting, and that FG continues to capture the most exciting contributions from our talented research community.

Xiaoming Liu, Simon Lucey, Shiguang Shan; General Chairs
Jiwen Lu, Yingli Tian, Sudeep Sarkar, Stefanos Zafeiriou; Program Chairs
Nicole Finn and Wei-Shi Zheng, Local Chairs
https://fg2023.ieee-biometric

# People

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**General Chairs:** Xiaoming Liu, Simon Lucey, Shiguang Shan

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**Competition Chairs:** Sergio Escalera, Ran He

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**Awards Chairs:** Aleix Martinez, Mark Nixon

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## FG 2023 Area Chairs

Ajita Rattani
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Manmohan Chandraker
Nikolaos Boulgouris
Qijun Zhao
Rachael Jack
Shaun Canavan
Tae-Kyun Kim
Tim Marks
Vitomir Struc
Wen Sheng Chu
Yan Tong
Yansong Tang
Yasushi Makihara
Ying Tai
Zheng Zhu

# FG 2023 Program at a Glance

## Conference Schedule at a Glance

| **Thursday,**<br>**5 January 2023** | **Friday,**<br>**6 January 2023** | **Saturday,**<br>**7 January 2023** | **Sunday,**<br>**8 January 2023** |
|---|---|---|---|
| Workshops | Workshops | Main Conference | Main Conference |
| Lunch Break | | Lunch Break | Lunch Break/DC |
| Workshops | Workshops/Tutorials | Main Conference/Panel | Main Conference |

## Thursday and Friday Schedule at a Glance (Workshops, Tutorials)

| **Thursday, 5 January 2023** | | |
|---|---|---|
| **Paniolo I** | **Paniolo II** | **Virtual** |
| 08:45 – 12:15:<br>Workshop:<br>Interdisciplinary Applications of Biometrics and Identity Science | 9:30 – 16:00:<br>Workshop:<br>Socially Interactive Human-like Virtual Agents | 10:00 – 15:30:<br>Workshop:<br>Artificial Intelligence for Automated Human Health-care and Monitoring |
| Lunch Break | | |

| **Friday, 6 January 2023** | | |
|---|---|---|
| **Paniolo I** | **Paniolo III** | **Virtual** |
| 8:30 – 12:00:<br>Workshop:<br>Learning with few or without annotated face body and gesture data | | |
| Lunch Break | | |
| | 14:00 – 17:30:<br>Workshop:<br>Behavioral Digital Twins for Smart Cities | 14:00 – 17:00:<br>Tutorial:<br>Practical Face Recognition Technology in the Industrial World |

**Interdisciplinary Applications of Biometrics and Identity Science**

**Originizer:** Tempestt Neal, Shaun Canavan, Patrick Flynn

**Time:** Half Day (08:45-12:15), 5 January

**Location:** Paniolo I

**Summary:** Biometric recognition generally involves person identification or identity verification. Researchers within this field have long investigated novel biometric datasets, data collection methodologies, and/or data collection sensors, features or feature extraction approaches, and various matching models to reduce misidentification error, improve data quality, fuse different data sources, etc. Taking advantage of these advances, other disciplines, like medical sciences, mental health, and transportation, have recently begun to explore the application of biometric technologies to, for example, sense change in behavioral outcomes before and after an intervention. Such applications bring attention to the broader interdisciplinary application of biometrics and identity science (BIS) - in which some aspect of the biometric process is leveraged in an interdisciplinary way. The First Workshop on Interdisciplinary Applications of Biometrics and Identity Science (InterID 2023) explores this merging of BIS with other disciplines to facilitate discussions that extend beyond person recognition and identity verification research agendas and push the boundaries of BIS to generate new standards and BIS use cases applicable to other fields. InterID 2023 provides a dedicated venue for researchers in the biometrics research community to apply their expertise more broadly and promotes interdisciplinary research that extends across engineering and non-engineering applications of BIS.

