IEVC2019
The 6th IIEEJ International Conference on Image Electronics and Visual Computing

Aug. 21 - 24, 2019
Bintang Bali Resort,
Kuta Bali, Indonesia

Organized by
The Institute of Image Electronics Engineers of Japan

In special cooperation with
Universitas Kristen Krida Wacana (UKRIDA)
Udayana University (UNUD), Department of Information Technology
Indonesia Institute of Science (LIPI)

In cooperation with
The Imaging Society of Japan (ISJ)
The Society of Photography and Imaging of Japan (SPIJ)
The Japanese Society of Printing Science and Technology (JSPT)
The Institute of Image Information and Television Engineers (ITIE)
The Special Interest Group of Computer Graphics and CAD, Information Processing Society of Japan (IPSJ)
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State Islamic University Syarif Hidayatullah Jakarta
Petra Christian University
Sepuluh Nopember Institute of Technology

Sponsored by
Support Center for Advanced Telecommunications Technology Research, foundation
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WELCOME MESSAGE

On behalf of the conference committee members, it is with great pleasure that I welcome you to The 6th IIEEJ International Conference on Image Electronics and Visual Computing (IEVC 2019) which will be held at Bintang Bali Resort, Kuta Bali, Indonesia, on August 21-24, 2019. This conference is the 6th international academic event of The Image Electronics Engineers of Japan (IIEEJ) based on the great success of IEVC2007 held in Cairns, Australia, IEVC2010 held in Nice, France, IEVC2012 held in Kuching, Malaysia, IEVC2014 held in Koh Samui, Thailand and IEVC2017 held in Danang, Vietnam.

The aim of the conference is to bring together researchers, engineers, developers, and students from various fields in both academia and industry for discussing the latest researches, standards, developments, implementations and application systems in all areas of image electronics and visual computing.

I would like to express my deepest appreciation to The Indonesia Institute of Science (LIPI), Krida Wacana Christian University (UKRIDA), Udayana University, Support Center for Advanced Telecommunications Technology Research (SCAT), Petra Christian University, Sepuluh Nopember Institute of Technology (ITS) Syarif Hidayatullah State Islamic University Jakarta and sponsor companies (EBA JAPAN, TOPCON TECHNOHOUSE CORPORATION) for supporting this event and all the organizing committee members who have dedicated their time and efforts to ensure the success of this conference.

I hope you will have an enjoyable stay at the beautiful island Bali. I am looking forward to seeing you at the conference.

Naoki KOBAYASHI

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The IEVC 2019 Conference Committee
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Technical Program

Thursday, August 22, 2019

9:00 - 9:30
1R: Inaugural Session
Moderator: Kiyoshi Tanaka (NTT Service Evolution Laboratories)
Opening Remark: Takafumi Saito (Tokyo University of Agriculture and Technology)
Congratulatory Speech: Dr. Erning Wihardjo (Rector of Krida Wacana Christian University)

9:30 - 10:20
1S: Keynote Speech
Chair: Takafumi Saito (Tokyo University of Agriculture and Technology)
[1S-1] Dr. Laksana Tri Handoko (Chairman of the Indonesia Institute of Science)
Strategy of the Indonesia Institute of Science (LIPI)

10:35 - 11:45
0P: Poster Fast Forward Session
Chair: Tomokazu Ishikawa (Toyo University)
1 min Short Presentations by All Poster Presenters
Lunch

13:30 - 15:30
1A: Session (Computer Vision)
Chair: Kunio Ohno (Monavis IT Consulting Co.)
[1A-1] Kazuma Uenishi, Jaime Sandoval, Munetoshi Iwakiri and Kiyoshi Tanaka
Likelihood-Based VKOP Detection with Reliability of Estimated Planes
[1A-2] Jaime Sandoval, Kazuma Uenishi, Munetoshi Iwakiri and Kiyoshi Tanaka
Robust, Efficient and Deterministic Planes Detection in Unorganized Point Clouds based on Sliding Voxels
[1A-3] Toshiki Kikuchi and Yuko Ozasa
[1A-4] Deepak Rai and Tomoko Ozeki
Smart Reading Device for Visually Impaired People
[1A-5] Shiori Yasue, Takayuki Itoh, Srinivasa Narasimhan and Naruhito Toyoda
Image Measurement and Accelerated Micro-Geometry Modeling of Human Skins Considering Skin Conditions of Each Part

