ICSP2022

2022 IEEE 16th INTERNATIONAL CONFERENCE ON

SIGNAL PROCESSING
Final Program

October 21 - 24, 2022, Beijing, CHINA

ICSP2022 Technical Program Schedule

		Online Hall 1	Online Hall 2
SATURDAY	Oct. 22 2:00 PM-5:30 PM	ICSP2022 Opening Ceremony & Keynote Speeches Zoom Meeting ID: 82132662056 Password: 123467	
SUNDAY	Oct. 23 8:00 AM-10:00 AM	S01 - 01~10 Tencent Meeting ID: 326 194 116 Session Chair: Kuanglu Yu	
	Oct. 23 10:00 AM-12:00 AM	S02 - 01~10 Tencent Meeting ID: 326 194 116 Session Chair: Huihui Bai	
	Oct. 23 1:30 PM-3:30 PM	S03 - 01~10 Tencent Meeting ID: 237 784 094 Session Chair: Jinwen Ma; Shan Cao	
	Oct. 23 3:30 PM-5:30 PM	S04 - 01~10 Tencent Meeting ID: 237 784 094 Session Chair: Baodi Liu; Yigang Cen	Special Session: SQu-01~12 Tencent Meeting ID: 318 429 870 Session Chair: Xuguo Song
MONDAY	Oct. 24 8:00 AM-10:00 AM	S05 - 01~10 Tencent Meeting ID: 175 379 626 Session Chair: Tangwen Yang	Special Session: Oral: SZhu-O1~O10 Poster: SZhu-P1~P6 Session Chair: Yuemin Zhu Refer to the attached file for more details.
	Oct. 24 10:00 AM-12:00 AM	S06 - 01~10 Tencent Meeting ID: 175 379 626 Session Chair: Yi Jin	
	Oct. 24 1:30 PM-3:30 PM	S07 - 01~10 Tencent Meeting ID: 775 371 352 Session Chair: Yanjiang Wang; Rongrong Ni	Special Session: SLiu-01~06 Tencent Meeting ID: 894-532-227 Session Chair: Shuoyan Liu
	Oct. 24 3:30 PM-5:30 PM	S08 - 01~07 Tencent Meeting ID: 775 371 352 Session Chair: Gaoyun An	

Greeting from Conference Chairman

Good afternoon
Ladys and gentlemen

On behalf of the conference committee to express congratulations on the convening of 16th International Conference on Signal Processing and to extend our warm and cordial greeting to you, all the experts, scholars, professors and students from other countries and from China to the ICSP2022.

Sponsored by Beijing Jiaotong University，IEEE Beijing Section, IET Beijing Local Network, the 16th ICSP 2022 is one of the ICSP conference series, which began from 1990 in Beijing. During the past 32 years the theory and technology of signal processing have been advanced extremely quickly and spread widely in all the disciplines of engineering and scientific fields. Signal processing has also a great effect on the day-to-day life of the human beings. To keep the pace with the technology development and the state of art of applications. As you know, the International Conference on Signal Processing has gone through 32 years. And we would like to thank experts and scholars from all levels of organizations at home and abroad and from the wider signal processing community for their support to the Conference.

In addition, due to the impact of COVID-19, this session we have to take the combination of online and offline way to hold. Fortunately, the Internet is so developed today, so that the conference also has the effect of gathering together. I am sure that the participants in this conference will also benefit from the report and exchange of the meeting. The 16th ICSP2022 will bring together diversity of authors and speakers from many nations and regions to share ideas and new perspectives in both theoretical and practical aspects of signal processing.

As you know, the conference includes a lot of new hot topics, which was being developed during recent a few years. For example it includes signal analysis of big data, sparse representation and feature detection, 2D/3D video compression and retrieval, artificial Intelligent and deep

learning and so on.

In addition, we are also honored to have invited three special keynote speakers. They are professor Weisi LIN from Nanyang Technological University, whose lecture topic is Quality Evaluation of Computer Generated & Partially-generated Visual Signals; Professor Junhui HOU from City University of Hong Kong, whose lecture topic is Learning to Enhance 3D Point Clouds: from Static to Dynamic; Professor Su RUAN from University of Rouen Normandy, whose lecture topic is Segmentation of multimodal medical images. I believe that all of us will benefit from wonderful keynote speeches. So let us say welcome to keynote speakers. As the organizer of conference we would like to extend my appreciation to all authors for contributing their excellent research papers as well as reviewers for their hard work in evaluating the large number of the Technical Committee members.

We have to express the special thanks to our conference patrons such as SPS of Chinese Institute of Electronics, IET, URSI, National Natural Science Foundation of China, IEEE Signal Processing Society Beijing Chapter, IEEE Computer Society Beijing Chapter, Japan China Science and Technology Exchange Association, CIC Communication and Signal Processing society and Beijing institute of electronics and so on.

Finally, I wish a successful round-off to the 16th international conference on Signal Processing. I also wish all the participants good health and a happy life. Thank you very much.

RUAN Qiuqi

General Chair

ICSP2022

Message from Technical Program Chairman

Ladies and gentlemen! Everybody is good!

On behalf of the Conference Program Committee, please allow me to express our warm welcome and thanks to all the guests for attending this international signal processing conference! In the past 32 years, the IEEE ICSP Signal Processing Conference has experienced 15 times, this year's is the 16th one.

Signal processing, as an information science, intelligent science, big data and Internet based processing technology, has a wide range of applications, and have been applied in many fields. In this year's meeting, despite the serious situation of the epidemic, we still received a considerable number of papers, which were reviewed by the program committee, and 108 papers were accepted for the conference exchange! From the point of view of the paper content and units employed, it reflects that, research topics, research units and research contents are extensive and very in-depth, the practicability of all research results has been significantly enhanced.

We have invited three keynote speakers for this meeting. They are Prof.