**Socially Interactive Human-like Virtual Agents**

**Originizer:** Nicolas Obin, Ryo Ishii, Rachael Jack, Louis-Philippe Morency, Catherine Pelachaud

**Time:** Full Day (09:30-16:00), 5 January

**Location:** Paniolo II

**Summary:** Due to the rapid growth of virtual, augmented, and hybrid reality together with spectacular advances in artificial intelligence, the ultra-realistic generation and animation of digital humans with human-like behaviors is becoming a massive topic of interest. This complex endeavor requires modeling several elements of human behavior including the natural coordination of multimodal behaviors including text, speech, face, and body, plus the contextualization of behavior in response to interlocutors of different cultures and motivations. This workshop, organized by renowned scientists in complementary domains, aims to connect communities of research scientists

interested in virtual agents and human-agent or human-human interactions, with impact for future technological innovations and fundamental knowledge of human social behavior. Specifically, mixing participants from academia and industry, participants will present and discuss current research trends and envision frontiers in the modeling and generation of human-like multimodal behavior and their application to the fields of neuroscience and social cognition. Further, mixing computational and cognitive neuroscience communities will enable knowledge exchange about human multimodal behavior and cognition to in turn create virtual agents capable of natural, engaging, and seamless multimodal social behavior with real humans.

**Artificial Intelligence for Automated Human Health-care and Monitoring**

**Originizer:** Abhijit Das, Srijan Das, Antitza Dantcheva, Hu Han, Francois Bremond, Xilin Chen

**Time:** Full Day (10:00-15:30:), 5 January

**Location:** Virtual

**Summary:** Automated Human Health Monitoring based on Computer Vision has gained rapid scientific attention in the last decade, fueled by a large number of research articles and commercial systems based on set of features, extracted from face and gesture. Recently, the COVID-19 pandemic has pushed the need for virtual diagnosis and monitoring health protocols such as regulating social distancing, surveillance of individuals wearing masks in crowd, gauging body temperature and other physiological measurement from distance. Consequently, researchers from computer vision, as well as from the medical science community have given significant attention to goals ranging from patient analysis and monitoring to diagnostics. In addition, the recent pandemic scenario has claimed the need for health monitoring and surveillance of health protocols, which can be automated by various computer vision tools. This workshop presents a timely opportunity to discuss the state-of-the-art algorithms and the open challenges in the aforementioned research.

**Learning with few or without annotated face body and gesture data**

**Originizer:** Maxime Devanne, Mohamed Daoudi, Stefano Berretti, Germain Forestier, Jonathan Weber

**Time:** Half Day (08:30-12:00), 6 January

**Location:** Paniolo I

**Summary:** Since more than a decade, Deep Learning has been successfully employed for vision-based face, body and gesture analysis, both for static and dynamic granularities. This is particularly due to the development of effective deep architectures and the release of quite consequent datasets. However, one of the main limitations of Deep Learning is that it requires large scale annotated datasets to train efficient models. Gathering such face, body or gesture data and annotating them can be very very time consuming and laborious. This is particularly the case in areas where experts from the field are required, like in the medical domain. In such a case, using crowdsourcing may not be suitable. In addition, currently available face and/or datasets cover a limited set of categories. This makes the adaptation of trained models to novel categories not straightforward. Finally, while most of the available datasets focus on classification problems with discretized labels, continuous annotations are required in many scenarios. Hence, this significantly complicates the annotation process. The goal of this workshop is to explore approaches to overcome such limitations by investigating ways to learn from few annotated data, to transfer knowledge from similar domains or problems, or to benefit from the community to gather novel large scale annotated datasets.

