

2018 IEEE 18th International Conference on Bioinformatics and Bioengineering (BIBE 2018)

**Taichung, Taiwan
29-31 October 2018**



**IEEE Catalog Number: CFP18266-POD
ISBN: 978-1-5386-5043-1**

**Copyright © 2018 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP18266-POD
ISBN (Print-On-Demand):	978-1-5386-5043-1
ISBN (Online):	978-1-5386-6217-5
ISSN:	2159-5410

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

2018 IEEE 18th International Conference on Bioinformatics and Bioengineering **BIBE 2018**

Table of Contents

Message from the General Co-Chairs	xiv
Message from the Program Chairs	xvi
Organizing Committee	xviii
Technical Program Committee	xix

Session 1.1: Biological Sequence Analysis

[Regular Paper] DegSampler: Collapsed Gibbs Sampler for Detecting E3 Binding Sites	1
<i>Osamu Maruyama (Kyushu University) and Fumiko Matsuzaki (Kyushu University)</i>	
Constructing the Relationship Tree of All Viruses via Whole Genomic Sequences	10
<i>Jing-Doo Wang (Asia University) and Yi-Chun Wang (Hung Shan Medical University, Taiwan)</i>	
Stratification of Human Gut Microiome and Building a SVM-Based Classifier	14
<i>His-Chung Kung (National YangMing University, Taipei), Rong-Ming Chen (National University of Tainan), Jeffrey J. P. Tsai (Asia University), and Rouh-Mei Hu (Asia University)</i>	
Protein Secondary Structural Class Prediction Using Effective Feature Modeling and Machine Learning Techniques	18
<i>Sanjay Bankapur (National Institute of Technology Karnataka, Surathkal) and Nagamma Patil (National Institute of Technology Karnataka, Surathkal)</i>	

Session 1.2: Biomedical Concepts and Measurements

[Regular Paper] Model Predictive and Proportional Integral Control of Blood Clotting Speed Using Warfarin when Data are Missing	22
<i>Emma D. Wilson (Lancaster University), Quentin Clairon (Newcastle University), Robin Henderson (Newcastle University), and C. James Taylor (Lancaster University)</i>	
[Regular Paper] Stochastic Non-minimal State Space Control with Application to Automated Drug Delivery	28
<i>Emma D. Wilson (Lancaster University), Quentin Clairon (Newcastle University), and C. James Taylor (Lancaster University)</i>	
[Regular Paper] Adjacent Network for Semantic Segmentation of Liver CT Scans	35
<i>Indriani Puspitasari Astono (The University of Newcastle), James S. Welsh (The University of Newcastle), and Stephan Chalup (The University of Newcastle)</i>	

[Regular Paper] Texture Biomarkers of Alzheimer's Disease and Disease Progression in the Mouse Retina	41
<i>Ana Nunes (University of Coimbra), Antonio F. Ambrosio (University of Coimbra), Miguel Castelo-Branco (University of Coimbra), and Rui Bernardes (University of Coimbra)</i>	

Session 1.3: Sequence Alignment and High-Performance Sequence Analysis

[Regular Paper] Detection of Errors in Multi-genome Alignments Using Machine Learning Approaches	47
<i>Jaspal Singh (McGill University), Ramchalam Kinattinkara Ramakrishnan (McGill University), and Mathieu Blanchette (McGill University)</i>	
[Regular Paper] A High-Performance Sequence Analysis Engine for Shotgun Metagenomics through GPU Acceleration	
<i>Ying-Feng Hsu (Osaka University), Morito Matsuoka (Osaka University), Nicolas Jung (Osaka University), Yuki Matsumoto (Osaka University), Daisuke Motooka (Osaka University), and Shota Nakamura (Osaka University)</i>	
RLALIGN: A Reinforcement Learning Approach for Multiple Sequence Alignment	
<i>Ramchalam Kinattinkara Ramakrishnan (McGill University), Jaspal Singh (McGill University), and Mathieu Blanchette (McGill University)</i>	
An Efficient GPU-Based de Bruijn Graph Construction Algorithm for Micro-Assembly	
<i>Shanshan Ren (Delft University of Technology), Nauman Ahmed (Delft University of Technology), Koen Bertels (Delft University of Technology), and Zaid Al-Ars (Delft University of Technology)</i>	

