PROCEEDINGS OF SPIE

Eleventh International Conference on Graphics and Image Processing (ICGIP 2019)

Zhigeng Pan
Xun Wang
Editors

12–14 October 2019
Hangzhou, China

Sponsored by
College of Computer Science, Sichuan University (China)
Ocean University of China (China)
University of Portsmouth (United Kingdom)

Organized by
School of Computer and Information Science (SCIE) of Zhejiang Gongshang University (China)

Published by
SPIE

Volume 11373

Part One of Two Parts

Proceedings of SPIE 0277-786X, V. 11373

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Eleventh International Conference on Graphics and Image Processing (ICGIP 2019), edited by
Zhigeng Pan, Xun Wang, Proc. of SPIE Vol. 11373, 1137301 · © 2020 SPIE
CCC code: 0277-786X/20/$21 · doi: 10.1117/12.2561685

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEDigitalLibrary.org.

The papers reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from these proceedings:
Author(s), "Title of Paper," in *Eleventh International Conference on Graphics and Image Processing (ICGIP 2019)*, edited by Zhigeng Pan, Xun Wang, Proceedings of SPIE Vol. 11373 (SPIE, Bellingham, WA, 2020) Seven-digit Article CID Number.

ISSN: 0277-786X
ISSN: 1996-756X (electronic)

ISBN: 9781510635234
ISBN: 9781510635241 (electronic)

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time)· Fax +1 360 647 1445
SPIE.org
Copyright © 2020, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is $21.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/20/$21.00.

Printed in the United States of America by Curran Associates, Inc., under license from SPIE.

Publication of record for individual papers is online in the SPIE Digital Library.

SPIE. DIGITAL LIBRARY
SPIEDigitalLibrary.org

Paper Numbering: *Proceedings of SPIE* follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

- The first five digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.

Contents

xi *Authors*

xv *Conference Committees*

xvii *Introduction*

Part One

SESSION 1 PATTERN RECOGNITION

11373 02 **Triggered attention model for scene text recognition** [11373-119]

11373 03 **Deformable hourglass network with face region normalization for robust face alignment** [11373-12]

11373 04 **Recommending the most confusing images to the annotators via confusion graph for the large-scale face dataset annotation** [11373-136]

11373 05 **Automatic tree species identification from natural bark image** [11373-14]

11373 06 **FRCA: High-efficiency container number detection and recognition algorithm with enhanced attention** [11373-20]

11373 07 **Group-level emotion recognition based on faces, scenes, skeletons features** [11373-3]

11373 08 **A non-iterative fuzzy neural classifier for face recognition** [11373-37]

11373 09 **An identification methods of under-segmented regions in segmented lung mask** [11373-39]

11373 0A **Evaluating the influence of separated RGB channels with ensemble learning** [11373-4]

11373 0B **Channel convolution residual block for person re-identification** [11373-42]

11373 0C **A plug-and-play LSTM-based attention module for person re-identification** [11373-44]

11373 0D **Light field camera based automatic algorithm for optimal face search** [11373-47]

11373 0E **Research on still image activity recognition based on deep learning** [11373-53]

11373 0F **Research on the text detection and recognition in natural scene images** [11373-93]

SESSION 2 TARGET DETECTION

11373 0G **Saliency detection based on non-local neural networks in low-contrast images** [11373-125]

11373 0H **Supervised adversarial networks for image saliency detection** [11373-17]

11373 0I **Application of target tracking and abnormal target detection algorithm in power network security** [11373-22]

11373 0J **Spacing detection method for shearing interference fringes containing speckle noises** [11373-23]

11373 0K **Rail surface defect detection based on deep learning** [11373-28]

11373 0L **Summary of object detection based on convolutional neural network** [11373-31]

11373 0M **Cloud automatic detection in high-resolution satellite images based on morphological features** [11373-32]

11373 0N **A strip steel wave-edge detection algorithm based on convex hull detection** [11373-38]