**Behavioral Digital Twins for Smart Cities**

**Originizer:** Koichiro Niinuma, Laszlo A. Jeni, Takahisa Yamamoto, Ryosuke Kawamura

**Time:** Half Day (14:00-17:30), 6 January

**Location:** Paniolo III

**Summary:** Digital twin is a virtual environment that allows us to simulate real world problems. For digital twin, one of the most important factors is human behavior modeling since it is required by many digital twin applications, such as crime and accident prevention, mitigation strategies in natural disasters, autonomous driving, health coaching and sports simulation. However, because of the complexity of human behavior, there are still many challenges unsolved. To address the challenges, multiple research fields need to be involved together, including computer vision, behavior science, human-computer interaction and AR/VR. This topic is germane to both computer vision and computational behavior communities. In this workshop, we aim to facilitate further discussion on this emerging research field from both technological and application perspectives. The outcomes of this workshop are relevant to building behavioral digital twins of pedestrians in smart cities equipped with sensor networks. During natural disasters, such as the COVID-19 pandemic, modeling behavioral patterns may lead to mitigation policies with greater efficiency and effectiveness, can identify cost-effective solutions to deliver public services, improve government accountability vis-`a-vis citizens and track progress and impact. This workshop will serve as a catalyst to bring diverse stakeholders together so that new scientific languages/thoughts can be established, in an effort to address the societal challenges of creating behavior sensing systems that account for the diversity of people and their environments.

**Tutorial: Practical Face Recognition Technology in the Industrial World**

**Originizer:** Yandong Guo, Guosheng Hu, Jianteng Peng, Xinyi Wang, Bihui Chen, Sufang Zhang

**Time:** Half Day (14:00-17:00), 6 January

**Location:** Virtual

**Summary:** As one of the most important applications in the field of artificial intelligence and computer vision, face recognition has attracted the wide attention of researchers. Almost every year, major CV conferences or journals, including CVPR, ICCV, PAMI, etc. will publish dozens of papers in the field of FR. Owing to these works, face recognition has been applied in the industrial community such as device unlock, mobile payment, etc. Meanwhile, the industrial community also puts forward the new demand to the academic community. In that way, it is important to understand the practical techniques for the industrial community and the challenges for the academic community. This tutorial aims to provide the techniques and the challenges from the perspective of the industry, therefore closing the gap between academic and industry.

# FG 2023 Program at a Glance

## Main Conference Schedule at a Glance

Room: Paniolo I

| **Saturday, 7 January 2023** | **Sunday, 8 January 2023** |
|---|---|
| 9:00 – 9:15:<br>Opening | |
| 9:15 – 10:15: Keynote:<br>What is a Codec Avatar?<br>Yaser Sheikh | 9:00 – 10:00: Keynote:<br>Costs and Bias in Facial Recognition Technologies<br>Matthew Turk |
| 10:15 – 10:30: Coffee Break | 10:00 – 10:20: Coffee Break |
| 10:30 – 12:00:<br>Oral A (9×10min, In person) | 10:20 – 12:00:<br>Oral C (10×10min, In person) |
| 12:00 – 13:00: Lunch Break | 12:00 – 13:30: Lunch Break/DC |
| 13:00 – 14:15: Panel session:<br>Privacy and Ethics of FG Research<br>Moderator: Dr. Guoying Zhao<br>Panelists: Yaser Sheikh (Meta & CMU), Massimo Tistarelli (U Sassari), Matthew Turk (TTI-Chicago) | |
| 14:30 – 15:30: Keynote:<br>Face Recognition: A Vision Ahead - Reflections on 30 Years of Face Recognition Research<br>Massimo Tistarelli | 13:30 – 14:30: Keynote:<br>Deep network models of the deep network mechanisms of (part of) human visual intelligence<br>Jim DiCarlo |
| 15:30 – 15:50:<br>Coffee Break | 14:30 – 15:00:<br>Coffee Break |
| 15:50 – 18:30:<br>Oral B (16×10min, Mixing) | 15:00 – 17:40:<br>Oral D (16×10min, Virtual) |