Session 1.4: Recent Advancement in Medical Engineering

[Regular Paper] Low Cost Micro-Droplet Formation Chip with a Hand-Operated Suction Syringe	
<i>Gamal Abdel Nasser (E-JUST, Alexandria), Ahmed M.R. Fath El-Bab (E-JUST, Alexandria; Assiut University), Hisham Mohamed (Rensselaer Polytechnic Institute), and Ahmed Abouelsoud (E-JUST, Alexandria; Cairo University)</i>	
[Regular Paper] A Parametric 3D-Printed Body-Powered Hand Prosthesis Based on the Four-Bar Linkage Mechanism	
<i>Marlene Bustamante (Pontifical Catholic University of Peru), Rodrigo Vega-Centeno (Pontifical Catholic University of Peru), Midori Sánchez (Pontifical Catholic University of Peru), and Renato Mio (Pontifical Catholic University of Peru)</i>	
Design of a Portable Radial Piston Pneumatic Compressor for Wearable Robot System	
<i>Ryeonho Kang (Yonsei University), Ho Seon Choi (Yonsei University), and Yoon Su Baek (Yonsei University)</i>	
SAR ADC with DAC and SC Low-Pass Filter for Positron Emission Tomography Application	
<i>Wen-Cheng Lai (National Penghu University of Science and Technology)</i>	
Study on the Channel Characteristics of Auxiliary Medical Devices Based on MDAPSK Technology	
<i>Xueping LI (Xi'an University of Technology), Yuan Yu (Xi'an University of Technology), and Ningmei Yu (Xi'an University of Technology)</i>	

Session 1.5: Biological Network Inference and Analysis I

- [Regular Paper] Inference of Genetic Networks Using Random Forests: Use of Different Weights for Time-Series and Static Gene Expression Data
Shuhei Kimura (Tottori University), Masato Tokuhisa (Tottori University), and Mariko Okada-Hatakeyama (Osaka University)
- [Regular Paper] An Intensive Search for Higher-Order Gene-Gene Interactions by Improving Deep Learning Model
Suneetha Uppu (Curtin University) and Aneesh Krishna (Curtin University)
- [Regular Paper] Interpretable Prediction of Vascular Diseases from Electronic Health Records via Deep Attention Networks
Seunghyun Park (Naver Corp.), You Jin Kim (Naver Corp.), Jeong Whun Kim (Seoul National University Bundang Hospital), Jin Joo Park (Seoul National University Bundang Hospital), Borim Ryu (Seoul National University Bundang Hospital), and Jung-Woo Ha (Naver Corp.)
- Pathway Analysis of Marker Genes for Leukemia Cancer using Enhanced Genetic Algorithm-Neural Network (enGANN)
Hau Cherng Wong (First City University College), Christine Siew Ken Lee (First City University College), and Dong Ling Tong (First City University College)
- SIPMA: A Systematic Identification of Protein-Protein Interactions in Zea mays Using Autocorrelation Features in a Machine-Learning Framework
Mst. Shamima Khatun (Kyushu Institute of Technology), Md. Mehedi Hasan (Kyushu Institute of Technology), Md. Nurul Haque Mollah (University of Rajshahi), and Hiroyuki Kurata (Kyushu Institute of Technology)

Session 1.6: Medical and Physiological Signal Analysis I

- [Regular Paper] Biomedical Data Acquisition and Processing to Recognize Emotions for Affective Learning
Armin Gruenewald (University of Siegen, Germany), David Kroenert (University of Siegen, Germany), Jonas Poehler (University of Siegen, Germany), Rainer Brueck (University of Siegen, Germany), Frédéric Li (University of Siegen, Germany), Julian Littau (University of Siegen, Germany), Katrin Schnieber (University of Siegen, Germany), Artur Piet (University of Siegen, Germany), Marcin Grzegorzec (University of Siegen, Germany), Henrik Kampling (University of Siegen, Germany), and Bjoern Niehaves (University of Siegen, Germany)
- [Regular Paper] KnowPain: Automated System for Detecting Pain in Neonates from Videos
Rajkumar Theagarajan (University of California, Riverside), Bhanu Bir (University of California, Riverside), Danilyn Angeles (Loma Linda University), and Federico Pala (University of California, Riverside)
- Brain Structural and Functional Representation Based on the Local Global Graph Methodology
Spyridon Manganas (Wright State University), Nikolaos Bourbakis (Wright State University), and Konstantinos Michalopoulos (Wright State University)
- Comparison of Region of Interest Segmentation Methods for Video-Based Heart Rate Measurements
Peixi Li (Univ. Bourgogne Franche-Comté), Yannick Benezeth (Univ. Bourgogne Franche-Comté), Keisuke Nakamura (Honda Research Institute Japan Co., Ltd.), Randy Gomez (Honda Research Institute Japan Co., Ltd.), Chao Li (Chinese Academy of Sciences), and Fan Yang (Univ. Bourgogne Franche-Comté)