11373 0O **Scaling loss: updating gradient of loss for accurate object detection** [11373-40]

11373 0P **CNN-based blade tip vortex region detection in flow field** [11373-46]

11373 0Q **Detection of carotid intima and media thicknesses based on ultrasound B-mode images clustered with Gaussian mixture model** [11373-55]

11373 0R **Tiny-RetinaNet: a one-stage detector for real-time object detection** [11373-56]

11373 0S **Scene distortion detection on a series of multi-temporal remote sensing images of the same territory** [11373-6]

11373 0T **Sea surface ships detection method of UAV based on improved YOLOv3** [11373-80]

SESSION 3 FEATURE EXTRACTION AND MATCHING

11373 0U **Self-weighted locality discriminative feature selection** [11373-101]

11373 0V **Dilated convolutional neural network for hyperspectral image feature extraction and classification** [11373-142]

11373 0W **An accurate and efficient image registration algorithm in the aerial infrared images** [11373-16]

11373 0X **Camera self-calibration using linear features from targets** [11373-21]

11373 0Y **Texture image retrieval based on statistical feature fusion** [11373-5]

11373 0Z **Generating description with multi-feature and saliency maps of image** [11373-92]

SESSION 4 IMAGE TRANSFORMATION AND ANALYSIS

11373 10 **A method of extracting target trajectory by deep convolution network in infrared images** [11373-104]

11373 11 **A deep convolutional neural network-based low-light image enhancement using illumination map** [11373-109]

11373 12 **Narrowband image extraction for multispectral filter array** [11373-25]

11373 13 **Elimination method for the influence of illumination on color image based on wavelet transform** [11373-29]

11373 14 **Fixed-point predictive AMBTC image compression** [11373-58]

11373 15 **A comparison study for image compression based on compressive sensing** [11373-60]

11373 16 **An improved non-rigid registration algorithm for SAR image based on thin plate spline** [11373-63]

11373 17 **A novel puzzle-based image steganography technique** [11373-66]

11373 18 **Laplacian embedded sparse subspace clustering** [11373-97]

SESSION 5 IMAGE SEGMENTATION

11373 19 **Single image dehazing using a novel criterion based segmenting dark channel prior** [11373-121]

11373 1A **Automatic segmentation of macula in retinal flourescein angiography images** [11373-15]

11373 1B **Automated brain tumor segmentation using cascaded bootstrapping model** [11373-45]

11373 1C **Encoder-decoder with multi-scale information fusion for semantic image segmentation** [11373-85]

11373 1D **Two stage registration-based automatic left ventricle myocardium segmentation of cardiac 4DCT images** [11373-89]

11373 1E **Image segmentation based on SOFM in camouflage design** [11373-9]

11373 1F **Interactive image segmentation via superpixel pairs probabilistic diffusion** [11373-96]

SESSION 6 IMAGE ALGORITHM AND CALCULATION

11373 1G **A CU-level adaptive decision method for CNN-based in-loop filtering** [11373-10]

11373 1H **Complex spatial region representation and similar matching for multi-object image retrieval** [11373-102]

11373 1I **Verification of affordable house from GF-1 panchromatic image by geographic constraint** [11373-11]

11373 1J **Semi-supervised image classification via attention mechanism and generative adversarial network** [11373-126]

11373 1K **Sunflower seed sorting based on Convolutional Neural Network** [11373-129]

11373 1L **A generative-predictive framework used for video conversion** [11373-133]

11373 1M **Perceptual spatial-temporal video compressive sensing network** [11373-140]

Part Two

11373 1N **Multi-granularity convolutional network for crowd counting** [11373-18]

11373 1O **A novel classification method of wall in rural housing pictures based on adapnet network** [11373-57]

11373 1P **A spatiotemporal convolutional network approach for convection storm nowcasting** [11373-64]