Weisi Lin, Prof. Junhui Hou and Prof. Su Ruan. Due to traffic, some of them can only give reports online. Fortunately, the development of the network technology allows us may still reach the goals and achieve the effects of academic exchanges. The Program Committee appreciates very much for their efforts and contributions.

For the smooth opening of the conference, the staff members, paper reviewers and relevant departments, while completing their own work, have contributed a lot of labor to the conference. Let me also on behalf of the organizing committee express my great gratitude to them!

Wish the meeting a successful start! I wish all of you a fruitful academic exchange at the conference! Thank you very much!

WEI Shikui

Technical Program Chair

ICSP2022

ICSP2022 Keynote Speech

Title:

Quality Evaluation of Computer Generated & Partially-generated Visual Signals

Abstract:

With rapid advancement of visual signal acquisition, computing and networking, there are more and more scenarios to make use of computer generated (artificial) or partially-generated images and videos. Meaningful visual signals can be generated by computer graphics (CG) for VR, AR and even the emerging metaverse. In addition, partial visual content may be also generated as screen-content, retargeted, stitched, HDR tone-mapped, style-transferred, and DIBR images; various applications include screen capturing/analysis/matching, multi-client communication, content editing, remote education, native advertisement, and data augmentation for training. In this talk, different computational models are to be presented toward quality evaluation of generated or partially-generated visual signals, and their potential extensions and future directions will be also discussed, since quality assessment plays crucial roles in benchmarking and shaping related algorithms and systems.

Bio:

Weisi Lin researches in intelligent image and video processing, computational perceptual signal assessment, and multi-modality/media modeling. He received his B.Sc and M. Sc from Sun Yat-Sen University, China, and Ph.D. from King's College, U.K. He is currently a Professor in School of Computer Science and Engineering, Nanyang Technological University, Singapore, where he also serves as the Associate Chair (Research).

He is a Fellow of IEEE and IET, and has been a Highly Cited Researcher 2019, 2020 and 2021. He has elected as a Distinguished Lecturer in both IEEE Circuits and Systems Society (2016-17) and Asia-Pacific Signal and Information Processing Association (2012-13), and given keynote/invited/tutorial/panel talks in 40+ international conferences. He has been an Associate Editor for IEEE Trans. Neural Networks and Learning Syst., IEEE Trans. Image Process., IEEE Trans. Circuits Syst. Video Technol., IEEE Trans. Multimedia, IEEE Signal Process. Lett., Quality and User Experience, and J. Visual Commun. Image Represent., and a Senior Editor in APSIPA Trans. Info. and Signal Process, as well as a Guest Editor for 7 special issues in international journals. He also chaired

the IEEE MMTC QoE Interest Group (2012-2014); he has been a Technical Program Chair for IEEE ICME 2013, QoMEX 2014, PV 2015, PCM 2012 and IEEE VCIP 2017. He leads the Temasek Foundation Programme for AI Research, Education & Innovation in Asia, 2020-2025. He believes that good theory is practical, and has delivered 10+ major systems for industrial deployment with the technology developed.

Title:

Learning to Enhance 3D Point Clouds: from Static to Dynamic

Abstract:

3D point cloud data are widely used in immersive telepresence, cultural heritage reconstruction, geophysical information systems, autonomous driving, and virtual/augmented reality. Despite rapid development in 3D sensing technology, acquiring 3D point cloud data with high spatial and temporal resolution and complex geometry/topology is still time-consuming, challenging, or costly. This talk will present our recent studies on computational methods (i.e., deep learning)-based 3D point cloud reconstruction, including sparse 3D point cloud upsampling, 3D point cloud generation, and temporal interpolation of dynamic 3D point cloud sequences.

Bio:

Junhui Hou is an Assistant Professor with the Department of Computer Science, City University of Hong Kong. His research interests fall into the general areas of multimedia signal processing, such as image/video/3D geometry data representation, processing and analysis, graph-based data modeling, and data compression.

He received the Chinese Government Award for Outstanding Students Study Abroad from China Scholarship Council in 2015 and the Early Career Award (3/381) from the Hong Kong Research Grants Council in 2018. He is an elected member of IEEE MSA-TC, VSPC-TC, and MMSP-TC. He is currently an Associate Editor for IEEE Transactions on Image Processing, IEEE Transactions on Circuits and Systems for Video Technology, Signal Processing: Image Communication, and The Visual Computer. He also served as an Area Chair of various international conferences, including ACM MM, IEEE ICME, VCIP, ICIP, MMSP, and WACV.

Title:

Segmentation of multimodal medical images

Abstract:

In order to better delineate the tumor contour for its treatment, several medical imaging examinations, such as CT and PET images, are necessary for patients. The work to segment the tumor from multimodal images is an important issue for the diagnostic, radiotherapy or cancer outcome prediction. The challenge is how to efficiently fuse the multi-sources of information to improve tumor segmentation performance. In addition, it's common to have some missing MRI modalities in clinical practice due to different acquisition protocol, image corruption, scanner availability or scanning cost. Missing data make tumor segmentation even more difficult. In this talk, I will present our work which are based on deep learning to exploit latent features and fuse them to improve segmentation performance in the case of complete modalities or missing modalities. The proposed methods are applied on Brats MICAAI challenge datasets to show the good performance of our methods.

Bio:

Su RUAN received the M.S. and the Ph.D. degrees in image processing from the University of Rennes, France, in 1989 and 1993, respectively. From 2003 to 2010, she was a Full Professor with the University of Reims Champagne-Ardenne, France. She is currently a Full Professor with the Department of Medicine, Rouen Normandy University, France. Her research interests include pattern recognition, machine learning, information fusion, and medical imaging. She is currently an Associate Editor for Computerized Medical Imaging and Graphic, IRBM and Array. She served also as an Area Chair of various international conferences, such MICCAI et IEEE-ISBI.

