Final Program

http://www.mva-org.jp/mva2019/

MVA2019

INTERNATIONAL CONFERENCE ON MACHINE VISION APPLICATIONS

May 27-31, 2019

National Olympics Memorial Youth Center, Tokyo, Japan

IAPR Distinguished Lectures

"Machine Learning for Autonomous Driving: The Ingredients for a Safe and Scalable System"

Prof. Amnon Shashua
(Mobileye, Intel Corp.,
Computer Science at the Hebrew University)

"From SLAM to Spatial AI"

Prof. Andrew Davison
(The Dyson Robotics Laboratory
at Imperial College London)

"AI Embedded in the Real World"

Hideki Asoh
(Artificial Intelligence Research Center
at National Institute of Advanced Industrial
Science and Technology)

Tutorial Courses

"Scaling-up Deep Learning for Autonomous Driving"

Dr. Jose M. Alvarez
(NVIDIA Corporation)

"3D Computer Vision and Open3D"

Prof. Jaesik Park
(POSTECH)

Sponsored by the MVA Organization

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IAPR

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The Institute of Electrical Engineers of Japan
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The Institute of Systems, Control and Information Engineers
The Institute of Image Electronics Engineers of Japan
The Japanese Society for Artificial Intelligence
The Japanese Society for Non-destructive Inspection
The Japan Society for Precision Engineering
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IMPORTANT NOTICE

For all participants

Awards: Winners of the MVA2019 Best Paper Award and the MVA2019 Best Practical Paper Award will be announced and commended at the conference closing. The Best Poster Award is given to excellent poster presenters, based on the votes by all participants. Three voting sheets should be found in the conference bag. We ask each participant to vote for the best presentation in each poster session. The ballot box will be closed 10 minutes before the session closes. The winner will be announced and commended at the conference closing.

Name badges: All participants are requested to wear their name badges during the conference. You may not be allowed to access the conference site without your name badge.

LAN: Wireless LAN is available at #304 in Central Building (Tutorial Course) and the Main Conference Hall except for the B1 Hall in Arts Building. Further information, including ID and password, will be provided at the registration desk.

Restaurants, ATMs, post offices, etc.
Please refer to the map (contained in your conference bag) for restaurants, ATMs, post offices, and convenience stores around the conference site.

For session chairs

- Please make sure to arrive at the Main Conference Hall at least 10 minutes before your session starts.
- Then please make sure that all the presenters in your session are present.
- Each presentation is 15-minutes including questions and answers as well as the time for setting up the presentation.

Online Proceedings

MVA2019 Proceedings are available online. Please visit our website at
http://www.mva-org.jp/Proceedings/2019/

For presenters in oral sessions

All oral presentations will be given in a single track at the main conference hall (Small Hall in Arts Building).

- Duration of an oral presentation is 15 minutes including 3 minutes for discussions, comments, questions, and answers.
- A projector is used for oral presentation. Slides should be prepared in the aspect ratio of 4:3. An oral presenter should provide a device that can output the slides to the projector through a VGA (D-sub 15). Audio can be transmitted via a stereo mini jack cable. A power source is provided.
- An oral presenter must be present at the Hall 10 minutes before the session starts, and must be recognized by the session chairs. The presentation slides should be checked with the provided equipment.
- All the oral presenters are also requested to have a poster presentation (at the subsequent poster session after the oral presentation). The poster should be displayed at the poster session area throughout the main conference days (May 28, 29, and 30).
- No snapshot presentation is necessary for oral presenters.

The Best Paper Award and the Best Practical Paper Award will be chosen from the oral presentations and presented at the closing session. Please attend the closing session.