11373 1Q **Infrared small target tracking in complex background based on trajectory prediction** [11373-67]

11373 1R **An improved hybrid CNN for hyperspectral image classification** [11373-70]

11373 1S **Lightweight compressed depth neural network for tomato disease diagnosis** [11373-8]

11373 1T **An adaptive fast Inter mode decision algorithm for AVS2** [11373-87]

11373 1U **Efficient architecture and protocol for image acquisition** [11373-98]

SESSION 7 MEDICAL IMAGE PROCESSING

11373 1V **Three-dimensional cranial image registration based on geometric transformation** [11373-144]

11373 1W **Automatic optic disc location via adaptive multi-scale Gaussian filtering** [11373-146]

11373 1X **An adaptive morphology template methods for correcting lung juxtapleural nodules regions in CT images** [11373-33]

11373 1Y **Electron microscopic sequential images stitching based on belief propagation** [11373-7]

11373 1Z **Improving the diagnosis of lung cancer based on multiparametric MRI** [11373-78]

SESSION 8 COMPUTER GRAPHICS AND APPLICATIONS

11373 20 **Multiview graph kernel based on popular methods** [11373-127]

11373 21 **Research on graphic generation technology of airborne cockpit display system** [11373-141]

11373 22 **A new super-resolution method for monochrome camera array imaging** [11373-68]

11373 23 **Automated pixel correspondence searching method using CNN and Z-NCC for interactive pixel depth calculation** [11373-72]

11373 24 **Text field extraction from camera-captured express images** [11373-75]

11373 25 **Monocular camera relocalization in 3D point-cloud dense map** [11373-91]

SESSION 9 COMPUTER VISION AND VISUALIZATION

11373 26 **Normalized localization for 6-DOF camera pose regression** [11373-111]

11373 27 **A detection method for pavement roughness with binocular vision** [11373-131]

11373 28 **Real-time volume data 3D display based on view frustum shear transformation and ray casting integral** [11373-147]

11373 29 **Four-dimensional collision detection via five-dimensional homogeneous processing** [11373-149]

11373 2A **Space environment data field modeling and visualization** [11373-24]

11373 2B **A new Tikhonov-TV regularization for optical flow computation** [11373-27]

11373 2C **Using scale information to improve SIFT-based electron microscope image registration method** [11373-35]

11373 2D **Railway fastener defect detection based on deep convolutional networks** [11373-36]

11373 2E **Strip steel target detection algorithm based on single image rapid defog and morphological interframe difference** [11373-48]

11373 2F **deb2viz: Debiasing gender in word embedding data using subspace visualization** [11373-73]

11373 2G **SissiExpression: Towards intuitive visualization and interactive analysis of medical domain knowledge** [11373-82]

SESSION 10 3D RECONSTRUCTION AND IMAGING TECHNOLOGY

11373 2H **High dynamic range imaging for dynamic scenes via locality-constrained low-rank matrix completion** [11373-118]

11373 2I **Hair modeling and simulation based on a single-view picture** [11373-130]

11373 2J **3D object reconstruction from a single 2D image: performance of two novel frameworks based on lightweight CNN architectures and free-form deformation of meshes** [11373-135]

11373 2K **A method on realistic 3D roadway view model based on GIS** [11373-62]

11373 2L **Research on the influence of camera position on reconstruction accuracy in binocular vision** [11373-71]

11373 2M **High speed image acquisition system for 3D reconstruction** [11373-76]

11373 2N **Benchmarking large-scale multi-view 3D reconstruction using realistic synthetic images** [11373-81]

SESSION 11 SIGNAL ANALYSIS AND PROCESSING

11373 2O **Signal modulation identification in multipath channels** [11373-103]

11373 2P **Integer ambiguity search algorithm based on adaptive differential evolution algorithm** [11373-107]

11373 2Q **Modulation recognition method of time-frequency aliasing signals in single-channel** [11373-120]