ICSP2022 Final Program Details

Session#	Details
S01-01	A NOVEL VARIATIONAL DIGITAL FILTERING METHOD *Wei Zhang; Wenjie Lv; Anyong Hu; Jungang Miao* PaperID: A0018; Proc. Pages:1
S01-02	MINIMAX GAUSSIAN MIXTURE PARTICLE FILTERING *Hongwei Zhang* PaperID: B0117; Proc. Pages:7
S01-03	LFM SIGNAL PERCEPTION BASED ON WAVELET TRANSFORM AND TIME-FREQUENCY TECHNOLOGY *Xingcai Wang; Rubin Dan* PaperID: D0030; Proc. Pages:11
S01-04	POSITIONAL MODULATION DESIGN WITH DISCRETE PHASE VALUES FOR METASURFACE ELEMENTS *Maolin Li; Bo Zhang; Baoju Zhang; Wei Liu; Taekon Kim; Xiaonan Zhao; Zhikun Su; Cheng Wang* PaperID: F0008; Proc. Pages:16
S01-05	CONVOLUTIVE TRANSFER FUNCTION-BASED INDEPENDENT COMPONENT ANALYSIS FOR OVERDETERMINED BLIND SOURCE SEPARATION *Taihui Wang; Feiran Yang; Nan Li; Chen Zhang; Jun Yang* PaperID: F0020; Proc. Pages:22
S01-06	A BEAMSPACE MULTI-SOURCES DOA ESTIMATION METHOD FOR UAV CLUSTER SYSTEMS *Chenhao Zhang; Wenjie Wang; Xi Hong; Yue Wang* PaperID: F0072; Proc. Pages:27
S01-07	DESIGN OF PULSE AMPLITUDE ANALYSIS UNIT FOR NUCLEAR LOGGING BASED ON TRAPEZOIDAL SHAPING METHOD *Dahua Xu; Hai Li; Yudong Wang; Jun Wang* PaperID: G0034; Proc. Pages:32
S01-08	LANGUAGE CODE-SWITCHING DETECTION BASED ON BERT-LID *Yuting Nie; Wei Qiang Zhang; Zhe Ji; Gui Xin Shi* PaperID: H0003; Proc. Pages:36

S01-09 LOW-COMPLEXITY ACOUSTIC SCENE CLASSIFICATION USING DATA AUGMENTATION AND LIGHTWEIGHT RESNET
Yanxiong Li; Wenchang Cao; Wei Xie; Wei Xie; Qisheng Huang; Wenfeng Pang; Qianhua He
PaperID: H0016; Proc. Pages:41

S01-10 USING END-TO-END MULTITASK MODEL FOR SIMULTANEOUS LANGUAGE IDENTIFICATION AND PHONEME RECOGNITION
Linjia Sun
PaperID: H0026; Proc. Pages:46

S02-01 PACKET LOSS CONCEALMENT METHOD BASED ON THE SIMPLIFIED RESIDUAL NETWORK
Jinru Zhu; Changchun Bao; Jinwei Huang
PaperID: H0048; Proc. Pages:51

S02-02 LAPLACE DISTRIBUTION BASED DOA ESTIMATION
Haiwei Duan; Changchun Bao; Jing Zhou; Wenwen Li
PaperID: H0132; Proc. Pages:56

S02-03 CCASINGAN: CASCADED CHANNEL ATTENTION GUIDED SINGLE-IMAGE GANS
Xueqin Wang; Wenzong Jiang; Lifei Zhao; Baodi Liu; Yanjiang Wang
PaperID: J0015; Proc. Pages:61

S02-04 AN SELF-SUPERVISED CNN FOR IMAGE DENOISING WITH SELF-SIMILARITY PRIOR
Wenqian Fang; Hongwei Li
PaperID: J0037; Proc. Pages:66

S02-05 GLOBALLY CONSISTENT IMAGE INPAINTING BASED ON WGAN-GP NETWORK OPTIMIZATION
Na Ge; Wenhui Guo; Yanjiang Wang
PaperID: J0056; Proc. Pages:70

S02-06 RESEARCH ON UNDERWATER SMALL TARGET DETECTION ALGORITHM BASED ON IMPROVED YOLOV3
Jianfeng Li; Yiwen Zhu; Mingxu Chen; Yongling Wang; Zhiquan Zhou
PaperID: J0091; Proc. Pages:76

S02-07 VISUAL QUESTION ANSWERING BASED ON MULTIMODAL TRIPLET KNOWLEDGE ACCUMULATION
Fengjuan Wang; Gaoyun An
PaperID: J0152; Proc. Pages:81

S02-08 MULTISCALE IMAGE DEBLURRING NETWORK USING DUAL ATTENTION MECHANISM
Tao Zhang; Kerong Gai; Huihui Bai
PaperID: J0154; Proc. Pages:85

S02-09 TRANSFORMER-BASED ALGORITHM FOR COMMODITY DETECTION IN FISHEYE IMAGES
Chen Zhang; Tangwen Yang
PaperID: M0038; Proc. Pages:90

S02-10 FEATURE RE-ATTENTION AND MULTI-LAYER FEATURE FUSION FOR FINE-GRAINED VISUAL CLASSIFICATION
Kun Wang; Qingze Tian; Yanjiang Wang; Baodi Liu
PaperID: M0043; Proc. Pages:95

S03-01 A NOVEL COLLABORATIVE CONSISTENT LEARNING FOR PERSON RE-IDENTIFICATION
Xiaoman Wang; Ruidong Li; Li Wang; Kai Gao; Fang Cao; Qianjin Cui
PaperID: M0099; Proc. Pages:101

S03-02 MORPHOLOGICAL VALIDATION OF ANIMAL-SKELETON ESTIMATION RESULT
Jiejun Chen; Liang Wang; Yiguan Liao; Keyuan Su; Jian Cheng; Shaoteng Tang; Shizheng Chen
PaperID: M0103; Proc. Pages:106

S03-03 MULTI-SCALE FEATURE EXTRACTION MODEL WITH MOTION ATTENTION FOR HUMAN MOTION PREDICTION
Xu Zhang; Gaoyun An; Qiuqi Ruan
PaperID: M0108; Proc. Pages:110