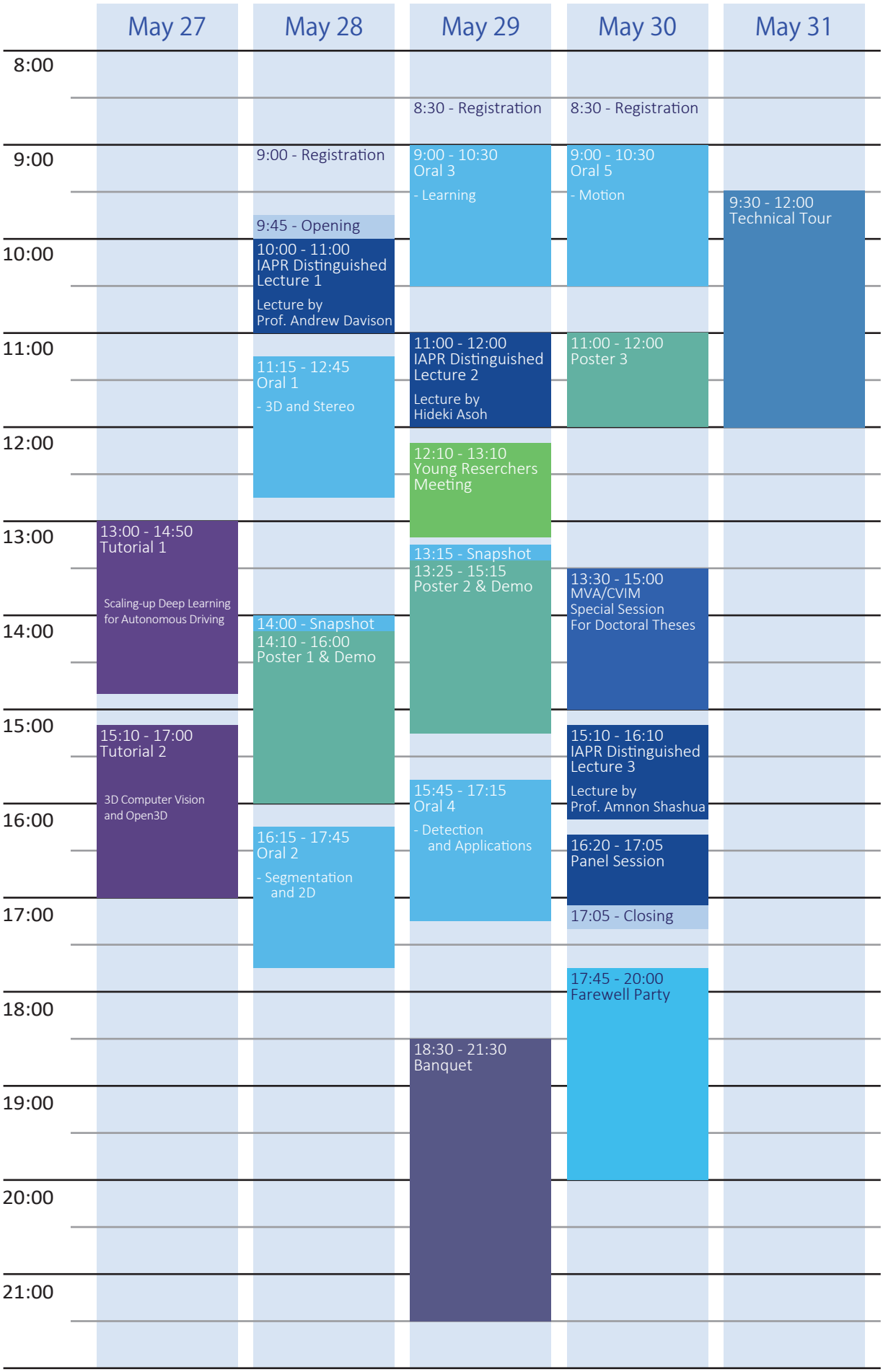
For presenters in poster sessions

The poster session will be held at the Demo & Poster hall in the basement floor in Arts Building. Presenters must present at their poster during your assigned session.

- The maximum size of a poster panel is a A0 portrait: 841 mm width × 1189 mm height. Texts and figures should be large enough to be read clearly at a distance of approximately 2 meters.
- Poster numbers should be attached on the panels. Thumbtacks (drawing pins) are provided for attaching your poster to the panel.
- All posters can be displayed throughout the main conference days (May 28, 29 and 30). Please do not forget to remove your poster by 1:00pm on May 30.
- All the poster presenters must present their accepted work for 30 seconds in the 'snapshot' session right before each poster session.

The Best Poster Awards are chosen by all participants' votes and awarded at the closing session. Please attend the closing session.