11373 2R **Research on resource allocation algorithm of multi-beam satellite communication signal** [11373-132]

11373 2S **Speech enhancement based on spectrogram conditional generative adversarial networks** [11373-52]

11373 2T **No-contact heart rate monitoring based on channel attention convolution model** [11373-88]

11373 2U **A new communication jamming signal waveform generation model and its application research** [11373-99]

SESSION 12 COMPUTER AND COMMUNICATION ENGINEERING

11373 2V **Demystifying help-seeking students interacting multimodal learning environment under machine learning regime** [11373-1]

11373 2W **Subband frequency-domain filtering for filtered OFDM** [11373-100]

11373 2X **An improved normalized min-sum decoding algorithm for regular LDPC** [11373-105]

11373 2Y **Multi-user dynamic spectrum access based on reinforcement learning** [11373-106]

11373 2Z **Research on carrier tracking algorithm of low earth orbit satellite based on particle filter** [11373-108]

11373 30 **Parallel optimization of O (1) rectangular kernel max/min filters algorithm** [11373-114]

11373 31 **Analysis of BOC modulation performance with jamming** [11373-122]

11373 32 **A novel zero-IF binary FSK demodulation scheme** [11373-137]

11373 33 **A novel approach for blind recognition of shortened RS codes** [11373-138]

11373 34 **Learning local descriptors with latent hard sample mining** [11373-19]

11373 35 **Code-aided carrier phase synchronization algorithm for non-binary LDPC-CPM system** [11373-83]

11373 36 **A new adaptive weighted fusion algorithm for BDS and UWB positioning system** [11373-84]

11373 37 **Low complexity detection based on RTS method for large-scale MIMO systems** [11373-90]

11373 38 **Different methods to achieve VDE-SAT downlink PFD mask and cochannel interference estimation** [11373-94]

Authors

Numbers in the index correspond to the last two digits of the seven-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first five digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Abidi, Syed Muhammad Raza, 2V
An, Hui, 2G
An, Wei, 10
Atta, Rawheyaa E., 15
Attia, Mahmoud, 15
Bai, Jianan, 0R
Bai, Yan, 26
Bao, Jining, 1W
Bei, Yue, 1G
Belov, A. M., 0S
Cai, Chenguang, 0J
Cai, Yanxia, 2A
Cao, Lei, 0F
Cao, Mingyue, 2W
Cao, Yuanlong, 0A
Chang, Sheng, 1Y, 2C
Chen, Bohao, 2C
Chen, Houjin, 1Z
Chen, Hu, 0K, 2D
Chen, Jie, 0Q
Chen, Jingyao, 2W
Chen, Meiling, 2G
Chen, Qing, 0R
Chen, Quanyi, 30
Chen, Xi, 1Y, 2C
Chen, Zengmao, 32, 33
Cheng, Gong, 32
Cheng, Miao, 0R
Cheng, Rui, 03
Cheng, Tianyu, 1V
Cheng, Zhipeng, 1G
Chu, Hongyu, 0P
Chu, Miao, 1E
Deng, Zile, 0A
Denisova, A. Y., 0S
Diao, Changyu, 2N
Diao, Ming, 31
Ding, Chongyang, 1C
Ding, Dandan, 1G
Ding, Hu, 2V
Ding, Shumin, 1K
Ding, Yuxuan, 0Z
Dong, Haiming, 1L
Dong, Haoyu, 31
Dong, Jicheng, 2W
Dong, Xiaodong, 27
Dou, Yong, 04, 0H
Dou, Zheng, 2P, 2U, 2X, 2Y
Du, Xiao-ping, 0F
Duan, Meiyu, 1C
El Saddik, Abdulmotaleb, 1J
Espina, Marilou O., 17
Fajardo, Arnel C., 17
Fang, Fang, 1H
Faruq, MohiUddin, 2J
Feng, Changli, 09, 1X
Feng, Ming, 26
Gao, Hua-yu, 0V
Gao, Jingpeng, 35
Gao, Long, 1Q
Ge, Qi, 11
Ge, Sen, 2V
Gerardo, Bobby D., 17
Goel, Tripti, 08
Gong, Guanzhong, 1D
Gong, Yun, 16
Gou, Miao, 2F
Gu, Haiguo, 34
Guan, Yanxin, 28
Guo, Ruonan, 25
Guo, Yue, 0E
Han, Hua, 1Y, 2C
Han, Lei, 1P
Han, Ru, 2S
Han, Songshan, 25
Hao, Peifeng, 0N, 2E
Hashimoto, Shuji, 29
He, Juanjuan, 0G
He, Lin, 1R
He, Shuman, 0J
He, Zihang, 0O
Hou, Xianjun, 2K
Hu, Jiahao, 0O
Hu, Jiwei, 27
Hu, Mengyu, 25
Hu, Tao, 30
Hu, Wenting, 21
Hu, Yang, 1N
Hu, Yanlang, 14, 1U, 2M
Hu, Yulu, 13
Hua, Liang, 1V
Huang, Jipeng, 13
Huang, Mingqi, 0P
Huang, Weiquan, 26
Huang, Yajun, 0M
Hung, Mao-Hsiung, 12
Ido, Junya, 05
Jang, Hyangin, 23