S03-04 LIGHTWEIGHT OBJECT DETECTION BASED ON FEATURE SOFT FUSION AND ADAPTIVE ENHANCEMENT
Weiping Hou; Shaohai Hu; Xiaole Ma
PaperID: M0115; Proc. Pages:114

S03-05 TRANSFORMER-BASED SPARSE ENCODER AND ANSWER DECODER FOR VISUAL QUESTION ANSWERING
Longkun Peng; Gaoyun An; Qiuqi Ruan
PaperID: M0151; Proc. Pages:120

S03-06 HUMAN-OBJECT INTERACTION PREDICTION WITH NATURAL LANGUAGE SUPERVISION
Zhengxue Li; Gaoyun An
PaperID: M0153; Proc. Pages:124

S03-07 ITMIX: IMAGE-TEXT MIX AUGMENTATION FOR TRANSFERRING CLIP TO IMAGE CLASSIFICATION
Tao Hong; Xiangyang Guo; Jinwen Ma
PaperID: M0157; Proc. Pages:129

S03-08 EMOTION RECOGNITION FROM EEG SIGNAL USING CA-GCN
Renchuan Gao; Yongwei Li; Xuefei Liu; Bin Liu; Jianhua Tao; Zhao Lv
PaperID: N0040; Proc. Pages:134

S03-09 EMOTION RECOGNITION BASED ON DOUBLE FILTRATION SIGNALS LEARNING NETWORK ON DIFFERENT HEMISPHERES
Wenhui Guo; Guixun Xu; Yanjiang Wang
PaperID: O0023; Proc. Pages:139

S03-10 OBJECT TRACKING BASED ON SIAMESE NETWORK WITH MULTIPLE GRAPH ATTENTIONS
Shilei Yan; Yujuan Qi; Yanjiang Wang; Baodi Liu
PaperID: O0027; Proc. Pages:145

S04-01 SEMANTIC MEMORY NEURAL NETWORK MODEL BASED ON TWO-DIMENSION CODING METHOD
Zhen Zhang; Guixun Xu; Wenzong Jiang; Yanjiang Wang
PaperID: O0055; Proc. Pages:150

S04-02 MULTI-KERNEL EXCITATION NETWORK FOR VIDEO ACTION RECOGNITION
Qingze Tian; Kun Wang; Baodi Liu; Yanjiang Wang
PaperID: O0062; Proc. Pages:155

S04-03 BRAIN-INSPIRED HIERARCHICAL ATTENTION RECURRENT CNN FOR IMAGE CLASSIFICATION
Xinjing Song; Yanjiang Wang; Baodi Liu; Weifeng Liu

PaperID: O0063; Proc. Pages:160

S04-04 SUPERPOSED LINEAR REPRESENTATION IN REPRODUCING KERNEL HILBERT SPACE FOR IMAGE CLASSIFICATION

Jie Meng; BaoDi Liu; Libo Yao; Tiantian Wang

PaperID: O0064; Proc. Pages:166

S04-05 LIGHTWEIGHT OF SUPERVISED PERSON RE-IDENTIFICATION VIA KNOWLEDGE DISTILLATION

Xiaobin Wang; Jun Wang; Weifeng Liu; Baodi Liu

PaperID: O0076; Proc. Pages:172

S04-06 LV-YOLOV5: A LIGHT-WEIGHT OBJECT DETECTOR OF VIT ON DRONE-CAPTURED SCENARIOS

Jun Wang; Weifeng Liu; Weishan Zhang; Baodi Liu

PaperID: O0078; Proc. Pages:178

S04-07 IMPROVED VIT VIA KNOWLEDGE DISTALLATION ON SMALL DATASETS

Jun Wang; Weifeng Liu; Weishan Zhang; Baodi Liu

PaperID: O0079; Proc. Pages:184

S04-08 TRANSDUCTIVE GRAPH-ATTENTION NETWORK FOR FEW-SHOT CLASSIFICATION

Lili Pan; Weifeng Liu

PaperID: O0084; Proc. Pages:190

S04-09 AFFINE NON-NEGATIVE REPRESENTATION FOR FEW-SHOT REMOTE SENSING SCENE CLASSIFICATION

Chunyu Du; Baodi Liu; Yanjiang Wang

PaperID: O0088; Proc. Pages:196

S04-10 GENERALIZED ZERO-SHOT LEARNING BASED ON MANIFOLD ALIGNMENT

Rui Xu; Shuai Shao; Baodi Liu; Weifeng Liu

PaperID: O0092; Proc. Pages:202

S05-01 RESEARCH ON QUANTITATIVE INFERENCE ACCELERATION TECHNOLOGY OF CONVOLUTIONAL NEURAL NETWORK FOR ARM PLATFORM

Xuqiang Wang; Qianyi Zhang; Yifan Yang; Xiangrui Zong

PaperID: P0007; Proc. Pages:208

S05-02 AE5-SSIM: A NOVEL UNSUPERVISED TINFOILS DEFECT DETECTION MODEL WITH DEEP AUTOENCODER

Fanghui Zhang; Linna Zhang; Damin Zhang; Yansen Huang; Shichao Kan; Yigang Cen

PaperID: P0017; Proc. Pages:212

S05-03 MEMORY ENHANCED REPLAY FOR CONTINUAL LEARNING

Guixun Xu; Wenhui Guo; Yanjiang Wang

PaperID: P0021; Proc. Pages:218

S05-04 ADAPTIVE LINEAR UNIT FOR ACCURATE BINARY NEURAL NETWORKS

Ruchan Mo; Ke Xu; Li Liu; Lingzhi Liu; Dong Wang

PaperID: P0041; Proc. Pages:223

S05-05 TAILORED 3D CT CONTRASTIVE PRETRAINING TO IMPROVE PULMONARY PATHOLOGY CLASSIFICATION

Djahnine Aissam; Popoff Alexandre; Jupin-Delevaux Emilien; Cotin Vincent; Nempont Olivier; Boussel Loic