PROGRAM AT A GLANCE



CONFERENCE SCHEDULE

Monday, May 27, 2019

Tutorial 1 (13:00 – 14:50)
#304 in Central Building

Scaling-up Deep Learning for Autonomous Driving
Dr. Jose M. Alvarez (NVIDIA Corporation)

Tutorial 2 (15:10 – 17:00)
#304 in Central Building

3D Computer Vision and Open3D
Prof. Jaesik Park (POSTECH)

Tuesday, May 28, 2019

Opening (9:45 – 10:00)
Main Conference Hall

IAPR Distinguished Lecture 1 (10:00 – 11:00)
Main Conference Hall

From SLAM to Spatial AI
Prof. Andrew Davison (Imperial College London)

Break (11:00 – 11:15)

Oral Session 1: 3D and Stereo (11:15 – 12:45)
Main Conference Hall

01-01: SlamCraft: Dense Planar RGB Monocular SLAM
Jason Rambach (DFKI), Paul Lesur (DFKI), Alain Pagani (DFKI), Didier Stricker (DFKI)

01-02: Reconstruction with Guided PatchMatch Stereo
Trevor Gee (University of Auckland), Patrice Delmas (University of Auckland)

01-03: Recognition and 6D Pose Estimation of Large-scale Objects using 3D Semi-Global Descriptors
David Nospes (Technische Hochschule Mittelhessen), Kirill Safronov (KUKA Deutschland GmbH), Sarah Gillet (Royal Institute of Technology), Klaus Brillowski (Technische Hochschule Mittelhessen), Uwe E. Zimmermann (KUKA Deutschland GmbH)

01-04: Robust 3D Human Pose Estimation Guided by Filtered Subsets of Body Keypoints
Alexandros Makris (FORTH), Antonis Argyros (CSD-UOC, ICS-FORTH)

01-05: Uncalibrated photometric stereo constrained by intrinsic reflectance image and shape from silhouette
Shuhei Hashimoto (Hiroshima City University), Daisuke Miyazaki (Hiroshima City University), Shinsaku Hiura (Hiroshima City University)

01-06: Revisiting Visual Odometry for Real-Time Performance
Gaurav Singh (Nanyang Technological University Singapore), Meiqing Wu (Nanyang Technological University Singapore), Siew Kei Lam (Nanyang Technological University Singapore)

Lunch Break (12:45 – 14:00)

Poster Snapshot Session 1 (14:00 – 14:10)
Main Conference Hall

Poster Session 1 and Demo Session (14:10 – 16:00)
B1 Hall in Arts Building

Poster presentations for Oral Session 1

02-01: Zero-shot Learning of 3D Point Cloud Objects
Ali Cheraghian (Australian National University), Shafin Rahman (Australian National University), Lars Petersson (Data61/CSIRO)

02-02: Indexing in k-Nearest Neighbor Graph by Hash-Based Hill-Climbing
Munlika Rattaphun (National Chiayi University), Amorntip Prayoonwong (National Chiayi University), Chih-Yi Chiu (National Chiayi University)

02-03: Robust Auto-Calibration for Practical Scanning Setups from Epipolar and Trifocal Relations
Torben Fetzer (TU Kaiserslautern), Gerd Reis (DFKI), Didier Stricker (DFKI)

02-04: An Evaluation of Recent Local Image Descriptors for Real-World Applications of Image Matching
Fabio Bellavia (University of Florence), Carlo Colombo (DINFO, University of Florence)

02-05: Document Image Binarization using U-Net
Dhara Kotecha (DA-IICT), Manjunath Joshi (DA-IICT)

02-06: Skip-Pose Vectors: Pose-based motion embedding using Encoder-Decoder models
Yuta Shirakawa (Toshiba), Tatsuo Kozakaya (Toshiba)

02-07: Automatic Measurement of Visual Attention to Video Content using Deep Learning
Attila Schulc (Realeyes), Jeffrey F. Cohn (University of Pittsburgh, Realeyes), Jie Shen (Imperial College London), Maja Pantic (Samsung AI Centre Cambridge, Imperial College London, Realeyes)

02-08: Temporally Forward Nonlinear Scale Space with Octave Prediction for High Frame Rate and Ultra-Low Delay A-KAZE Matching System
Yuan Li (Waseda University), Songlin Du (Waseda University), Takeshi Ikenaga (Waseda University)

02-09: CNN-based Image Denoising for Outdoor Active Stereo
Chengchao Qu (Fraunhofer IOSB), Maksim Moiseikin (Fraunhofer IOSB), Sascha Voth (Fraunhofer IOSB), Jürgen Beyerer (Fraunhofer IOSB)

