

DAY	TIME	Grand Ballroom 2 (13F)	Rose Room 1 (13F)
Oct. 29 Monday	8:00 – 9:30	Registration	
	8:50 – 9:00	Welcome from Conference Chair Chair: Professor Jeffrey J. P. Tsai President, Asia University Grand Ballroom 2	
	9:00 – 9:50	Keynote (1) Professor Scott L. Delp Stanford University, USA Chair: Professor Jean-Claude Latombe Stanford University, USA Grand Ballroom 2	
	9:50-10:40	Keynote (2) Professor Yusuke Nakamura University of Chicago, USA Chair: Professor Hideo Matsuda (Osaka University, Japan) Grand Ballroom 2	
	10:40-10:55	Coffee Break	
	10:55-12:15	S1.1 Biological sequence analysis Chair: Professor Tatsuya Akutsu Kyoto University, Japan Grand Ballroom 2	S1.2 Biomedical concepts and measurements Chair: Dr. Emma D. Wilson Lancaster University, UK Rose Room 1
	12:15-13:15	Lunch [Grand Ballroom 2 (13F)] AI revolutionized Healthcare, Speaker: Dr. Andrew Liu NVIDIA, Taiwan	
	13:15-14:35	S1.3 Sequence alignment and high-performance sequence analysis Chair: Professor Osamu Maruyama Kyushu University, Japan Grand Ballroom 2	S1.4 Recent advancements in medical engineering Chair: Professor Wen-Cheng Lai National Penghu University of Science and Technology, Taiwan Rose Room 1
	14:35-15:55	S1.5 Biological network inference and analysis I Chair: Professor Jose Nacher Toho University, Japan Grand Ballroom 2	S1.6 Medical and physiological signal analysis I Chair: Dr. Emma D. Wilson Lancaster University, UK Rose Room 1
	15:55-16:10	Coffee Break	
	16:10-17:30	S1.7 Workshop: Cancer bioinformatics and intelligent medicine Chair: Professor Tatsuya Akutsu Kyoto University, Japan Grand Ballroom 2	S1.8 Biological sensor and data analysis Chair: Professor Golshah Naghdy University of Wollongong, Australia Rose Room 1
	17:30-18:30	Break	
	18:30 – 21:00	Reception Chair: Professor Jeffrey J. P. Tsai President, Asia University Grand Ballroom 1	

Oct. 30 Tuesday	8:00 – 9:30	Registration	
	9:00 – 9:50	Keynote (3) Professor Pui-Yan Kwok Academia Sinica, Taiwan Chair: Professor Ka-Lok Ng Asia University, Taiwan Grand Ballroom 2	
	9:50-10:40	Keynote (4) Professor Lydia E. Kavraki Rice University, USA Chair: Professor Tatsuya Akutsu Kyoto University, Japan Grand Ballroom 2	
	10:40-10:55	Coffee Break	
	10:55-11:55	S2.1 Cancer bioinformatics Chair: Professor Y-h Taguchi Chou University, Japan Grand Ballroom 2	S2.2 Medical image and signal analysis I Chair: Professor Kenshi Saho Toyama Prefectural University, Japan Rose Room 1
	11:55-13:00	Lunch [The Plum Blossom Room1 (13F)]	
	13:00-13:50	Keynote (5) Professor Antonios G. Mikos Rice University, USA Chair: Professor Ka-Lok Ng Asia University, Taiwan Grand Ballroom 2	
	13:50-15:50	S2.3 Tutorial: Professor Nikolaos G Bourbakis Wright State University, USA Grand Ballroom 2	S2.4 Medical signal, sequence detection, DNA barcode Chair: Professor Hiroshi Hagiwara Ritsumeikan University, Japan Rose Room 1
	15:50-16:05	Coffee Break	
	16:05-17:25	S2.5 Cancer and medical bioinformatics Chair: Professor Hsueh-Ting Chu Asia University, Taiwan Grand Ballroom 2	S2.6 Medical image and signal analysis II Chair: Professor Nikolaos G Bourbakis Wright State University, USA Rose Room 1
	17:25 – 18:30	Break	
	18:30 – 21:00	Banquet Keynote (6) Professor Jan-Gowth Chang China Medical University, Taiwan Chair: Professor Jeffrey J. P. Tsai President, Asia University, Taiwan Grand Ballroom 1	