PaperID: P0069; Proc. Pages:229

S05-06 SPATIAL ATTENTION BASED SEMANTIC DECOUPLE NETWORK FOR BREAST TUMOR SEGMENTATION

Li Wang; Lihui Wang; Qijian Chen; Feng YANG; Yuemin ZHU

PaperID: P0080; Proc. Pages:235

S05-07 FEATURE PYRAMID NETWORK BASED ON DOUBLE FILTER FEATURE FUSION FOR HYPERSPECTRAL IMAGE CLASSIFICATION

Ge Wang; Wenhui Guo; Yanjiang Wang; Wuli Wang

PaperID: P0089; Proc. Pages:240

S05-08 ENVIRONMENTAL SOUND CLASSIFICATION BASED ON KNOWLEDGE DISTILLATION

Qianjin Cui; Kun Zhao; Li Wang; Kai Gao; Fang Cao; Xiaoman Wang

PaperID: P0098; Proc. Pages:245

S05-09 AMV-TSN: TEMPORAL SEGMENT NETWORKS BASED ON APPEARANCE AND MOTION-VARIATION FOR VIDEOS

Yanshan Li; Hailin Zong; Qingteng Li; Rui Yu

PaperID: P0109; Proc. Pages:250

S05-10 SCORE-CAMPP: CLASS ACTIVATION MAP BASED ON LOGARITHMIC TRANSFORMATION

Ting Shi; Yanshan Li; Huajie Liang; Rui Yu

PaperID: P0110; Proc. Pages:256

S06-01 THE METHOD OF INDUSTRIAL INTERNET IMAGE SUPER-RESOLUTION BASED ON TRANSFORMER

Lin Liu; Yingjie Yu; Juncheng Wang; Yi Jin; Yuqiao Zeng

PaperID: P0119; Proc. Pages:260

S06-02 AN IMPROVED ALGORITHM OF WORD SEMANTIC SIMILARITY BASED ON HOWNET

Bochen KANG; Junpeng Qi

PaperID: P0122; Proc. Pages:266

S06-03 DISTILLING THE KNOWLEDGE IN OBJECT DETECTION WITH ADAPTIVE BALANCE

Hongyun Lu; Zhi Liu; Mengmeng Zhang

PaperID: P0137; Proc. Pages:272

S06-04 AN IMPROVED TRAFFIC FLOW PREDICTION MODEL: SPATIAL-TEMPORAL NETWORK BASED ON WAVELET AND LSTM

Ran Cheng; Zhi Liu; Mengmeng Zhang

PaperID: P0146; Proc. Pages:276

S06-05 TRANSFORMER-BASED NATURAL LANGUAGE UNDERSTANDING AND GENERATION

Feng Zhang; Gaoyun An; Qiuqi Ruan

PaperID: P0147; Proc. Pages:281

S06-06 DBHDR: DUAL BRANCH NETWORK GUIDED MULTI-EXPOSURE HDR IMAGE RECONSTRUCTION

Ziwei Pang; Huihui Bai

PaperID: P0156; Proc. Pages:285

S06-07 BEYOND SIMPLE ARGUMENTATION: IMAGE LEARNABLE TRANSFORMATION FOR EFFICIENT REINFORCEMENT LEARNING

Fengqi Dai; Chunjie Zhang

PaperID: P0160; Proc. Pages:289

S06-08 ACHIEVING PHYSICAL LAYER SOURCE LOCATION PRIVACY TRANSMISSION BY DF RELAY

Menghan Lin; Wenjie Wang

PaperID: Q0051; Proc. Pages:295

S06-09 JOINT OPTIMIZATION OF EDGE CACHING AND COLLECTIVE RECOMMENDATION FOR OFFLOADING MAXIMIZATION
Shengqian Han; Dasen Wei
PaperID: Q0126; Proc. Pages:300

S06-10 SIGHT GUIDANCE ENHANCED VR VIDEO TRANSMISSION
Yuwei Dai; Shengqian Han
PaperID: Q0127; Proc. Pages:305

S07-01 DETECTION ALGORITHM OF FREQUENCY HOPPING SIGNALS BASED ON S TRANSFORM AND DEEP LEARNING
Chun Li; Zhijin Zhao; Ying Chen
PaperID: Q0148; Proc. Pages:310

S07-02 MKDNAD:A NETWORK FLOW ANOMALY DETECTION METHOD BASED ON MULTI-TEACHER KNOWLEDGE DISTILLATION
Yang Yang; Dan Liu
PaperID: R0036; Proc. Pages:314

S07-03 ECG-BASED CROSS-SUBJECT MENTAL STRESS DETECTION VIA DISCRIMINATIVE CLUSTERING ENHANCED ADVERSARIAL DOMAIN ADAPTATION
Yalan Ye; Tonghoujun Luo; Wenxia Huang; Ying Sun; Lu Li
PaperID: T0033; Proc. Pages:495

S07-04 HYPERGRAPH LAPLACIAN DIFFUSION MODEL FOR PREDICTING RESTING BRAIN FUNCTIONAL CONNECTIVITY FROM STRUCTURAL CONNECTIVITY
Jichao Ma; Yue Yuan; Yanjiang Wang
PaperID: U0054; Proc. Pages:500

S07-05 STOCHASTIC RADIATION RADAR HIGH-RESOLUTION IMAGING METHOD BASED ON SINGULAR VALUE WEIGHTED TRUNCATION
Qianyang Qin; Yin Zhang; Deqing Mao; Fanyun Xu; Yongchao Zhang
PaperID: W0006; Proc. Pages:505

S07-06 THE DOA ESTIMATION ALGORITHM OF SHIP SWING BASED ON SHIP-BORNE RADAR
Rui SHI; Jia DING; Zhenyuan JI
PaperID: W0013; Proc. Pages:509