Ji, Zexuan, 18, 1F
Jiang, Peng, 2X
Jiang, Yirui, 0A
Jiang, Zhuqing, 0B, 0C
Jiao, Shengli, 2L
Jomaa, Hadi, 2J
Ju, Guodong, 0B, 0C
Kalmoun, El Mostafa, 2B
Kasem, Hossam M., 15
Kim, Changmin, 23
Kong, Xiangdong, 1J
Kwon, Sanghoon, 23
Lee, Minhyung, 23
Lei, Jian, 1G
Li, Chunlei, 1K
Li, Dejian, 07
Li, Jinquan, 1L
Li, Jinyuan, 1N
Li, Luan, 2L
Li, Luyi, 0R
Li, Meng, 33
Li, Mingming, 38
Li, Pengbo, 2Q
Li, Ping, 0A
Li, Rongchun, 0H
Li, Shanglin, 1H
Li, Tong, 1N
Li, Wei, 38
Li, Weiqing, 1H
Li, Wenwen, 2O
Li, Xiaoqing, 0K, 2D
Li, Xin, 09, 1X
Li, Xinchun, 1Z
Li, Xiumei, 0D
Li, Xueen, 2T
Li, Yanfeng, 1Z
Li, Ying, 1U, 2M
Li, Yong, 0O
Li, Yonglun, 2R, 2Z
Li, Yuan, 1T
Li, Yuanhang, 28
Li, Yuting, 1R
Li, Zhigang, 2R, 2Z
Li, Zhiyao, 0Q
Liu, Dong, 1H
Liu, Hongli, 13
Liu, Hongling, 1P
Liu, Jian, 0T
Liu, Jianming, 2S
Liu, Juanni, 14, 1U, 2M
Liu, Kai, 1C, 1Q
Liu, Kai, 20
Liu, Lisha, 0Z
Liu, Qinghua, 0A
Liu, Tong, 37
Liu, Wan, 1M
Liu, Wei, 1O
Liu, Xiang, 0M
Liu, Xiaolin, 35
Liu, Xin, 03
Liu, Xing, 25
Liu, Yan, 22
Liu, Yaohui, 1H
Liu, Zhihua, 0J
Liu, Zhuohao, 2N
Long, Xin, 22
Lou, Ping, 27
Lu, Chao, 0V
Lu, Dongming, 2N
Lu, Jihua, 19
Lu, Kai, 20
Luan, Zhengguang, 1K
Luan, Zhengmin, 2Z
Luo, Jie, 1W
Luo, Ruiming, 07
Luo, Yanyang, 0P
Lv, Ning, 1J
Ma, Kun, 0N
Ma, Xinxin, 1C
Ma, Zhaogui, 09, 1X
Madhusudhanan, Kiran, 2J
Medina, Ruji P., 17
Men, Aidong, 0B, 0C
Meng, Fanru, 12
Ming, Yue, 02
Miwa, Takanobu, 29
Mo, Hong, 0Q
Munoz-Giraldo, Leandro, 2J
Nakai, Yuki, 29
Ni, Jianyue, 2V
Nie, Linzhen, 2K
Ning, Xiaoyan, 31, 32
Niu, Xin, 0H
Opanin Gyamfi, Enoch, 2F
Pan, Hengyue, 0H
Pan, Ji, 38
Pan, Xinghao, 1G
Pan, Zhigeng, 2G, 2I
Park, Junyoung, 23
Pei, Yang, 1W
Peng, Miao, 2E
Peng, Yahui, 1Z
Peng, Zijun, 2E
Pradhan, Saurabh, 2J
Qi, Guiling, 0Q
Qi, Lin, 2O, 2Q, 2U, 2Y
Qiao, Peng, 04
Qiao, Sai, 1X
Qin, Kaiming, 1I
Qin, Lihao, 1B
Qu, Hua, 2L
Qu, Huaijing, 0Y
R., Murugan, 08, 1A
Rao, Yunbo, 0P, 2F
Ren, Xianyi, 30
Ren, Xinyue, 31
Roy, Partha Pratim, 1A
Saitoh, Takeshi, 05
Sang, Xinzhu, 28
Sawada, Hideyuki, 29