# January 7, 2023

## Oral Session ID – A

10:30 AM – 12:00 AM

| Paper Title | Author Names | Time | Attending |
|---|---|---|---|
| SS-VAERR: Self-Supervised Apparent Emotional Reaction Recognition from Video | Marija Jegorova (Meta Reality Labs)*; Maja Pantic (Facebook / Imperial College London ); Stavros Petridis (Imperial College London) | 10:30 AM – 10:40 AM | In person |
| Adversarial 3D Face Disentanglement of Identity and Expression | Yajie Gu (University of York)*; Nick E. Pears (University of York, UK); Hao Sun (University of York) | 10:40 AM – 10:50 AM | |
| Face-to-Face Contrastive Learning for Social Intelligence Question-Answering | Alex Wilf (CMU)*; Martin Ma (Carnegie Mellon University); Paul Pu Liang (Carnegie Mellon University); Amir Zadeh (CMU LTI); Louis-Philippe Morency (Carnegie Mellon University) | 10:50 AM – 11:00 AM | |
| Camera Self-Calibration Using Human Faces | Masa Hu (Michigan State University)*; Garrick Brazil (Facebook); Nanxiang Li (BOSCH Research North America); Liu Ren (BOSCH Research North America); Xiaoming Liu (Michigan State University) | 11:00 AM – 11:10 AM | |
| Are Face Detection Models Biased? | Surbhi Mittal (Indian Institute of Technology, Jodhpur)*; Kartik Thakral (Indian Institute of Technology Jodhpur); Puspita Majumdar (IIIT Delhi); Mayank Vatsa (IIT Jodhpur); Richa Singh (IIT Jodhpur) | 11:10 AM – 11:20 AM | |
| Octuplet-Loss: Make Face Recognition Robust to Image Resolution | Martin Knoche (Technical University of Munich)*; Mohamed Elkadeem (Technical University of Munich); Stefan Hörmann (Technical University of Munich); Gerhard Rigoll (Institute for Human-Machine) | 11:20 AM – 11:30 AM | |
| FaceGuard: A Self-Supervised Defense Against Adversarial Face Images | Debayan Deb (Michigan State University)*; Xiaoming Liu (Michigan State University); Anil Jain (Michigan State University) | 11:30 AM – 11:40 AM | |
| Adversarial Deep Multi-Task Learning Using Semantically Orthogonal Spaces and Application to Facial Attributes Prediction | Arnaud Dapogny (Pierre and Marie Curie University (UPMC)); Jules Bonnard (ISIR); Gauthier Tallec (ISIR); Edouard Yvinec (Datakalab); Kevin Bailly (Sorbonne University / Datakalab)* | 11:40 AM – 11:50 AM | |
| PhygitalNet: Unified Face Presentation Attack Detection via One-Class Isolation Learning | Kartik Thakral (Indian Institute of Technology Jodhpur)*; Surbhi Mittal (Indian Institute of Technology, Jodhpur); Mayank Vatsa (IIT Jodhpur); Richa Singh (IIT Jodhpur) | 11:50 AM – 12:00 AM | |

## Oral Session ID – B

3:50 PM – 6:30 PM HST

| Paper Title | Author Names | Time | Attending |
|---|---|---|---|
| Non-Contact Based Modeling of Enervation | Kais Riani (University of Michigan)*; Salem Sharak (University of Michigan); Mohamed Abouelenien (University of Michigan); Mihai Burzo (University of Michigan); Rada Mihalcea (University of Michigan); John Elson (Ford); Clay Maranville (Ford); Kwaku Prakah-Asante (Ford); Waqas Manzoor (Ford) | 3:50 PM – 4:00 PM | In person |
| Multimodal Feature Selection for Detecting Mothers' Depression in Dyadic Interactions with their Adolescent Offspring | Maneesh Bilalpur (University of Pittsburgh)*; Saurabh Hinduja (University of Pittsburgh); Laura Cariola (The University of Edinburgh); Lisa Sheeber (Oregon Research Institute); Nick Allen (University of Oregon); Laszlo A Jeni (Carnegie Mellon University); Louis-Philippe Morency (Carnegie Mellon University); Jeffrey Cohn (University of Pittsburgh) | 4:00 PM – 4:10 PM | |
| Multi-Modal Human Authentication Using Silhouettes, Gait and RGB | Yuxiang Guo (Johns Hopkins University)*; Cheng Peng (Johns Hopkins University); Chun Pong Lau (Johns Hopkins University); Rama Chellappa (Johns Hopkins University) | 4:10 PM – 4:20 PM | |
| Part-aware Prototypical Graph Network for One-shot Skeleton-based Action Recognition | Tailin Chen (Newcastle Univesity)*; Desen Zhou (Baidu, Inc.); Jian Wang (Baidu); Shidong Wang (Newcastle University); Qian He (ShanghaiTech University); ChuanYang Hu (PLUS Lab, Shanghaitech University); Errui Ding (Baidu Inc.); Yu Guan (University of Warwick); Xuming He (ShanghaiTech University) | 4:20 PM – 4:30 PM | Virtual |
| SignNet: Single Channel Sign Generation using Metric Embedded Learning | Tejaswini Ananthanarayana (RIT); Lipisha Chaudhary (University at Buffalo, SUNY); Ifeoma Nwogu (University at Buffalo, SUNY)* | 4:30 PM – 4:40 PM | |
| Learning Effective Global Receptive Field For Facial Expression Recognition | Jiayi Han (Fudan University)*; Li Ang (CUHK); Donghong Han (Northeastern University); Jianfeng Feng (Fudan University) | 4:40 PM – 4:50 PM | |
| DisVAE: Disentangled Variational Autoencoder for High-Quality Facial Expression Features | Tianhao Wang (Nanjing University)*; Mingyue Zhang (Nanjing University); Lin Shang (Nanjing University) | 4:50 PM – 5:00 PM | |
| Relation-aware Network for Facial Expression Recognition | Xin Ma (Inner Mongolia University)*; Yingdong Ma (Inner Mongolia University) | 5:00 PM – 5:10 PM | |
| Exploring Mental Prototypes by an Efficient Interdisciplinary Approach: Interactive Microbial Genetic Algorithm | Sen YAN (CentraleSupelec)*; catherine SOLADIE (CentraleSupelec); Renaud SEGUIER (CENTRALESUPELEC) | 5:10 PM – 5:20 PM | |
| Latent Generative Replay for Resource-Efficient Continual Learning of Facial Expressions | Samuil Stoychev (University of Cambridge); Nikhil Churamani (University of Cambridge)*; Hatice Gunes (University of Cambridge) | 5:20 PM – 5:30 PM | |