13:30 - 15:30
1B: Session (Medical Image Processing)
Chair: Hideki Komagata (Saitama Medical University)
[1B-1] Invited Speech
Hideaki Haneishi, Ryohei Hashimoto, Tomohiro Kurata, Mami Kawasaki, Minor
Takahashi, Kazuya Nakano and Takashi Ohnishi
Image Acquisition and Analysis of Microcirculation
1B-2  Nina Sevani, Budi Harsono, Cynthia Hayat, Masahiro Ishikawa and Naoki Kobayashi  
Segmentation of Cell Nuclei Using Watershed Transform in the H&E-Stained Histopathological Images

1B-3  Eleni Aloupogianni, Hiroyuki Suzuki, Takaya Ichimura, Atsushi Sasaki, Hiroto Yanagisawa, Tetsuya Tsuchida, Masahiro Ishikawa, Naoki Kobayashi and Takashi Obi  
Binary Malignancy Classification of Skin Tissue Using Reflectance and Texture Features from Macropathology Multi-Spectral Images

1B-4  Lina Septiana, Hiroyuki Suzuki, Masahiro Ishikawa, Takashi Obi, Naoki Kobayashi, Nagaaki Ohyama, Takaya Ichimura, Atsushi Sasaki, Erning Wihardjo and Harry Arjadi  
Elastic and Collagen Fibers Segmentation Based on U-Net Deep Learning Using Hematoxylin and Eosin Stained Hyperspectral Images

1B-5  Victor Amrizal, Ageng Prasetyo, Nurul Faizah Rozy and Qurrotul Aini  
Invertebrate Fossil Classification Using Support Vector Machine Method

1B-6  Yuji Hatanaka, Mikiya Tajima, Wataru Sunayama, Ryo Kawasaki, Koko Saito, Chisako Muramatsu and Hiroshi Fujita  
Retinal Authentication Based on Image Registration Using ICP Algorithm

13:30 - 15:30
1C: Session (Imaging Device)
Chair: Makoto Omodani (Tokai University), Yoshimitsu NAGAO(Waseda University)

1C-1  Katsuhisa Ogawa  
Real-World High-Definition Video Archive System with 250 Million-pixel 19K13K Uncompressed Image Recorder

1C-2  Makoto Omodani and Hirohito Shibata  
Concept and Prototyping of Large Area Wall Display Using Electronic Paper Tile

1C-3  Kazuyuki Kojima  
Implementation of Self Localization System Using Frequency Modulated Led Lighting and Omnidirectional Camera for Wheelchair Basketball

1C-4  Akihiro Okuda and Tokiichiro Takahashi  
AR Display Guidance Services of Indoor Facilities Using 2.4 GHz Band Position/Direction Measuring Prototype

1C-5  Yoshimitsu Nagao, Alexander Ashcroft, Jiang Liu and Shigeru Shimamoto  
Safe Driving Measures for Elderly Drivers by W-DRM System

1C-6  Hideo Kasuga, Piyarat Silapasuphakornwong, Hideyuki Torii, Masahiro Suzuki and Kazutake Uehira  
Technique for Embed Information in 3D Printed Objects Using Near Infrared Fluorescent Dye

Coffee Break (15:30 - 16:00)

16:00 - 17:40
2A: Session (Image Processing)
Chair: Mikio Shinya (Toho University)

2A-1  Mihiro Ono, Masashi Baba, Ryo Furukawa, Daisuke Miyazaki and Shinsaku Hiura  
Filling Small Spots and Changing the Line Thickness of the Line Drawing by FCN