S07-07 SPOTLIGHT SAR IMAGING BASED ON PLANAR WAVEFRONT ASSUMPTION AND AN EXTENDED KEYSTONE TRANSFORM
Shengliang Han; Daiyin Zhu; Xingwei Meng; Tianshun Xiang
PaperID: W0019; Proc. Pages:513

S07-08 DISTRIBUTED COHERENT APERTURE RADAR ON MOVING PLATFORMS: THEORETICAL STUDY AND TESTS
Dingsen Zhou; Minglei Yang; Rong Yang; Fa Wei; Wan Ouyang; Hao Lian
PaperID: W0071; Proc. Pages:518

S07-09 A MODIFIED WEIGHTING SCHEME FOR THE AUTOMATIC TASKER OF SPACE SURVEILLANCE NETWORK
Junling Wang; Xiaoyu Zheng; Jiakang Shen; Peng Lv
PaperID: W0104; Proc. Pages:524

S07-10 IGRFT-BASED SIGNAL COHERENT INTEGRATION METHOD FOR HIGH-SPEED TARGET WITH AIRBORNE BISTATIC RADAR
Fan Yang; Xiaolong Li; Mingxing Wang; Zhi Sun; Guolong Cui
PaperID: W0113; Proc. Pages:529

S08-01 A VIDEO ABNORMAL DETECTION FRAMEWORK BASED ON APPEARANCE-MOTION FUSE MEMORY
Yinshuo Sun; Tao Cui; Gaoyun An; Qiuqi Ruan
PaperID: Y0114; Proc. Pages:535

S08-02 FENET: AN EFFICIENT FEATURE EXCITATION NETWORK FOR VIDEO-BASED HUMAN ACTION RECOGNITION
Zhan Zhang; Yi Jin; Songhe Feng; Yidong Li; Tao Wang; Hui Tian
PaperID: Y0124; Proc. Pages:540

S08-03 RELIABLIZATION OF FALL RECOGNITION VIA MORPHOLOGICAL ANALYSIS
Keyuan Su; Liang Wang; Jiejun Chen; Xueyi Zhang; Zhe Cao; Daming Tian
PaperID: Y0149; Proc. Pages:545

S08-04 DEEP LEARNING-BASED RECOGNITION OF CHINESE DISHES IN A WAITERLESS RESTAURANT
Shanzhen Lan; Chengjuan Wan; Lan Chen; Mingxue Jin; Shaode Yu
PaperID: Z0002; Proc. Pages:390

S08-05 LOGGING INTERPRETATION METHOD BASED ON BAYESIAN OPTIMIZATION XGBOOST
Rui Ma; Qiang Xing; Jinyan Zhang; Jun Wang; Yanjiang Wang
PaperID: Z0025; Proc. Pages:395

S08-06 GRAVEL EXTRACTION FROM FMI BASED ON DSAM-DEEPLABV3+ NETWORK
Zaifeng Jiao; Qiang Xing; Jinyan Zhang; Jun Wang; Yanjiang Wang
PaperID: Z0028; Proc. Pages:405

S08-07 SIMULATION OF UNDERWATER BROADBAND NOISE SIGNALS' DOPPLER FREQUENCY SHIFT
Yuan ZHENG; Gang YANG; Qichao GUO
PaperID: Z0083; Proc. Pages:566

SLiu-01 INTELLIGENT VIDEO ANALYSIS SYSTEM FOR RAILWAY STATION
Shuoyan LIU; Wenzong ZHANG; Enze YANG; Yuxin LIU; Shitao ZHAO; Yushan ZHANG
PaperID: SS.Liu0134; Proc. Pages:320

SLiu-02 SELF-SUPERVISED PRE-TRAINING WITH LEARNABLE TOKENIZERS FOR PERSON RE-IDENTIFICATION IN RAILWAY STATIONS
Enze Yang; Chao Li; Shuoyan Liu; Yuxin Liu; Shitao Zhao; Nan Huang
PaperID: SS.Liu0136; Proc. Pages:325

SLiu-03 RESEARCH ON SELF-TUNING PID OF SCALE FACTOR IN THE CONTROL SYSTEM OF SOLAR WATER-HEATER
Shuai Liang; Shuoyan Liu; Yiran Liu; Guorui Wan; Feifan Qiao; Chao Li
PaperID: SS.Liu0139; Proc. Pages:331

SLiu-04 LOST-FOUND ITEM NET FOR CLASSIFICATION BASED ON INCEPTION-RESNET
Yuxin Liu; Kai Fang; Enze Yang; Shitao Zhao; Shuoyan Liu; Ran He
PaperID: SS.Liu0141; Proc. Pages:335

SLiu-05 RESEARCH ON RECOMMENDATION SYSTEM FOR RAILWAY INTELLIGENT MONITORING
Shitao ZHAO; Hong LI; Shuoyan LIU; Yuxin LIU; Enze YANG; Wei TAO
PaperID: SS.Liu0142; Proc. Pages:339

SLiu-06 INTELLIGENT WATER SUPPLY CONTROL SYSTEM IN RAILWAY STATION
Yiran Liu; Shuoyan Liu; HongCai Liu; Shuai Liang; Binbin Lv; Fen Liu
PaperID: SS.Liu0145; Proc. Pages:343

SQu-01 RELIABILITY ANALYSIS OF LOESS BACKFILLING SLOPE STABILITY BY MONTE CARLO SIMULATION

Haiyang Zhang; Xuguo Song; Shuaijie Guo; Muhan Yan

PaperID: SS.Qu0024; Proc. Pages:348

SQu-02 ANALYSIS OF LOAD TRANSFER IN GEOSYNTHETIC-REINFORCED PILE-SUPPORTED EMBANKMENTS

Muhan Yan; Xuguo Song; Hong Xiao; Shuaijie Guo; Haiyang Zhang; Ishola Valere Loic Chango