Oct. 31 Wednesday	8:00 – 9:00	Registration	
	9:00 – 9:50	Keynote (7) Professor Wen-Hsiung Li Academia Sinica, Taiwan Chair: Professor Chi-Ren Shyu University of Missouri, USA Grand Ballroom 2	
	9:50-10:50	S3.1 Special paper session - Biomedical Big Data Chair: Professor Jan-Gowth Chang China Medical University, Taiwan Grand Ballroom 2	S3.2 Biological text mining and biomedical informatics Chair: Dr. Khai Nguyen National Institute of Informatics, Japan Rose Room 1
	10:50-11:05	Coffee Break	
	11:05-12:05	S3.3: Biological network inference and analysis II Chair: Professor Wen-Ling Chan Asia University, Taiwan Grand Ballroom 2	S3.4 Computational Modeling and sensor in biomedical engineering Chair: Professor Michael Yong Zhao Nazarbayev University, Kazakhstan Rose Room 1
	12:05 – 13:00	Lunch [The Plum Blossom Room 1 (13F)] (Close)	

S1.1: Biological sequence analysis

DegSampler: Collapsed Gibbs sampler for detecting E3 binding sites*

Osamu Maruyama and Fumiko Matsuzaki

Constructing the Relationship Tree of All Viruses via Whole Genomic Sequences

Jing-Doo Wang and Yi-Chun Wang

Stratification of Human Gut Microbiome and Building a SVM-Based Classifier

His-Chung Kung, Jeffrey J. P. Tsai, Rong-Ming Chen and Rouh-Mei Hu

Protein Secondary Structural Class Prediction Using Effective Feature Modeling and Machine Learning Techniques

Sanjay Bankapur and Nagamma Patil

S1.2: Biomedical concepts, measurements and image analysis

Model Predictive and Proportional Integral Control of Blood Clotting Speed Using Warfarin When Data Are Missing*

Emma D. Wilson, Quentin Clairon, Robin Henderson and C. James Taylor

Stochastic Non-minimal State Space Control with Application to Automated Drug Delivery*

Emma D. Wilson, Quentin Clairon and C. James Taylor

Adjacent Network for Semantic Segmentation of Liver CT Scans*

Indriani Puspitasari Astono, James S. Welsh and Stephan Chalup

Texture biomarkers of Alzheimer's disease and disease progression in the mouse retina*

Ana Nunes, António Ambrósio, Miguel Castelo-Branco and Rui Bernardes

S1.3: Sequence alignment and high-performance sequence analysis

Detection of Errors in Multi-Genome Alignments Using Machine Learning Approaches*

Jaspal Singh, Ramchalam Kinattinkara Ramakrishnan and Mathieu Blanchette

A High-Performance Sequence Analysis Engine for Shotgun Metagenomics through GPU

Acceleration*

Ying-Feng Hsu, Morito Matsuoka, Nicolas Jung, Yuki Matsumoto, Daisuke Motooka and Shota Nakamura

RLALIGN: A Reinforcement Learning Approach for Multiple Sequence Alignment

Ramchalam Kinattinkara Ramakrishnan, Jaspal Singh and Mathieu Blanchette

An Efficient GPU-based de Bruijn Graph Construction Algorithm for Micro-Assembly

Shanshan Ren, Nauman Ahmed, Koen Bertels and Zaid Al-Ars

S1.4: Recent advancement in medical engineering

Low Cost Micro-Droplet Formation Chip with a Hand-Operated Suction Syringe*

Gamal Abdel Nasser, Ahmed M.R. Fath El-Bab, Hisham Mohamed and Ahmed Abouelsoud

A parametric 3D-printed body-powered hand prosthesis based on the four-bar linkage mechanism*

Marlene Bustamante, Rodrigo Vega-Centeno, Midori Sánchez and Renato Mio

Design of a Portable Radial Piston Pneumatic Compressor for Wearable Robot System