Shao, Wenze, 11
Shao, Yanhua, 0P, 2F
Shen, Jun Ping, 0M
Shen, Siqi, 0H
Shi, Guangming, 1M
Shi, Huichao, 0J
Shi, Zhangsong, 0T
Shigemune, Hiroki, 29
Sun, Junmei, 0D
Sun, Rongchen, 32
Sun, Shouqian, 07
Sun, Tianhui, 1E
Sun, Wen, 2T
Sun, Yang, 10
Sun, Zhiguo, 32, 33
Sun, Zhongyun, 21
Tang, Qingfeng, 2G
Tang, Zhenyu, 1B
Tao, Liang, 03
Tao, Ye, 1O
Tian, Chunna, 0Z
Venneti, Kiran, 1A
Wang, Changwei, 30
Wang, Chengyi, 1I
Wang, Dahan, 24
Wang, Hai-bin, 0V
Wang, Hengbin, 0Y
Wang, Huabin, 03
Wang, Jiajun, 1D
Wang, Junliang, 2Q
Wang, Jun-xiang, 0V
Wang, Lianming, 13
Wang, Limin, 1G
Wang, Liqian, 11
Wang, Mingwen, 2S
Wang, Peng, 2A
Wang, Qi, 1G
Wang, Shengsheng, 1H
Wang, Tao, 1F
Wang, Wei, 1N
Wang, Weifeng, 0I
Wang, Xiangmeng, 2V
Wang, Xiaodong, 1O
Wang, Xiaoping, 20
Wang, Xin, 20
Wang, Xinhui, 1Z
Wang, Xinyu, 2U
Wang, Xuejiao, 0L
Wang, Yin, 26
Wang, Ying, 0J
Wang, Yixin, 26
Wang, Yongli, 06
Wang, Yuehuan, 34
Wang, Zhenpeng, 06
Wang, Zhile, 21
Wei, Haiyan, 09, 1X
Wei, Hao, 2T
Wei, Jiayuan, 1U, 2M
Wei, Miaomiao, 1K
Wei, Wenkang, 38
Wei, Zi-han, 0F
Wu, Bin, 0P
Wu, Dongmei, 0X
Wu, Jilong, 1O
Wu, Jing, 10
Wu, Wei, 0E
Wu, Yang, 1S
Wu, Yang, 2P
Wu, Yutang, 26
Wu, Zhonghong, 0T
Xia, Yu, 1F
Xiang, Guoqin, 1T
Xiang, Song, 0G
Xiang, Xuezhi, 1J
Xiao, Lu, 0V
Xie, Hao, 1T
Xie, Xuemei, 1M
Xing, Shujun, 28
Xing, Wei, 2N
Xu, Jinming, 2Y
Xu, Lihong, 1S
Xu, Luhang, 21
Xu, Xiaowei, 1O
Xu, Yingcheng, 37
Xu, Yue, 36
Xu, Zixuan, 2N
Xue, Rui, 36
Yan, Binbin, 28
Yan, Chen, 1Z
Yan, Junwei, 27
Yan, Lin, 1C
Yan, Wei, 1T
Yan, Xiang, 03
Yang, Bing, 18
Yang, Caihua, 0N, 2E
Yang, Changyoon, 23
Yang, Deyun, 09, 1X
Yang, Jianchao, 35, 36
Yang, Jungang, 10
Yang, Tianwei, 10
Yang, Xianwei, 0I
Yang, Yan, 1K
Yang, Yulong, 2R
Ye, Xiang, 0O
Yi, Yugen, 0A, 1W
Yin, Yalin, 24
Yu, Fei, 0D
Yu, Hong, 1T
Yu, Jiale, 0E
Yu, Mali, 2H
Yu, Xiaodan, 1V
Yu, Zeting, 1J
Zeng, Xiangrong, 22
Zeng, Zhengxin, 0B, 0C
Zhang, Bowen, 0U
Zhang, Chao, 19
Zhang, Churong, 02
Zhang, Feng-zhe, 0V
Zhang, Gaoxin, 0O
Zhang, Hai, 2H