Session 1.7: Workshop: Cancer Bioinformatics and Intelligent Medicine

- Deep Learning with Evolutionary and Genomic Profiles for Identifying Cancer Subtypes
Chun-Yu Lin (Kyoto University), Peiying Ruan (NVIDIA Corporation), Ruiming Li (Kyoto University), Jinn-Moon Yang (National Chiao Tung University), Simon See (NVIDIA Corporation), and Tatsuya Akutsu (Kyoto University)
- Convolutional Neural Network Approach to Lung Cancer Classification Integrating Protein Interaction Network and Gene Expression Profiles
Teppei Matsubara (Toho University Funabashi), Tomoshiro Ochiai (Otsu Women's University Tokyo), Morihiro Hayashida (Matsue College Shimane), Tatsuya Akutsu (Institute of Chemical Research Kyoto), and Jose Nacher (Toho University Funabashi)
- Identification of the PCa28 Gene Signature as a Predictor in Prostate Cancer
Jung-Yu Lee (National Chiao Tung University Hsinchu), Si-Yu Lin (National Chiao Tung University Hsinchu), Yi-Hsuan Chuang (National Chiao Tung University Hsinchu), Sing-Han Huang (National Chiao Tung University Hsinchu), Yu-Yao Tseng (National Chiao Tung University Hsinchu), Chun-Yu Lin (Kyoto University), Hung-Jung Wang (National Health Research Institutes Miaoli, Taiwan), and Jinn-Moon Yang (National Chiao Tung University Hsinchu)
- Detection of Fusion Genes from Human Breast Cancer Cell-Line RNA-Seq Data Using Shifted Short Read Clustering
Yoshiaki Sota (Osaka University), Shigeto Seno (Osaka University), Hironori Shigeta (Osaka University), Naoki Osato (Osaka University), Masafumi Shimoda (Osaka University), Shinzaburo Noguchi (Osaka University), and Hideo Matsuda (Osaka University)

Session 1.8: Biological Sensor and Data Analysis

- [Regular Paper] Recovering a Chemotopic Feature Space from a Group of Fruit Fly Antenna Chemosensors....
Martin Strauch (RWTH Aachen University), Latha Mukunda (University of Konstanz), Alja Lüdke (University of Konstanz), C. Giovanni Galizia (University of Konstanz), and Dorit Merhof (RWTH Aachen University)
- [Regular Paper] Mechanical Testing Methods for Body-Powered Upper-Limb Prostheses: A Review
Renato Mio (Pontifical Catholic University of Peru), Midori Sánchez (Pontifical Catholic University of Peru), and Quino Valverde (Pontifical Catholic University of Peru)
- Investigating Electrode Sites for Intention Detection During Robot Based Hand Movement Using EEG-BCI System
Maryam Butt (University of Wollongong), Golshah Naghdy (University of Wollongong), Fazel Naghdy (University of Wollongong), Geoffrey Murray (University of Wollongong), and Haiping Du (University of Wollongong)
- Remote Assessment of Gait Deterioration Due to Memory Impairment in Elderly Adults Using Micro-Doppler Radar
Kenshi Saho (Toyama Prefectural University), Kazuki Uemura (Toyama Prefectural University), and Michito Matsumoto (Toyama College of Welfare Science)

Estimating GRF(Ground Reaction Force) and Calibrating CoP(Center of Pressure) of an Insole Measured
by an Low-Cost Sensor with Neural Network
*Ho Seon Choi (Yonsei University), Myounghoon Shim (Yonsei University),
Chang Hee Lee (Yonsei University), and Yoon Su Baek (Yonsei
University)*