2A-2  Momoka Kawai, Shuhei Kodama and Tokiichiro Takahashi  
A Free Pour Latte Art Support System by Showing Paths of Pouring Milk Using Design Templates
16:00 - 17:40
2B: Session (Visualization)  Room2
Chair: Norimasa Yoshida (Nihon University)
[2B-1] Chiharu Sato, Naoki Kita and Takafumi Saito
Generating Route Panoramas for Street Guide Maps
Two-Dimensional Flow Field Visualization Using Hierarchical Poisson Disk Sampling
[2B-3] Haruna Ohashi, Toru Kano and Yuriko Takeshima
Gaze Analysis for Optimization of Advertisement Content Layout
[2B-4] Atsushi Miyazawa, Masanori Nakayama and Issei Fujishiro
User Experience Design in Virtual Learning Environment for Complex Projective Geometry
aflak: Visual Programming Environment with Macro Support for Collaborative and Exploratory Astronomical Analysis

16:00 - 17:40
2C: Session (Neural Network) Room3
Chair: Kiyoshi Tanaka (NTT Service Evolution Laboratories)
[2C-1] Kazuya Ueki and Tomoka Kojima
Analysis of Deep Learning Based Japanese Cursive Style Character Recognition
[2C-2] Esther Irawati Setiawan, Hans Juwantho, Joan Santoso, Surya Sumpeno, Kimiya Fujisawa and Mauridhi Heri Purnomo
Sentiment Analysis Using Stacking Based Ensemble Learning of Textual and Image Features on Social Media Posts
[2C-3] Zelin Zhang and Jun Ohya
Local Branch Ensemble Network: Autonomous Driving System Using End-to-End Deep Learning
[2C-4] Takeo Kaneko, Hiroyuki Fujimoto, Junya Morimoto, Takuya Hayashi, Junji Yamato and Jun Ohya
Applying Curvatures Estimated from 3D Point Clouds to Environment Recognition in Forests Using SegNet
[2C-5] Naofumi Akimoto and Yoshimitsu Aoki
Image Completion of 360-Degree Images by cGAN with Residual Multi-Scale Dilated Convolution
Friday, August 23, 2019

9:00 - 9:50
2S : Keynote Speech

Chair: Masanori Kakimoto (Tokyo University of Technology)
[2S-1] Prof. I Ketut Gede Darma Putra (Information technology department of Udayana University)
Digital Disruption Technology

Break (9:50 – 10:05)

10:05-10:10
Video Presentation by Sponsors

10:10 - 11:35
1P: Poster Session

[1P-1] Shohei Kinuta and Katsumi Tadamura
Development of a Support Tool for Creating Water Flow Animation from a Single Image

A Study on Depth Image Generation for Road Landscape Using Semantic Segmentation and Change in Size of Moving Object

[1P-3] Takashi Ozeki and Eiji Watanabe
Analysis of the Behavior of Students Considering Privacy

[1P-4] Thanandon Imaromkul, Makoto Fujisawa and Masahiko Mikawa
Heart and Blood Flow Simulation Using Position Based Dynamics

[1P-5] Yuuko Tsuzuki, Osamu Masuda and Makoto Hasegawa
A Propisal of Dot Pattern Design for 3D Drawing Using a Digital Pen

[1P-6] Yoshiaki Yamamoto, Kouhei Omote, Kazufumi Kaneda, Toru Tamaki, Bisser Raychev and Masashi Baba
Physically Based Color Restoration of Underwater Images Considering Scattering and Absorption

[1P-7] Aryo Nugroho, Kimiya Fujisawa, Adri Gabriel Sooai, Surya Sumpeno, Mauridhi Hery Purnomo
Enhancing Engagement Visualization Using Mean on Self Organizing Map

[1P-8] Sanetoshi Yamada, Keisuke Utsu and Osamu Uchida
Analysis of Usage Trends of Unicode Emojis in Tweets During Disasters

[1P-9] Mei Kodama
A Consideration on Accuracy Improvement of Screen Shake Determination Methods Using Motion Histograms

[1P-10] Kunio Ohno, Mitsuko Nishiguchi and Toshiko Kimura
A Study on Digital Signage Systems for Regional Information Sharing

[1P-11] Yumiko Sonobe and Mizuho Inuma
Promoting Sustainable Value Creation For Agriculture And Consumers "Image Utilization For Agricultural Platform"