Zhang, Hanxiu, 0N
Zhang, Hequn, 0R
Zhang, Jian, 0U
Zhang, Kaichao, 2O
Zhang, Linbo, 37
Zhang, Lizhe, 1Q
Zhang, Longzhi, 0X
Zhang, Maojun, 22
Zhang, Maozhu, 2L
Zhang, Mi, 25
Zhang, Mingmin, 2I
Zhang, Mingming, 14
Zhang, Peng, 0R
Zhang, Ruiguo, 0Z
Zhang, Shaojie, 0U, 1B
Zhang, Wei, 1P
Zhang, Wei, 2W
Zhang, Wu, 2V
Zhang, Xiangfu, 0T
Zhang, Xiaolin, 32
Zhang, Xunxun, 0W
Zhang, Yanjun, 19
Zhang, Yanning, 1U, 2M
Zhang, Yi, 1I
Zhang, Yi, 20
Zhang, Yufeng, 0Q
Zhao, Baoqi, 0D
Zhao, Haifeng, 0U, 1B
Zhao, Jiqing, 16
Zhao, Lei, 04
Zhao, Zhifu, 1M
Zheng, Jishi, 12
Zheng, Yao, 0D
Zhi, Min, 0L
Zhou, Binbin, 2I
Zhou, Fangxu, 1Y
Zhou, Mo, 2K
Zhou, Quan, 14, 1U, 2M
Zhou, Wei, 1W
Zhou, Xiangming, 0R
Zhou, Xu, 1D
Zhou, Ying, 0K, 2D
Zhu, Wenhao, 2V
Zhu, Xu, 0W
Zhu, Ziqi, 0G
Zhuang, Mengying, 1E
Zou, Huimin, 0G

Conference Committees

Advisory Committee

Xuelong Li, Chinese Academy of Sciences (China)
Ruigang Yang, Robotics and Auto-driving Laboratory, Baidu Research (China)

General Chairs

Zhigeng Pan, Hangzhou Normal University (China)
Xun Wang, Zhejiang Gongshang University (China)