Session 2.1: Cancer Bioinformatics

[Regular Paper] MVPNets: Multi-viewing Path Deep Learning Neural Networks for Magnification
Invariant Diagnosis in Breast Cancer
*Padmaja Jonnalagedda (University of California Riverside), Daniel
Schmolze (City of Hope CA), and Bir Bhanu (University of California
Riverside)*

[Regular Paper] Tensor Decomposition–Based Unsupervised Feature Extraction for Integrated Analysis
of TCGA Data on MicroRNA Expression and Promoter Methylation of Genes in Ovarian Cancer
Y-h. Taguchi (Chuo University) and Ka-Lok Ng (Asia University)

Cancer Screening Using Biomimetic Pattern Recognition with Hyper-Dimensional Structures
*Leonila Lagunes (University of California, Irvine) and Charles H. Lee
(California State University Fullerton)*

Session 2.2: Medical Image and Signal Analysis I

[Regular Paper] Automated Evaluation of Hand Motor Function Recovery by Using Finger Pressure
Sensing Device for Home Rehabilitation
*Yuta Furudate (Future University Hakodate), Nanami Onuki (Future
University Hakodate), Kaori Chiba (Hakodate Medical Association
Hospital), Yuji Ishida (Hokkaido Bunkyo University), and Sadayoshi
Mikami (Future University Hakodate)*

[Regular Paper] The Delta Generalized Labeled Multi-Bernoulli Filter for Cell Tracking
*Chunmei Shi (Northeast Forestry University, Harbin), Junjie Wang
(Harbin Institute of Technology), Lingling Zhao (Harbin Institute of
Technology), Xiaohong Su (Harbin Institute of Technology), and
Guangshun Jiang (Northeast Forestry University, Harbin)*

Software Defined Radio-Based Testbed for Wireless Body Area Network
*Zhiyu Chen (McGill University), Junchao Wang (McGill University),
Kaining Han (McGill University), and Zeljko Zilic (McGill University)*

Nonlinear CMOS Image Sensor with SOC Integrated Local Contrast Stretch for Bio-Microfluidic Imaging

*Nan Lyu (Xi'an University of Technology), LiKang Xu (Xi'an University
of Technology), Ningmei Yu (Xi'an University of Technology), and Hejiu
Zhang (Xi'an University of Technology)*

Session 2.3 Tutorial: Assistive Research Biotechnologies for People in Need

Session 2.4: Medical Signal, Sequence Detection, DNA Barcode

- [Regular Paper] Decision Theory-Based DNA Barcoding Through Quick Response Code Representation ..
Cheng-Hong Yang (National Kaohsiung University of Science and Technology), Kuo-Chuan Wu (National Kaohsiung University of Science and Technology), Hsueh-Wei Chang (Kaohsiung Medical University Kaohsiung), and Li-Yeh Chuang (I-Shou University Kaohsiung)
- Species Identification Using Partial DNA Sequence: A Machine Learning Approach
Tasnim Kabir (Bangladesh University of Engineering and Technology), Abida Sanjana Shemonti (Bangladesh University of Engineering and Technology), and Atif Hasan Rahman (Bangladesh University of Engineering and Technology)
- Comparative Analysis of System-Level Acceleration Techniques in Bioinformatics: A Case Study of Accelerating the Smith-Waterman Algorithm for BWA-MEM
Ernst Joachim Houtgast (Delft University of Technology), Vlad-Mihai Sima (Bluebee Research&Development), Koen Bertels (Delft University of Technology), and Zaid Al-Ars (Delft University of Technology)
- Psycho-Physiological Changes Depend on Differences in the Presentation Ratio of Non-target Stimuli
Hiroaki Yoshikawa (Ritsumeikan University) and Hiroshi Hagiwara (Ritsumeikan University)
- Quantitative Analysis of ECI2 Expression from RNA-Seq for Breast Cancer Gene Signatures
Ming-Yi Yen (Asia University), Hsueh-Ting Chu (Asia University), Yu-Ching Chen (Asia University), and Jeffrey J. P. Tsai (Asia University)
- Novel Parameters for ECG Signal Analysis Irrespective of Patient's Age, Sex and Heart Rate
Salah Hamdi (University of Monastir, Tunisia), Asma Ben Abdallah (University of Monastir, Tunisia), and Mohamed Hedi Bedoui (University of Monastir, Tunisia)
- Improved Multifactor Dimensionality Reduction for Epistasis Detection
Li-Yeh Chuang (I-Shou University Kaohsiung), Cheng-Hong Yang (National Kaohsiung University of Science and Technology), and Yu-Da Lin (National Kaohsiung University of Science and Technology)