[1P-12] Shohei Yamaguchi, Yoshihiro Sato, Shota Funaki, Atsutoshi Kurihara, Satoru Nakamura, Takao Ueno and Yue Bao
Unmanned Construction System Using a See-through HMD
13:20 - 15:00
3A: Session (CG Modeling) Room1
Chair: Makoto Fujisawa (University of Tsukuba)

[3A-1] Saeko Shinozaki, Masanori Nakayama and Issei Fujishiro
Visual Simulation of Tearing Papers Taking Anisotropic Fiber Structure into Account

[3A-2] Yutaro Togo, Yasunari Ikeda and Issei Fujishiro
Visual Simulation of Washing Denim with Fiber-level Details

[3A-3] Nobuhiko Mukai, Shu Akasaka and Youngha Chang
Candle Flame Simulation Considering Combustion States

Generating Space Shapes with TAP Curves

13:20 - 15:00
3B: Oral Session (General) Room2
Chair: Naoki Kobayashi (Saitama Medical University)

[3B-1] Katsuya Hasegawa and Mayu Kakushin
Visualization of Reduced Gravity Response of Small Animals by Low Cost Low Gravity Generator
13:20 - 15:00

**3C: Session (Medical and Training)**

**Room3**

**Chair:** Masahiro Ishikawa (Saitama Medical University)

[3C-1] Ihsan Supono, Benisius Anu, Wuwus Ardiatna, Masahiro Ishikawa, Naoki Kobayashi and Harry Arjadi

*Identification of Nucleus in Pancreas Cell of Hyper spectral Image Using Template-Matching and Axis Length-Based Methods*

[3C-2] Chanjin Seo, Masato Sabanai, Jun Ohya and Hiroyuki Ogata

*A Method of Proposing the Training Suitable for Supplementing an Exerciser’s Lacking Skill in Sprint*

[3C-3] Masato Sabanai, Chanjin Seo, Hiroyuki Ogata and Jun Ohya

*A Criterion That Evaluates the Sprinting Motion Using the Joint Coordinates Detected from the Video and Machine Learning*

[3C-4] Eri Yokoyama, Hiroshi Sunaga and Makoto J. Hirayama

*Cooperative E-Learning Applications Based on HTML-5 Canvas for Japanese Classical Literature Education*

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15:30 - 17:30

**4A: Session (CG Animation / CG Interaction)**

**Room1**

**Chair:** Nobuhiko Mukai (Tokyo City University)

[4A-1] Akiko Komatsu and Takayuki Itoh

*An Interactive Cartoon Generation System focusing on Difference among Multiple Cartoons*

[4A-2] Yuji Demura, Makoto Fujisawa and Masahiko Mikawa

*Particle-Based Volumetric Hair Interaction with Turbulent Flow*

[4A-3] Masaki Abe and Taichi Watanabe

*Real-Time Rendering Technique for Visual Expression of Aura Effect*


*Advanced Scene Construction and Composite System for Japanese Commercial Anime Production*


*An Immersive Virtual Museum Using a Head Mounted Display*

[4A-6] Shinji Mizuno

*Digital Contents for Creating and Watching 3DCG of Vehicles Based on Drawing*
15:30 - 17:30
4B: Session (General) Room2
Chair: Mei Kodama (Hiroshima University)

[4B-1] Natsuki Takayama and Hiroki Takahashi
Weakly-Supervised Learning for Continuous Sign Language Words Recognition Using DTW Based Forced Alignment and Isolated Word HMM Adjustment

[4B-2] Khin Sabai Htwe, Takaaki Ishikawa and Hiroshi Watanabe
Hand Joints Detection on Noisy Hand Poses Using Variational Autoencoder

[4B-3] Tomohiro Suzuki, Yutaka Shimada and Yukinobu Taniguchi
Human Pose Estimation and Motion Analysis for Estimating Bus Passenger Flows

Kansei Retrieval of Living Room Images by Regularized Canonical Correlation Analysis

15:30 - 17:30
4C: Session (Signage and Language) Room3
Chair: Osamu Uchida (Tokai University)

[4C-1] Makoto J. Hirayama
An Audio Projection Method by a Parametric Speaker for Sizzling Food Presentations on tabletop Displays

[4C-2] Kiyoshi Tanaka, Mushin Nakamura, Manabu Motegi, Kenya Suzuki and Yukihiro Nakamura
Is Web-based Signage Effective?