| | | | |
|---|---|---|---|
| Low-Resolution Face Recognition Enhanced by High-Resolution Facial Images | Haihan Wang (University of Science and Technology of China)*; Shangfei Wang (University of Science and Technology of China) | 5:30 PM – 5:40 PM | Virtual |
| Multi-Zone Transformer Based on Self-Distillation for Facial Attribute Recognition | Si Chen (Xiamen University of Technology)*; Xueyan Zhu (Xiamen University of Technology); Da-Han Wang (Xiamen University of Technology); Shunzhi Zhu (Xiamen University of Technology); Yun Wu (Xiamen University of Technology) | 5:40 PM – 5:50 PM | |
| Activation Template Matching Loss for Explainable Face Recognition | Huawei Lin (Shenzhen University); haozhe liu (Shenzhen University); Qiufu Li (shenzhen university); Linlin Shen (Shenzhen University)* | 5:50 PM – 6:00 PM | |
| Intrinsic Imaging Model Enhanced Contrastive Face Representation Leaning | Haomiao Sun (UCAS, ICT, VIPL); Shiguang Shan (Institute of Computing Technology, Chinese Academy of Sciences)*; Hu Han (Institute of Computing Technology, Chinese Academy of Sciences) | 6:00 PM – 6:10 PM | |
| Self-supervised Learning for Fine-grained Ethnicity Classification under Limited Labeled Data | Kunyan Li (ICT); Jie Zhang (ICT, CAS)*; Shiguang Shan (Institute of Computing Technology, Chinese Academy of Sciences) | 6:10 PM – 6:20 PM | |
| Analyzing the Impact of Shape & Context on the Face Recognition Performance of Deep Networks | Sandipan Banerjee (Samsung Research America)*; Walter Scheirer (University of Notre Dame); Kevin Bowyer (University of Notre Dame); Patrick Flynn (University of Notre Dame) | 6:20 PM – 6:30 PM | |