Local Organizing Chair

Bolin Yang, Zhejiang Gongshang University (China)

Steering Committee

David Zhang, Hong Kong Polytechnic University (Hong Kong, China)
Yifei Pu, Sichuan University (China)
Junyu Dong, Ocean University of China (China)
Hui Yu, University of Portsmouth (United Kingdom)
Godfried T. Toussaint, New York University, Abu Dhabi (United Arab Emirates)

Program Chairs

Zhihai Wang, Zhejiang Gongshang University (China)
Yifei Pu, Sichuan University (China)
Hui Yu, University of Portsmouth (United Kingdom)
Tuan D. Pham, Linköping University (Sweden)
Hiroshi Fujita, Gifu University (Japan)
Vit Vozenilek, Palácky University (Czech Republic)
Guoqiang Zhong, Ocean University of China (China)

Publication Chair

Huijun Ren, Shandong University (China)

Publicity Chairs

Muwei Jian, Shandong University of Finance and Economics (China)
Kanghyun Jo, University of Ulsan (Korea, Republic of)
Shengke Wang, Ocean University of China (China)
Weishan Zhang, University of Petroleum (China)

Lin Qi, Ocean University of China (China)
Yong Zhao, Ocean University of China (China)

Session Chairs

1 Feature Matching
Hui Yu, University of Portsmouth (United Kingdom)

2 Target Detection
Zhenguang Liu, Zhejiang Gongshang University (China)

3 Signal Recognition and Face Recognition
Ting-Chung Poon, Virginia Polytechnic Institute and State University (United States)

4 Image and Signal Analysis
Takeshi Saitoh, Kyushu Institute of Technology (Japan)

5 Image Segmentation
Mande Xie, Zhejiang Gongshang University (China)

6 Pattern Recognition
Wenwu Yang, Zhejiang Gongshang University (China)

7 Image and Digital Signal Processing
Mande Xie, Zhejiang Gongshang University (China)

8 Signal Detection and Image Processing
Wenwu Yang, Zhejiang Gongshang University (China)

9 Computer Photography and Imaging Technology
Alexander Belov, Samara National Research University (Russian Federation)

10 Computer Vision and Visualization
Zhile Wang, Naval Aeronautical University, Qingdao Branch (China)

11 Image Processing Technology and Application
Yanlang Hu, Key Laboratory of Science and Technology on Space Microwave, CAST Xi'an (China)

12 Computer and Communication Engineering
Xiaoyang Wang, Zhejiang Gongshang University (China)

Introduction

Dear Distinguished Delegates and Guests,

The 2019 Eleventh International Conference on Graphics and Image Processing (ICGIP 2019) is held in Hangzhou, China during 12–14 October 2019. It was the eleventh year of the ICGIP conference. ICGIP 2019 was hosted by Zhejiang Gongshang University, (China); organized by the School of Computer and Information Engineering (SCIE) of Zhejiang Gongshang University (China); and co-sponsored by the College of Computer Science from Sichuan University (China), Ocean University of China (China), and the University of Portsmouth (United Kingdom).

ICGIP was the main annual Graphics and Image Processing conference aimed at presenting current research. The idea of conference was for the scientists, scholars, engineers and students from universities and industries all around the world to present ongoing research activities, and hence to foster research relations between universities and industries.

We would like to thank the authors for the high quality of the submissions. We are grateful to the reviewers for being responsive and thorough in such a short time frame. The creation of such a broad and high-quality conference program would not have been possible without their involvement. This event could also not have been a reality without the support of many individuals, organizations, and universities. We are grateful to the members of the ICGIP 2019 organizing committee for their help in handling the logistics and for their work to make this professional conference a success.

Once again, on behalf of the conference committee, we welcome you all to Hangzhou! We wish you a very pleasant stay in this beautiful city. And hope you will find the ICGIP 2019 experience a memorable one.

Zhigeng Pan
Xun Wang