Ryeonho Kang, Ho Seon Choi and Yoon Su Baek

SAR ADC with DAC and SC Low-Pass Filter for Positron Emission Tomography Application

Wen Cheng Lai

Study on the Channel Characteristics of Auxiliary Medical Devices Based on MDAPSK Technology

Xueping Li, Yuan Yang and Ningmei Yu

S1.5: Biological network inference and analysis I

Inference of Genetic Networks Using Random Forests: Use of Different Weights for Time-series and Static Gene Expression Data*

Shuhei Kimura, Masato Tokuhisa and Mariko Okada-Hatakeyama

An Intensive Search for Higher-order Gene-gene Interactions by Improving Deep Learning Model*

Suneetha Uppu and Aneesh Krishna

Interpretable Prediction of Vascular Diseases from Electronic Health Records via Deep Attention Networks*

Seunghyun Park, You Jin Kim, Jeong Whun Kim, Jin Joo Park, Borim Ryu and Jung-Woo Ha

Pathway Analysis of Marker Genes for Leukemia Cancer Using Enhanced Genetic Algorithm-Neural Network (enGANN)

Hau Cherng Wong, Christine Siew Ken Lee and Dong Ling Tong

SIPMA: a systematic identification of protein–protein interactions in *Zea mays* using autocorrelation features in a machine-learning framework

Mst. Shamima Khatun, Md. Mehedi Hasan, Md. Nurul Haque Mollah and Hiroyuki Kurata

S1.6: Medical and physiological signal analysis I

Biomedical Data Acquisition and Processing to Recognize Emotions for Affective Learning*

Armin Gruenewald, David Kroenert, Jonas Poehler, Rainer Brueck, Frédéric Li, Kathrin Schnieber, Artur Piet, Julian Littau, Marcin Grzegorzec, Henrik Kampling and Bjoern Niehaves

KnowPain: Automated System for Detecting Pain in Neonates from Videos*

Rajkumar Theagarajan, Bhanu Bir, Danilyn Angeles and Federico Pala

Brain Structural and Functional Representation Based on the Local Global Graph Methodology

Spyridon Manganas, Nikolaos Bourbakis and Konstantinos Michalopoulos

Comparison of Region of Interest Segmentation Methods for Video-based Heart Rate Measurements

Peixi Li, Yannick Benezeth, Keisuke Nakamura, Randy Gomez, Chao Li and Fan Yang

S1.7: Workshop: Cancer bioinformatics and intelligent medicine

Deep Learning with Evolutionary and Genomic Profiles for Identifying Cancer Subtypes

Chun-Yu Lin, Peiyong Ruan, Ruiming Li, Jinn-Moon Yang, Simon See and Tatsuya Akutsu

Convolutional Neural Network Approach to Lung Cancer Classification Integrating Protein Interaction Network and Gene Expression Profiles

Tepei Matsubara, Tomoshiro Ochiai, Morihiro Hayashida, Tatsuya Akutsu and Jose Nacher

Identification of the PCa28 gene signature as a predictor in prostate cancer

Jung-Yu Lee, Si-Yu Lin, Yi-Hsuan Chuang, Sing-Han Huang, Yu-Yao Tseng, Chun-Yu Lin, Hung-Jung Wang and Jinn-Moon Yang

Detection of Fusion Genes from Human Breast Cancer Cell-line RNA-Seq Data Using Shifted Short Read Clustering

Yoshiaki Sota, Shigeto Seno, Hironori Shigeta, Naoki Osato, Masafumi Shimoda, Shinzaburo Noguchi and Hideo Matsuda

S1.8: Biological sensor, device and data analysis

Recovering a Chemotopic Feature Space from a Group of Fruit Fly Antenna Chemosensors*

Martin Strauch, Latha Mukunda, Alja Lüdke, C. Giovanni Galizia and Dorit Merhof

Mechanical Testing Methods for Body-Powered Upper-Limb Prostheses*

Renato Mio, Midori Sánchez and Quino Valverde

Investigating Electrode Sites for Intention Detection During Robot Based Hand Movement Using EEG-BCI System