## January 8, 2023

### Oral Session ID – C
10:20 AM – 12:00 AM HST

| Paper Title | Author Names | Time | Attending |
|---|---|---|---|
| Self-Supervised Face Presentation Attack Detection with Dynamic Grayscale Snippets | Usman Muhammad (University of Oulu)*; Mourad Oussalah (University of Oulu) | 10:20 AM – 10:30 AM | In person |
| StyleMask: Disentangling the Style Space of StyleGAN2 for Neural Face Reenactment | Stella Bounareli (Kingston University of London)*; Christos Tzelepis (Queen Mary University of London); Vasileios Argyriou (Kingston University London); Ioannis Patras (Queen Mary University of London); Georgios Tzimiropoulos (Queen Mary University of London) | 10:30 AM – 10:40 AM | |
| S2F2: Self-Supervised High Fidelity Face Reconstruction from Monocular Image | Abdallah Dib (InterDigital)*; Junghyun Ahn (InterDigital); Cédric Thébault (Technicolor); Philippe-Henri Gosselin (InterDigital); Louis Chevallier (InterDigital) | 10:40 AM – 10:50 AM | |
| Controllable Facial Micro-element Synthesis using Segmentation Maps | Yujin Kim (Inha University); In Kyu Park (Inha University)* | 10:50 AM – 11:00 AM | |
| Segmentation-Reconstruction-Guided Facial Image De-occlusion | Xiangnan YIN (Ecole Cenrale de Lyon)*; Di Huang (Beihang University, China); Zehua Fu (Hangzhou Innovation Institute, Beihang University); Yunhong Wang (State Key Laboratory of Virtual Reality Technology and System, Beihang University, Beijing 100191, China); Liming Chen (Ecole Centrale de Lyon) | 11:00 AM – 11:10 AM | |
| CoNFies: Controllable Neural Face Avatars | Heng Yu (Carnegie Mellon University); Koichiro Niinuma (FUJITSU RESEARCH OF AMERICA); Laszlo A Jeni (Carnegie Mellon University)* | 11:10 AM – 11:20 AM | |
| FLAME-in-NeRF: Neural control of Radiance Fields for Free View Face Animation | ShahRukh Athar (Stony Brook University)*; Zhixin Shu (Adobe Research); Dimitris Samaras (Stony Brook University) | 11:20 AM – 11:30 AM | |
| LipNeRF: What is the right space to lip-sync a NeRF? | Aggelina Chatziagapi (Stony Brook University)*; ShahRukh Athar (Stony Brook University); Abhinav Jain (Amazon.com, Inc.); Rohith MV (Amazon Lab126); Vimal Bhat (Amazon); Dimitris Samaras (Stony Brook University) | 11:30 AM – 11:40 AM | |
| Practical Parametric Synthesis of Realistic Pseudo-Random Face Shapes | Igor Borovikov (Electronic Arts)*; Karine Levonyan (Electronic Arts); Mihai Anghelescu (Electronic Arts) | 11:40 AM – 11:50 AM | |
| Learning Continuous Mesh Representation with Spherical Implicit Surface | Zhongpai Gao (Shanghai Jiao Tong University )* | 11:50 AM – 12:00 AM | In person |