02-10: Online Targetless End-to-End Camera-LIDAR Self-calibration
Balázs Nagy(MTA SZTAKI, Pázmany Péter Catholic University), Levente Kovács (MTA SZTAKI), Csaba Benedek (MTA SZTAKI, Pázmany Péter Catholic University)

02-11: Measuring robustness of visual SLAM
David Prokhorov (Samsung AI Center), Dmitry Zhukov (Samsung AI Center), Olga Barinova (Samsung AI Center), Konushin Anton (Samsung AI Center), Anna Vorontsova (Samsung AI Center)

02-12: Spatial persevered deep image analogy
Nengjie Zhen (Macau University of Science and Technology), Junliang Li (Macau University of Science and Technology), Siyuan Yu (Macau University of Science and Technology), Hon-Cheng Wong (Macau University of Science and Technology), Sio-Long Lo (Macau University of Science and Technology), Ping Li (Macau University of Science and Technology), Un-Hong Wong (Macau University of Science and Technology)

02-13: Face Style Transfer and Removal with Generative Adversarial Network
Qiang Zhu (Simon Fraser University), Ze-Nian Li (Simon Fraser University)

02-14: Domain Adaptation using a Gradient Reversal Layer with Instance Weighting
Kosuke Osumi (Chubu University), Takayoshi Yamashita (Chubu University), Hironobu Fujiyoshi (Chubu University)

02-15: Single-wavelength and multi-parallel dotted- and solid-lines for dense and robust active 3D reconstruction
Genki Nagamatsu (Kyushu University), Ryo Furukawa (Hiroshima City University), Ryusuke Sagawa (AIST), Hiroshi Kawasaki (Kyushu University)

02-16: A Hierarchical Segmentation Approach with Convolution-Recursive Deep Learning for 3D Multi-Object Recognition under Partial Occlusion Conditions
Soma Boubou (TTI-J, Omron Corporation), Tatsuo Narikiyo (TTI-J), Michihiro Kawanishi (TTI-J)

02-17: Automatic Human Pose Annotation for Loose-fitting Clothes
Takuya Matsumoto (TTI-J), Kodai Shimosato (TTI-J), Takahiro Maeda (TTI-J), Tatsuya Murakami (TTI-J), Kou Murakoso (Toei), Kazuhiko Mino (Toei), Norimichi Ukita (TTI-J)

02-18: Exploring Better Food Detection via Transfer Learning
Jianing Sun (McGill University), Katarzyna Radecka (McGill University), Zeljko Zilic (McGill University)

02-19: PCB-METAL: A PCB Image Dataset for Advanced Computer Vision Machine Learning Component Analysis
Gayathri Mahalingam (University of North Carolina Wilmington), Kevin Marshall Gay (University of North Carolina Wilmington), Karl Ricanek Jr. (University of North Carolina Wilmington)

02-20: Performance Evalution of 3D Keypoint Detectors and Descriptors for Plants Health Classification
Shiva Azimi (Indian Institute of Technology-Delhi), Brejesh Lall (Indian Institute of Technology-Delhi), Tapan K. Gandhi (Indian Institute of Technology-Delhi)

02-21: A very concise feature representation for time series classification understanding
Pattreeya Tanisaro (University of Osnabrück), Gunther Heidemann (University of Osnabrück)

02-22: Spectral Normalization and Relativistic Adversarial Training for Conditional Pose Generation with Self-Attention
Yusuke Horiuchi (Waseda University), Edgar Simo-Serra (Waseda University), Satoshi Iizuka (University of Tsukuba), Hiroshi Ishikawa (Waseda University)

02-23: Video Colorization using CNNs and Keyframes extraction: An application in saving bandwidth
Ankur Singh (Indian Institute of Technology Kanpur), Anurag Chanani (Indian Institute of Technology Kanpur), Harish Karnick (Indian Institute of Technology Kanpur)

Break (16:00 – 16:15)

Oral Session 2: Segmentation and 2D (16:15 – 17:45)
Main Conference Hall

03-01: Accurate Ellipse Extraction in Low-Quality Images
Zezhong Xu (Changzhou Institute of Technology), Cheng Qian (Changzhou Institute of Technology), Shibo Xu (Changsha High-tech Engineering School), Reinhard Klette (Auckland University of Technology)