[4C-3] Kiyoshi Tanaka, Mushin Nakamura, Manabu Motegi, Kenya Suzuki and Yukihiro Nakamura
How to Create Personal Services of Digital Signage without Burdening Users

[4C-4] Mika Enomoto and Katsuya Takanashi
Multimodal Interaction Analysis of the Usage of Japanese Spatial-Temporal Deixis "KORE" and "SORE" in Cooperative Activities Within Intricate Material Environments

[4C-5] Kenji Mizutani, Mikihisa Matsumoto, Yuta Younou and Souta Kuboki
A Study on Number of Generations to Optimize Design of Japanese Character "Kanji" Using iGA

[4C-6] Luis Peralta, Jaime Sandoval, Munetoshi Iwakiri and Kiyoshi Tanaka
Pairwise Registration of Low Overlapping Unorganized 3D Point Clouds Using Supervoxel Segmentation

18:00 - 20:00
Banquet

Break (17:30 - 18:00)
[2P-1] Hideko Seki and Katsuya Hasegawa  
*Study of Health Promotion by Worshiping and "Goshuin" (Stamps) Collection*

*An Alternative Method for Measuring Ballistic Muscle Strength on Rodents*

[2P-3] Kohei Kajiwara, Nobuji Tetsutani and Hiroto Inoue  
*Study on Gestalt Collapse for Beta Motion in Peripheral Vision*

[2P-4] Seiya Iwasaki, Kohei Kajiwara and Nobuji Tetsutani  
*Study on Microsaccade with Involuntary Movement at Watching Checkerboard Patterns*

[2P-5] Takahiro Miyamoto, Kohei Kajiwara and Nobuji Tetsutani  
*Study on the Effect of Suppression Line Under the Contrast Reduction Caused by Edge Blur*

[2P-6] Taisei Inoue, Norimasa Yoshida and Motonori Ishibashi  
*Point Cloud Analysis for the Classification of Error Proneness*

[2P-7] Takuya Niimura, Ziyun Zhang, Hiroya Shinohara and Makoto Hasegawa  
*A Study on Thermal Image Generation from RGB Color Pictures Based on a Deep Learning System*

[2P-8] Naoki Takahashi and Makoto Hasegawa  
*A Study on Three-Dimensional Computer Graphics Reconstruction from a Historical Old Video*

*Photographing All the Teeth Simultaneously Using A 360° Camera*

[2P-10] Yumiika Kawabata, Hiroto Inoue and Nobuji Tetsutani  
*A Study of Optimum Display of Obstacles in 3DCG Games from a Third Person Point of View*

*A Questionnaire Survey of Requisite Characteristics for Collaboration Researches in the Bioinformatics Fields*

[2P-12] Yuki Ozawa, Isseki Miwa and Shigeru Akamatsu  
*Generation of 3D Face Image by Impression Transformation Vector Method - Viewpoint Dependency of Gender Difference Impression -*

[2P-13] Haruki Okada and Shigeru Akamatsu  
*Recognition of Finger Numeric Characters Through Depth Images Taken by Kinect V2 Sensor - Comparison of Classification Performances by CLAFIC Method and CNN -*

[2P-14] Kentaro Yasuda and Shigeru Akamatsu  
*Temporal Segmentation of a Sequence of Facial Expressions into Utterance Units Based on Its 3D Deformation*

[2P-15] Jifeng Xu and Tsuyoshi Saitoh  
*A Development of Stage Event Management System Using Virtual Reality Technique - Implementation of Layout Mode*

[2P-16] Yuki Ishibashi, Yoshiki Nishio, Hiroto Inoue and Nobuji Tetsutani  
*Proposal of Rendering Technique Making Semi-transparent Silhouettes of 3DCG Obstacles to Improve Visibility in Video Games*