Session 2.5: Cancer and Medical Bioinformatics

- [Regular Paper] Identification of Several Core Overexpressed MicroRNAs that Could Predict Survival in Patients with Ovarian Cancer
Eskezeia Y. Dessie (Asia University), Ezra B. Wijaya (Asia University), Chien-Hung Huang (National Formosa University), David Agustriawan (Indonesian International Institute for Life Science), Jeffrey J. P. Tsai (Asia University), and Ka-Lok Ng (Asia University)
- Quantitative Frailty Assessment Using Activity of Daily Living (ADL)
Yasmeen Naz Panhwar (University of Wollongong), Fazel Naghdy (University of Wollongong), David Stirling (University of Wollongong), Golshah Naghdy (University of Wollongong), and Janette Potter (University of Wollongong)

Identification of Potential Long Non-coding RNA Biomarkers for Breast Cancer Patients with Somatic BRCA1 Mutations from RNA-Seq Datasets	
<i>Jia-Hua Cai (Asia University), Yu-Ching Chen (Asia University), Hsueh-Ting Chu (Asia University), and Jeffrey J. P. Tsai (Asia University)</i>	
The Potential Dual-Target Inhibitors for HER2/HSP90 Proteins from Traditional Chinese Medicine	
<i>Jhih-Ying Chen (Asia University), Chia-Min Chen (Asia University), Pei-Chun Chang (Asia University), and Jeffrey J. P. Tsai (Asia University)</i>	
Regression-Based Documents Reranking for Precision Medicine	
<i>Juncheng Ding (University of North Texas), Wei Jin (University of North Texas), and Haihua Chen (University of North Texas)</i>	

Session 2.6: Medical Image and Signal Analysis II

[Regular Paper] Detection of H. pylori Induced Gastric Inflammation by Diffuse Reflectance Analysis	
<i>Alexandre Krebs (Univ. de Bourgogne Franche-Comté), Vania Camilo (Institut Pasteur), Eliette Touati (Institut Pasteur), Yannick Benezeth (Univ. de Bourgogne Franche-Comté), Valérie Michel (Institut Pasteur), Grégory Jouvion (Institut Pasteur), Fan Yang (Univ. de Bourgogne Franche-Comté), Dominique Lamarque (Hôpital Ambroise Paré), and Franck Marzani (Univ. de Bourgogne Franche-Comté)</i>	
[Regular Paper] Implementation of an Ultrasound Platform for Proposed Photoacoustic Image Reconstruction Algorithm	
<i>Enkhbat Batbayar (Chonbuk National University), Enkhbaatar Tumenjargal (Chonbuk National University), Chulgyu Song (Chonbuk National University), and Woonchul Ham (Chonbuk National University)</i>	
[Regular Paper] Three-Dimensional Segmentation of Mouse Embryonic Stem Cell Nuclei for Quantitative Analysis of Differentiation Activity Using Time-Lapse Fluorescence Microscopy Images	
<i>Yuan-Hsiang Chang (Chung-Yuan Christian University), Hideo Yokota (RIKEN), Kuniya Abe (RIKEN), and Ming-Dar Tsai (Chung-Yuan Christian University)</i>	
[Regular Paper] Corticospinal Tract (CST) Reconstruction Based on Fiber Orientation Distributions (FODs) Tractography	
<i>Youshan Zhang (Lehigh University)</i>	
Using NIRS to Detect Brain oxyHb Changes During Short-Term Memory Tasks	
<i>Takuya Sasabe (Ritsumeikan University) and Hiroshi Hagiwara (Ritsumeikan University)</i>	

Session 3.1: Special Paper Session - Biomedical Big Data

Mutation Analysis of Second Primary Tumors in the Head and Neck Cancer by Next Generation Sequencing...	
<i>Ting-Yuan Liu (China Medical University Hospital), Chien-Chin Lee (China Medical University Hospital), Hsi-Yuan Huang (China Medical University Hospital), and Jan-Gowth Chang (China Medical University Hospital)</i>	