03-02: Auto-Retoucher(ART) — A Framework for Background Replacement and Foreground Adjustment
Yunxuan Xiao (Shanghai Jiao Tong University), Yikai Li (Shanghai Jiao Tong University), Yuwei Wu (Shanghai Jiao Tong University), Lizhen Zhu (Shanghai Jiao Tong University)

03-03: Uncertainty based model selection for fast semantic segmentation
Yu-Hui Huang (KU Leuven), Stamatios Georgoulis (ETH Zurich), Marc Proesmans (KU Leuven), Luc Van Gool (ETH Zurich)

03-04: Region-wise Modeling of Facial Skin Age using Deep CNNs
Matthew Shreve (PARC, A Xerox Company), Raja Bala (PARC), Wencheng Wu (University of Rochester), Beilei Xu (University of Rochester), Ankur Purwar (Procter & Gamble), Paul Mats (Procter & Gamble)

03-05: Re-staining Pathology Images by FCNN
Masayuki Fujitani (Waseda University), Yoshihiko Mochizuki (Waseda University), Satoshi Iizuka (University of Tsukuba), Edgar Simo-Serra (Waseda University), Hirokazu Kobayashi (Nagoya Institute of Technology), Chika Iwamoto (Kyushu University), Kenoki Ohuchida (Kyushu University), Makoto Hashizume (Kyushu University), Hidekata Hontani (Nagoya Institute of Technology), Hiroshi Ishikawa (Waseda University)

03-06: DCNN-GAN: Reconstructing Realistic Image from fMRI
Yunfeng Lin (Shanghai Jiao Tong University), Jiangbei Li (Shanghai Jiao Tong University), Hanjing Wang (Shanghai Jiao Tong University)

Wednesday, May 29, 2019

Oral Session 3: Learning (9:00 – 10:30)
Main Conference Hall

04-01: A Three-Player GAN: Generating Hard Samples To Improve Classification Networks
Simon Vandenhende (KU Leuven), Bert De Brabandere (KU Leuven), Davy Neven (KU Leuven), Luc Van Gool (KU Leuven)

04-02: UMGAN: Generative adversarial network for image unmosaicing using perceptual loss
Kamran Javed (Sungkyunkwan University), Nizam Ud Din (Sungkyunkwan University), Seho Bae (Sungkyunkwan University), Rahul S. Maharjan (Sungkyunkwan University), Donghwan Seo (Sungkyunkwan University), JuneHo Yi (Sungkyunkwan University)

04-03: Gradual Sampling Gate for Bidirectional Knowledge Distillation
Soma Minami (Chubu University), Takayoshi Yamashita (Chubu University), Hironobu Fujiyoshi (Chubu University)

04-04: Gait Recognition Based on Constrained Mutual Subspace Method with CNN Features
Akinari Sakai (University of Tsukuba), Naoya Sogi (University of Tsukuba), Kazuhiro Fukui (University of Tsukuba)

04-05: Improving image classifiers for small datasets by learning rate adaptations
Sourav Mishra (The University of Tokyo), Toshihiko Yamasaki (The University of Tokyo), Hideaki Imaizumi (exMedio Inc.)

04-06: Kernelized Cross-view Quadratic Discriminant Analysis for Person Re-Identification
Tetsu Matsukawa (Kyushu University), Einoshin Suzuki (Kyushu University)

Break (10:30 – 11:00)

IAPR Distinguished Lecture 2 (11:00 – 12:00)
Main Conference Hall

AI Embedded in the Real World
Hideki Asoh (Artificial Intelligence Research Center at National Institute of Advanced Industrial Science and Technology)

Lunch Break (12:00 – 13:15)

Young Researchers Meeting (12:10 – 13:10)
Café Friends on the second floor in Central Building

Poster Snapshot Session 2 (13:15 – 13:25)
Main Conference Hall

Poster Session 2 and Demo Session (13:25 – 15:15)
B1 Hall in Arts Building

Poster presentations for Oral Session 2 and 3

05-01: Learning Based Character Segmentation Method for Various License Plates
PyongKun Kim (Electronics and Telecommunications Research Institute), Kil-Taek Lim (Electronics and Telecommunications Research Institute), DooSik Kim (Electronics and Telecommunications Research Institute)