PaperID: SS.Qu0031; Proc. Pages:354

SQu-03 FEATURE CROSS FUSION - ATTENTION MECHANISM FOR INTELLIGENT SEMANTIC SEGMENTATION OF SURFACE FEATURES AROUND RAILWAY

Xuesong Fu; Changjin Wang; Jianlin Wang; Zujie Han; Chunyu Qi

PaperID: SS.Qu0032; Proc. Pages:359

SQu-04 LTE-R COMMUNICATION QUALITY PREDICTION BASED ON ECA-TCN AND EEMD

Jiantao Qu; Chunyu Qi; Gaoyun An; Yuxiang Ma

PaperID: SS.Qu0068; Proc. Pages:365

SQu-05 DISTRIBUTED ACOUSTIC SENSOR SIGNAL DENOISING METHOD BASED ON CEEMDAN-MPE

Meng He; Zichao Wang; Jiantao Qu

PaperID: SS.Qu0096; Proc. Pages:371

SQu-06 RESEARCH ON INTELLIGENT CONSTRUCTION TECHNOLOGY OF PREFABRICATED RAILWAY BRIDGE

Chenglong Qi; Yan Li

PaperID: SS.Qu0111; Proc. Pages:375

SQu-07 STUDY ON MECHANISM OF DEEP SCREW PLATE LOADING TEST

Pengcheng Ma; Run Liu; Guohe Li; Peng Li; Xinjun Chen

PaperID: SS.Qu0116; Proc. Pages:379

SQu-08 OPTIMAL DESIGN OF DCS SUBSYSTEM MONITORING FOR URBAN RAIL TRANSIT SIGNAL SYSTEM UNDER CROSS-LINE NETWORK

Cheng Liang; Xinzheng Yang; Xujie Feng; Shuhao Liu

PaperID: SS.Qu0118; Proc. Pages:384

SQu-09 TOP-DOWN DESIGN METHOD OF STATION SUBGRADE SURFACE BIM MODEL BASED ON CONSTITUTING SURFACE METHOD WITH MULTI-CHARACTERISTIC LINES

Kaijun Wang; Ran An; Xinyu Liu; Jiantao Qu

PaperID: SS.Qu0129; Proc. Pages:401

SZhu-O1 AN END-TO-END FRAMEWORK FOR UNIVERSAL LESION DETECTION WITH MISSING ANNOTATIONS

Xiaoyu Bai; Yong Xia

PaperID: SS.Zhu0035; Proc. Pages:411

SZhu-O10 ACCELERATING MULTI-ECHO MRI IN K-SPACE WITH COMPLEX-VALUED DIFFUSION PROBABILISTIC MODEL

Ying Cao; Lihui Wang; Jian Zhang; Hui Xia; Feng Yang; Yuemin Zhu

PaperID: SS.Zhu0087; Proc. Pages:479

SZhu-O2 FEW-SHOT LEARNING FOR BRAIN TUMOR SEGMENTATION FROM MRI IMAGES

Abdelouahad Achmamad; Fethi Ghazouani; Su Ruan

PaperID: SS.Zhu0095; Proc. Pages:489

SZhu-O3 MULTI-INSTANCE CLASSIFICATION OF HISTOPATHOLOGICAL BREAST CANCER IMAGES WITH VISUAL EXPLANATION

Feng He; Yuemin Zhu; Weibo Wang; Abiyasi Nanding; Zixiang Kuai; Xiaomei Li; Zhengjun Liu

PaperID: SS.Zhu0052; Proc. Pages:431

SZhu-O4 CONTINUAL LEARNING OF MEDICAL IMAGE CLASSIFICATION BASED ON FEATURE REPLAY

Xiaojie Li; Haifeng Li; Lin Ma

PaperID: SS.Zhu0050; Proc. Pages:426

SZhu-O5 SET-VALUED MEDICAL IMAGE CLASSIFICATION WITH EVIDENTIAL CNN: A FIRST TEST WITH COVID-19 DATASET

Lele Dong; Lunde Chen; Suyao Kong; Siyuan Gu; Wanyu Liu; Shuimiao Du

PaperID: SS.Zhu0081; Proc. Pages:463

SZhu-O6 GLIOMA GRADE PREDICTION USING A CROSS-FUSION NETWORK BASED ON UNSEGMENTED MULTI-SEQUENCE MAGNETIC RESONANCE IMAGES

Qijian Chen; Lihui Wang; ShunChao Guo; Hui Xia; Feng Yang; Yuemin Zhu

PaperID: SS.Zhu0074; Proc. Pages:447

SZhu-O7 MORTALITY PREDICTION WITH BIDIRECTIONAL COUPLED AND GUMBEL SUBSET NETWORK ON IRREGULARLY MULTIVARIATE TIME SERIES

Qinfen Wang; Siyuan Ren; Yong Xia

PaperID: SS.Zhu0082; Proc. Pages:468

SZhu-O8 MR IMAGE SYNTHESIS USING RIEMANNIAN GEOMETRY CONSTRAINED IN VAE

Jannane Nada; Jérome Lapuyade-Lahorgue; Fethi Ghazouani; Sébastien Bougleux; Su Ruan

PaperID: SS.Zhu0094; Proc. Pages:485

SZhu-O9 EFFECT OF DIFFERENT CON_FIGURATIONS OF DIFFUSION GRADIENT DIRECTIONS ON ACCURACY OF DIFFUSION TENSOR ESTIMATION IN CARDIAC DTI

Yunlong He; Lihui Wang; Feng Yang; Patrick Clarysse; Marc Robini; Yuemin Zhu

PaperID: SS.Zhu0053; Proc. Pages:437

SZhu-P1 AN IMPROVED ALGORITHM COMBINING ATTENTION MECHANISM AND FEATURE FUSION FOR CIRCULATING TUMOR CELLS DETECTION

Mingcan Chen; Xiaolei Li; Jingjing Xu; Wanyu Liu

PaperID: SS.Zhu0047; Proc. Pages:416

SZhu-P2 IMPACT OF MR SEQUENCES CHOICE ON DEEP LEARNING SEGMENTATION OF MUSCLES

Maylis Jouvencel; Hoai-Thu Nguyen; Magalie Viallon; Pierre Croisille; Thomas Grenier