The Amiloride Derivatives Regulate the Alternative Splicing of Apoptotic Gene Transcripts	<i>Chien-Chih Lee (China Medical University Hospital), Wen-Hsin Chang (Taipei Medical University Hospital), Ting-Yuan Liu (China Medical University Hospital), Yu-Chia Chen (China Medical University Hospital), Guan-Yu Chen (China Medical University Hospital), Yang-Chang Wu (Kaohsiung Medical University), and Jan-Gowth Chang (China Medical University Hospital)</i>
The Role of mRNA Transporter in Human Cancer	<i>Yu-Chia Chen (China Medical University Hospital), Chien-Chih Chiu (Kaohsiung Medical University), Han-Lin Chou (Kaohsiung Medical University), and Jan-Gowth Chang (China Medical University Hospital)</i>

Session 3.2: Biological Text Mining and Biomedical Informatics

[Regular Paper] EP-CapsNet: Extending Capsule Network with Inception Module for Electrophoresis Binary Classification	<i>Elizabeth Tobing (Korea Advanced Institute of Science and Technology (KAIST)), Ashraf Murtaza (Korea Advanced Institute of Science and Technology (KAIST)), Keejun Han (Korea Advanced Institute of Science and Technology (KAIST)), and Mun Y. Yi (Korea Advanced Institute of Science and Technology (KAIST))</i>
Semantic Relation Extraction for Herb-Drug Interactions from the Biomedical Literature Using an Unsupervised Learning Approach	<i>Khang Trinh (Vietnam National University), Duy Pham (Information System Center FPT Telecom), and Ly Le (Vietnam National University)</i>
Learning Effective Distributed Representation of Complex Biomedical Concepts	<i>Khai Nguyen (National Institute of Informatics) and Ryutaro Ichise (National Institute of Informatics)</i>

Session 3.3: Biological Network Inference and Analysis II

A Systems Biology Approach to Model Gene-Gene Interaction for Childhood Sarcomas	<i>Dong Ling Tong (First City University College, Malaysia) and Christine Siew Ken Lee (First City University College, Malaysia)</i>
Prediction of Plant-Disease Relations Based on Unani Formulas by Network Analysis	<i>Shaikh Farhad Hossain (Nara Institute of Science and Technology), Sony Hartono Wijaya (Bogor Agricultural University), Ming Huang (Nara Institute of Science and Technology), Irmanida Batubara (Bogor Agricultural University), Shigehiko Kanaya (Nara Institute of Science and Technology), and Md. Altaf-Ul-Amin Farhad (Nara Institute of Science and Technology)</i>
Computational Modeling of the Early Development of Embryonic Leaves in Maize	<i>Charles C.N. Wang (Asia University), Pei Chun Chang (Asia University), Phillip C.Y. Sheu (University of California, Irvine), and Jeffrey J. P. Tsai (Asia University)</i>
iLMS, Computational Identification of Lysine-Malonylation Sites by Combining Multiple Sequence Features	<i>Md. Mehedi Hasan (Kyushu Institute of Technology) and Hiroyuki Kurata (Kyushu Institute of Technology)</i>

Session 3.4 Computational Modeling and Sensor in Biomedical Engineering

Finite Element Modelling for the Detection of Breast Tumor	
<i>Olzhas Mukhmetov (Nazarbayev University), Dastan Igali (Nazarbayev University), Yong Zhao (Nazarbayev University), Sai Cheong Fok (Nazarbayev University), Soo Lee Teh (Nazarbayev University), Aigerim Mashekova (Nazarbayev University), and Ng Yin Kwee (Nanyang Technological University)</i>	
[Regular Paper] Computational Modeling of Traumatic Brain Injury Due to Impact on Different Sides of Human Head	
<i>Tanu Khanuja (Indian Institute of Technology Hyderabad) and Harikrishnan N. Unni (Indian Institute of Technology Hyderabad)</i>	
Sigma-Delta ADC for Image Sensor in Virtual and Augmented Reality Camera to Medical Training	
<i>Wen-Cheng Lai (National Penghu Univ. of Science and Technology)</i>	
Author Index	