[2P-17] Mikio Shinya and Michio Shiraishi  
*Rendering Underwater Using Plane-Parallel Scattering Model*
Application of Deep Learning and Open Access Geospatial Cloud Processing Platforms In Land Cover Mapping

Development of Multispectral Imaging System Using LED Illumination and CCD Camera for Microscope Slide Specimen

[2P-20] Shintaro Sakata, Shotto Takagi and Shinji Mizuno
Exaggeration of Jumping Motion by Manipulating Visual Information Using VR Technology

[2P-21] Ryuichi Fukushi, Mizuki Nakajima, Tomoko Saitoh and Tsuyoshi Saitoh
The Extraction and Visualization of Behavior of Livestock (calf) from an Image of Camera Attached to the Halter

[2P-22] Koki Murakami and Yoshikazu Yano
A Study on Elimination Method of Imaging Noises for the Documentation of Color Images Using Mobile Camera

[2P-23] Ruri Nomura and Katsuya Hasegawa
Development of Observation Method for Mountain Forest Using UAV

A Method to Resolve Mismatch Between 360-Degree Image and Binaurally Recorded Sound: a Pilot Study

DVC Video Coding Using Weighted Prediction and Adaptive Coding for Side Information

[2P-26] Emi Yuda, Yutaka Yoshida and Junichiro Hayano
Aging and Pedalling Responsiveness to Visual Stimuli

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**Break (10:30 - 10:45)**

10:45 - 11:35
**3S : Capstone Speech**
Room 1, 2
Chair: Naoki Kobayashi (Saitama Medical University)

[3S-1] Prof. Rolly Intan (Informatics Department of Petra Christian University)
Soft Computing Techniques for Constructing Intelligent Information System

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11:35 - 11:55
**Closing Session**
Room 1, 2
Moderator: Yuriko Takeshima (Tokyo University of Technology)
Award Presenter: Kazuto Kamikura (Tokyo Polytechnic University)
Closing Remark: Naoki Kobayashi (Saitama Medical University)
# Timetable

## Day 1: Wednesday, August 21, 2019
16:00 - 17:00 Registration

## Day 2: Thursday, August 22, 2019

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<td>1A: Session (Computer Vision)</td>
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<td>1C: Session (Imaging Device)</td>
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<td>Coffee Break</td>
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<td>2A: Session (Image Processing)</td>
<td>2B: Session (Visualization)</td>
<td>2C: Session (Neural Network)</td>
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## Day 3: Friday, August 23, 2019

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<td>8:30</td>
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<td>9:00</td>
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<td>2S: Keynote Speech</td>
<td>3A: Session (CG Modeling)</td>
<td>3B: Session (General)</td>
</tr>
<tr>
<td>9:50</td>
<td>10:05</td>
<td>Short Break</td>
<td>3C: Session (Medical and Training)</td>
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<td>10:05</td>
<td>10:10</td>
<td>Video Presentation by Sponsors</td>
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<td>10:10</td>
<td>11:35</td>
<td>1P: Poster Session</td>
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<td>11:35</td>
<td>13:20</td>
<td>Lunch</td>
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<tr>
<td>13:20</td>
<td>15:00</td>
<td>3A: Session (CG Modeling)</td>
<td>3B: Session (General)</td>
<td>3C: Session (Medical and Training)</td>
</tr>
<tr>
<td>15:00</td>
<td>15:30</td>
<td>Coffee Break</td>
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<tr>
<td>15:30</td>
<td>17:30</td>
<td>4A: Session (CG Animation / CG Interaction)</td>
<td>4B: Session (General)</td>
<td>4C: Session (Signage and Language)</td>
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<td>17:30</td>
<td>18:00</td>
<td>Break</td>
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<tr>
<td>18:00</td>
<td>20:00</td>
<td>Banquet</td>
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## Day 4: Saturday, August 24, 2019

<table>
<thead>
<tr>
<th>Start</th>
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<th>Room1</th>
<th>Room2</th>
<th>Room3</th>
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<tr>
<td>8:30</td>
<td>9:00</td>
<td>Registration</td>
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<td>2P: Poster Session</td>
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<td>3S: Capstone Speech</td>
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<td>2R: Closing Session</td>
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