## Oral Session ID – D

3:00 PM – 5:40 PM HST

| Paper Title | Author Names | Time | Attending |
|---|---|---|---|
| The Florence 4D Facial Expression Dataset | Filippo Principi (University of Florence); Stefano Berretti (University of Florence, Italy)*; Claudio Ferrari (University of Parma); naima OTBERDOUT (University of Lille); Mohamed DAOUDI (IMT Nord Europe/ CRIStAL (UMR 9189)); Alberto Del Bimbo (University of Florence) | 3:00 PM – 3:10 PM | Virtual |
| RavenGaze: A Dataset for Gaze Estimation Leveraging Psychological Experiment Through Eye Tracker | Tao Xu (School of Software, Northwestern Polytechnical University); Bo Wu (School of Software, Northwestern Polytechnical University); Yuqiong Bai (School of Software,Northwestern Polytechnical University); Yun Zhou (School of Education, Shaanxi Normal University)* | 3:10 PM – 3:20 PM | |
| Laplacian ICP for Progressive Registration of 3D Human Head Meshes | Nick E. Pears (University of York, UK)*; Hang Dai (Search Results Web results Inception Institute of Artificial Intelligence); William Smith (University of York); Hao Sun (University of York) | 3:20 PM – 3:30 PM | |
| Unified Detection of Digital and Physical Face Attacks | Debayan Deb (Michigan State University)*; Xiaoming Liu (Michigan State University); Anil Jain (Michigan State University) | 3:30 PM – 3:40 PM | |
| Generalized Face Anti-Spoofing via Multi-Task Learning and One-Side Meta Triplet Loss | Chu-Chun Chuang (National Tsing Hua University); Chien-Yi Wang (Microsoft); Shang-Hong Lai (National Tsing Hua University)* | 3:40 PM – 3:50 PM | |
| T2V-DDPM: Thermal to Visible Face Translation using Denoising Diffusion Probabilistic Models | Nithin Gopalakrishnan Nair (Johns Hopkins University)*; Vishal Patel (Johns Hopkins University) | 3:50 PM – 4:00 PM | |
| Facial Geometric Detail Recovery via Implicit Representation | Xingyu Ren (Shanghai JiaoTong University)*; Alexandros Lattas (Imperial College London); Baris Gecer (Huawei); Jiankang Deng (Huawei); Chao Ma (Shanghai Jiao Tong University); Xiaokang Yang (Shanghai Jiao Tong University of China) | 4:00 PM – 4:10 PM | |
| TransFS: Face Swapping Using Transformer | Wei Cao (Shandong Artificial Intelligence Institite, Qilu University of Technology (Shandong Academy of Science))*; Tianyi Wang (The University of Hong Kong); Anming Dong (Qilu Univeristy of Technology); Minglei Shu (Shandong Artificial Intelligence Institute) | 4:10 PM – 4:20 PM | |
| Weakly-Supervised Photo-realistic Texture Generation for 3D Face Reconstruction | Xiangnan YIN (Ecole Cenrale de Lyon)*; Di Huang (Beihang University, China); Zehua Fu (Hangzhou Innovation Institute, Beihang University); Yunhong Wang (State Key Laboratory of Virtual Reality Technology and System, Beihang University, Beijing 100191, China); Liming Chen (Ecole Centrale de Lyon) | 4:20 PM – 4:30 PM | |
| Video Inference for Human Mesh Recovery with Vision Transformer | Hanbyel Cho (KAIST)*; Jaesung Ahn (KAIST); Yooshin Cho (KAIST); Junmo Kim (KAIST) | 4:30 PM – 4:40 PM | |

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| STr-GCN: Dual Spatial Graph Convolution network and Transformer Graph Encoder for 3D hand gesture recognition | Rim Slama (LINEACT laboratory)*; Wael Rabah (LINEACT Laboratory); Hazem Wannous (IMT Nord Europe) | 4:40 PM – 4:50 PM | Virtual |
| Human Pose Estimation with Shape Aware Loss | Lin Fang (University of Science and Technology of China)*; Shangfei Wang (University of Science and Technology of China) | 4:50 PM – 5:00 PM | |
| Unsupervised 3D Animal Canonical Pose Estimation with Geometric Self-Supervision | Xiaowei Dai (Sichuan University)*; Shuiwang Li (Guilin University of Technology); Qijun Zhao (Sichuan University); hongyu yang (sichuan university) | 5:00 PM – 5:10 PM | |
| An efficient approach for real-time abnormal human behavior recognition on surveillance cameras | Hoang Ngoc Nguyen (Chonnam National University)*; Nhat Nguyen Ngoc (VinBrain ); Huu Trung Bui (VinBrain); Dao Huu Hung (VinBrain); QUOC HUNG TRUONG (VINBRAIN); Vu Hoang (VinBrain) | 5:10 PM – 5:20 PM | |
| Mobile Keystroke Biometrics Using Transformers | Giuseppe Stragapede (Universidad Autónoma de Madrid)*; Paula Delgado-Santos (University of Kent); Ruben Tolosana (Universidad Autonoma de Madrid); Ruben Vera-Rodriguez (Universidad Autónoma de Madrid); Richard M Guest ("University of Kent, Canterbury"); Aythami Morales (Universidad Autonoma de Madrid) | 5:20 PM – 5:30 PM | |
| Analyzing Interactions in Paired Egocentric Videos | Ajeeta Khatri (Rochester Institute of Technology); Ifeoma Nwogu (University at Buffalo, SUNY)* | 5:30 PM – 5:40 PM | |