Maryam Butt, Golshah Naghdy, Fazel Naghdy, Geoffrey Murray and Haiping Du

Remote Assessment of Gait Deterioration Due to Memory Impairment in Elderly Adults Using Micro-Doppler Radar

Kenshi Saho, Kazuki Uemura and Michito Matsumoto

Estimating GRF (Ground Reaction Force) and Calibrating CoP (Center of Pressure) of an Insole Measured by a Low-Cost Sensor with Neural Network

Ho Seon Choi, Myounghoon Shim, Chang Hee Lee and Yoon Su Baek

S2.1: Cancer bioinformatics

MVPNets: Multi-Viewing Path Deep Learning Neural Networks for Magnification Invariant Diagnosis in Breast Cancer*

Padmaja Jonnalagedda, Daniel Schmolze and Bir Bhanu

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 and Ka-Lok Ng

Cancer Screening Using Biomimetic Pattern Recognition with Hyper-Dimensional Structures

Leonila Lagunes and Charles H. Lee

S2.2: Medical image and signal analysis I

Automated Evaluation of Hand Motor Function Recovery by Using Finger Pressure Sensing Device for Home Rehabilitation*

Yuta Furudate, Nanami Onuki, Kaori Chiba, Yuji Ishida and Sadayoshi Mikami

The delta generalized labeled multi-Bernoulli filter for cell tracking*

Chunmei Shi, Junjie Wang, Lingling Zhao and Xiaohong Su

Software Defined Radio-Based Testbed for Wireless Body Area Network

Zhiyu Chen, Junchao Wang, Kaining Han and Zeljko Zilic

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

Nan Lyu, Likang Xu, Ningmei Yu and Hejiu Zhang

S2.3 Tutorial: Assistive Research Biotechnologies for People in Need

Professor Nikolaos G Bourbakis

S2.4: Medical signal, sequence detection, DNA barcode

Decision Theory-Based DNA Barcoding Through Quick Response Code Representation*

Cheng-Hong Yang, Kuo-Chuan Wu, Hsueh-Wei Chang and Li-Yeh Chuang

Species Identification using Partial DNA Sequence: A Machine Learning Approachn using Partial

DNA Sequence: A Machine Learning Approach*

Tasnim Kabir, Abida Sanjana Shemonti and Atif Hasan Rahman

Comparative Analysis of System-Level Acceleration Techniques in Bioinformatics: A Case Study of Accelerating the Smith-Waterman Algorithm for BWA-MEM

Ernst Houtgast, Vlad-Mihai Sima, Koen Bertels and Zaid Al-Ars

Psycho-physiological Changes Depend on Differences in the Presentation Ratio of Non-target Stimuli

Hiroaki Yoshikawa and Hiroshi Hagiwara

Quantitative Frailty Assessment Using Activity of Daily Living (ADL)

Yasmeen Naz Panhwar, Fazel Naghdy, David Stirling, Golshah Naghdy and Janette Potter

Novel Parameters for ECG Signal Analysis Irrespective of Patient's Age, Sex and Heart Rate

Salah Hamdi, Asma Ben Abdallah and Mohamed Hedi Bedoui

Improved Multifactor Dimensionality Reduction for Epistasis Detection

Li-Yeh Chuang, Cheng-Hong Yang and Yu-Da Lin

S2.5: Cancer and medical bioinformatics

Identification of Several Core Overexpressed MicroRNAs that Could Predict Survival in Patients with Ovarian Cancer*

Eskezeia Y. Dessie, Ezra B. Wijaya, Chien-Hung Huang, David Agustriawan, Jeffrey J.P Tsai and Ka-Lok Ng

Quantitative Analysis of ECI2 Expression from RNA-seq for Breast Cancer Gene Signatures

Ming-Yi Yen, Hsueh-Ting Chu, Yu-Ching Chen and Jeffrey J. P. Tsai

Identification of Potential Long Non-coding RNA Biomarkers for Breast Cancer Patients with

Somatic BRCA1 Mutations from RNA-Seq Datasets

Jia-Hua Cai, Yu-Ching Chen, Hsueh-Ting Chu and Jeffrey J. P. Tsai

The Potential Dual-target Inhibitors for HER2/HSP90 Proteins from Traditional Chinese Medicine