PaperID: SS.Zhu0049; Proc. Pages:420

SZhu-P3 GST: A BRAIN-INSPIRED GRAPH SIGNAL TRANSMITTER FOR BIOMEDICAL IMAGE SEGMENTATION

Caiqing Jian; Yongbin Qin; Lihui Wang; Hui Xia; Yuemin Zhu

PaperID: SS.Zhu0070; Proc. Pages:442

SZhu-P4 ADAPTIVE TEMPORAL INFORMATION FUSION NETWORK FOR IN VIVO CARDIAC DTI MOTION COMPENSATION

Zeyu Deng; Lihui Wang; Chen Ye; Ying Cao; Feng YANG; Yuemin ZHU

PaperID: SS.Zhu0075; Proc. Pages:452

SZhu-P5 A DUAL-FLOW NEURAL NETWORK FOR MEDICAL IMAGE REGISTRATION

Kun Tang; Lihui Wang; Xinyu Cheng; Hui Xia; Feng Yang; Yuemin Zhu

PaperID: SS.Zhu0077; Proc. Pages:458

SZhu-P6 CARDIAC STRAIN MEASUREMENT WITH DENSE MRI: A REVIEW

Zinan LIU; Wanyu LIU; Patrick Clarysse

PaperID: SS.Zhu0085; Proc. Pages:474

Program

PT: Paris time/**BT:** Beijing time=PT+6h **(**7:55am PT/1:55pm BT)
October 24, 2022 (7:55am PT/1:55pm BT)

Link for the oral presentation:
https://cnrs.zoom.us/j/97753967557?pwd=VzNMUURzVlFPcnd4STJxZVcvOWVjdz09
ID de réunion : 977 5396 7557
Code secret : cMAk1j
Link for the poster room:
https://app.spatial.chat/invite/g/HvyjTdHRSukM5ouDLPuY

7:55am PT Introduction to MAI Workshop:
Patrick CLARYSSE, Yuemin ZHU (CREATIS, Université de Lyon & IRP METISLAB)

Oral session 1, Detection, segmentation, classification. Chair: WANG Lihui (Guizhou University)

8:00am PT: An End-to-End Framework For Universal Lesion Detection With Missing Annotations
Xiaoyu BAI et al.
Northwestern Polytechnical University

8:15am PT: Few-shot learning for brain tumor segmentation from MRI images
abdelouahad ACHMAMAD et al.
LITIS, University of Rouen

8:30am PT: Multi-Instance Classification of Histopathological Breast Cancer Images with Visual Explanation,
Feng HE et al.
CREATIS, Université de Lyon; Harbin Institute of Technology

8:45am PT: Continual learning of medical image classification based on feature replay
Xiaojie LI et al.
Harbin Institute of Technology

Oral session 2, Classification & Prediction. Chair: ZHAO Yue (Harbin Institute of Technology)

09:00am PT: Set-Valued Medical Image Classification with Evidential CNN: A First Test with Covid-19 Dataset
Lele DONG et al.
Shanghai University

09:15am PT: Glioma grade prediction using a cross-fusion network based on unsegmented multi-sequence magnetic resonance images
Qijian CHEN et al.
College of Computer Science and Technology, Guizhou University ; CREATIS, Université de Lyon

09:30am PT: Mortality Prediction with Bidirectional Coupled and Gumbel Subset Network on Irregularly Multivariate Time Series
Qinfen WANG et al.
Northwestern Polytechnical University

09:45am PT: *Break*

Oral session 3, Image synthesis & cardiac MRI. Chair: GRENIER Thomas (CREATIS, INSA-Lyon)

10:00am PT: MR image synthesis using Riemannian geometry constrained in VAE
Jannane NADA et al.
Dpt Computer Sciences, Aix-Marseille University; LITIS, University of Rouen; GREYC University of Caen

10:15am PT: Effect of different configurations of diffusion gradient directions on accuracy of diffusion tensor estimation in cardiac DTI
Yunlong HE et al.
CREATIS, Université de Lyon ; College of Computer Science and Technology, Guizhou University

10:30am PT: Accelerating multi-echo MRI in k-space with complex-valued diffusion probabilistic model
Ying CAO et al.
College of Computer Science and Technology, Guizhou University ; CREATIS, Université de Lyon

Poster session, Chair: XU Jingjing (Shanghai University)

10:45am PT: Flash poster presentations (3')

- An improved algorithm combining attention mechanism and feature fusion for circulating tumor cells detection
  Mingcan CHEN et al.
  Shanghai University
- Impact of MR sequences choice on deep learning segmentation of muscles
  Maylis JOUVENCEL et al.
  CREATIS, Université de Lyon
- GST: A Brain-Inspired Graph Signal Transmitter for Biomedical Image Segmentation
  Caiqing JIAN et al.
  College of Computer Science and Technology, Guizhou University ; CREATIS, Université de Lyon
- Adaptive temporal information fusion network for in vivo cardiac DTI motion compensation
  Zeyu DENG
  College of Computer Science and Technology, Guizhou University ; CREATIS, Université de Lyon
- A dual-flow neural network for medical image registration
  Kun TANG et al.
  College of Computer Science and Technology, Guizhou University ; CREATIS, University of Lyon
- Spatial Attention based Semantic Decouple Network for Breast Tumor Segmentation
  Li WANG et al.
  College of Computer Science and Technology, Guizhou University ; CREATIS, University of Lyon
- Cardiac strain measurement with DENSE MRI: a review
  Zinan LIU et al.
  Shanghai University; CREATIS, University of Lyon

11:10am PT: Discussion in the poster room

11:40am PT: Open discussion: collaborative actions and future of MAI workshops

12:00am PT: End of the workshop.