Jih-Ying Chen, Chia-Min Chen, Pei-Chun Chang and Jeffrey J.P. Tsai

Regression-based Documents Reranking for Precision Medicine

Juncheng Ding, Wei Jin and Haihua Chen

S2.6: Medical image and signal analysis II

Detection of *H. pylori* Induced Gastric Inflammation by Diffuse Reflectance Analysis*

- Alexandre Krebs, Vania Camilo, Eliette Touati, Yannick Benezeth, Valérie Michel, Grégory Jouvion, Fan Yang, Dominique Lamarque and Franck Marzani
Implementation of an Ultrasound Platform for Proposed Photoacoustic Image Reconstruction Algorithm*
Enkhbat Batbayar, Enkhbaatar Tumenjargal, Chulgyu Song and Woonchul Ham
Three-Dimensional Segmentation of Mouse Embryonic Stem Cell Nuclei for Quantitative Analysis of Differentiation Activity Using Time-lapse Fluorescence Microscopy Images*
Yuan-Hsiang Chang, Hideo Yokota, Kuniya Abe and Ming-Dar Tsai
Corticospinal Tract (CST) reconstruction based on fiber orientation distributions (FODs) tractography*
Youshan Zhang
Using NIRS to detect brain oxyHb changes during short-term memory tasks
Takuya Sasabe and Hiroshi Hagiwara

S3.1: Special paper session - Biomedical Big Data

- Mutation Analysis of Second Primary Tumors in the Head and Neck Cancer by Next Generation Sequencing
Ting-Yuan Liu, Chien-Chin Lee, Hsi-Yuan Huang and Jan-Gowth Chang
The Amiloride Derivatives Regulate the Alternative Splicing of Apoptotic Gene Transcripts
Chien-Chih Lee, Wen-Hsin Chang, Ting-Yuan Liu, Yu-Chia Chen, Guan-Yu Chen, Yang-Chang Wu and Jan-Gowth Chang
The Role of mRNA Transporter in Human Cancer
Yu-Chia Chen, Chien-Chih Chiu, Han-Lin Chou and Jan-Gowth Chang

S3.2: Biological text mining and biomedical informatics

- EP-CapsNet: Extending Capsule Network with Inception Module for Electrophoresis Binary Classification*
Elizabeth Tobing, Murtaza Ashraf, Keejun Han and Mun Yong Yi
Semantic Relation Extraction for Herb-drug Interactions from the Biomedical Literature Using an Unsupervised Learning Approach
Khang Trinh, Duy Pham and Ly Le
Learning Effective Distributed Representation of Complex Biomedical Concepts
Khai Nguyen and Ryutarō Ichise

S3.3: Biological network inference and sequence analysis

- A Systems Biology Approach to Model Gene-Gene Interaction for Childhood Sarcomas
Dong Ling Tong and Christine Siew Ken Lee
Prediction of Plant-Disease Relations Based on Unani Formulas by Network Analysis
Shaikh Farhad Hossain, Sony Hartono Wijaya, Ming Huang, Irmanida Batubara, Shigehiko Kanaya and Md. Altaf-Ul-Amin
Computational Modeling of the Early Development of Embryonic Leaves in Maize
Charles C.N. Wang, Pei-Chun Chang, Phillip C.Y. Sheu and Jeffrey J.P. Tsai
iLMS, computational identification of lysine-malonylation sites by combining multiple sequence features
Md. Mehedi Hasan and Hiroyuki Kurata

S3.4 Computational Modeling and sensor in biomedical engineering

- Finite Element Modelling for the Detection of Breast Tumor
Olzhas Mukhmetov, Dastan Igali, Yong Zhao, Sai Cheong Fok, Soo Lee Teh and Aigerim Mashekova
Computational Modeling of Traumatic Brain Injury Due to Impact on Different Sides of Human Head*
Tanu Khanuja and Harikrishnan N. Unni
Sigma-Delta ADC for Image Sensor in Virtual and Augmented Reality Camera to Medical Training
Wen Cheng Lai

* regular paper (revised and dated Oct. 29, 2018)