05-02: Welding Joints Inspection via Residual Attention Network
Jinguo Zhu (Xi'an Jiaotong University), Zejian Yuan (Xi'an Jiaotong University), Tie Liu (Capital Normal University)

05-03: Residual Squeeze-and-Excitation Network for Battery Cell Surface Inspection
Ziyang Song (Xi'an Jiaotong University), Zejian Yuan (Xi'an Jiaotong University), Tie Liu (Capital Normal University)

05-04: Bullet-time image generation without 3-D
Yasuyuki Sugaya (Toyohashi University of Technology), Keita Ohseki (Toyohashi University of Technology)

05-05: Autoencoder-Based Fabric Defect Detection with Cross-Patch Similarity
Hu Tian (Fujitsu Research & Development Center Co., Ltd.), Fei Li (Fujitsu Research & Development Center Co., Ltd.)

05-06: Human identification by gait from event-based camera
Anna Sokolova (Samsung-MSU Laboratory, Lomonosov Moscow State University, NRU Higher School of Economics), Anton Konushin (Samsung-MSU Laboratory, Lomonosov Moscow State University, Samsung AI Center)

05-07: The CASE Dataset of Candidate Spaces for Advert Implantation
Soumyabrata Dev (Trinity College Dublin), Murhaf Hossari (Trinity College Dublin), Matthew Nicholson (Trinity College Dublin), Killan McCabe (Trinity College Dublin), Atul Nautiyal (Trinity College Dublin), Clare Conran (Trinity College Dublin), Jian Tang (Huawei Ireland Research Center), Wei Xu (Huawei Ireland Research Center), François Pitié (Trinity College Dublin)

05-08: Team Formation Mapping and Sequential Ball Motion State Based Event Recognition for Automatic Data Volley
Linzi Liang (Waseda University), Xina Cheng (Waseda University), Takeshi Ikenaga (Waseda University)

05-09: End-to-end Person Re-identification: Top View Analytics
Siti Khairuni Amalina Kamarol (Intel), Wendy, Siew Wen Chin (Intel)

05-10: End-to-End Feature Pyramid Network for Real-Time Multi-Person Pose Estimation
Dingli Luo (Waseda University, University of Electronic Science and Technology of China), Songlin Du (Waseda University), Takeshi Ikenaga (Waseda University)

05-11: 3D Object Trajectory Reconstruction using Stereo Matching and Instance Flow based Multiple Object Tracking
Sebastian Bullinger (Fraunhofer IOSB), Christoph Bodensteiner (Fraunhofer IOSB), Michael Arens (Fraunhofer IOSB)

05-12: Integrating Visual and Geometric Consistency for Pose Estimation
Huiqin Chen (Paris-Saclay University), Emanuel Aldea (Paris-Saclay University), Sylvie Le Hégarat-Mascle (Paris-Saclay University)

05-13: Pupil Localization for Ophthalmic Diagnosis Using Anchor Ellipse Regression
Horng-Horng Lin (Southern Taiwan University of Science and Technology), Zheng-Yi Li (National Cheng Kung University), Min-Hsiu Shih (National Cheng Kung University), Yung-Nien Sun (National Cheng Kung University), Ting-Li Shen (National Cheng Kung University)

05-14: News2meme: An Automatic Content Generator from News Based on Word Subspaces from Text and Image
Erica K. Shimomoto (University of Tsukuba), Lincon S. Souza (University of Tsukuba), Bernardo B. Gatto (Center for Artificial Intelligence Research), Kazuhiro Fukui (Center for Artificial Intelligence Research)

05-15: EyeWeS: Weakly Supervised Pre-Trained Convolutional Neural Networks for Diabetic Retinopathy Detection
Pedro Costa (INESC TEC), Teresa Araújo (INESC TEC, University of Porto), Guilherme Aresta (INESC TEC, University of Porto), Adrian Galdran (INESC TEC), Ana Maria Mendonça (University of Porto), Asim Smailagic (Carnegie Mellon University), Aurélio Campilho (University of Porto)

05-16: Accurate Hand Keypoint Localization on Mobile Devices
Filippos Gouidis (University of Crete), Paschalis Panteleris (FORTH), Iason Oikonomidis (FORTH), Antonis Argyros (FORTH, University of Crete)

05-17: FoodTracker: A Real-time Food Detection Mobile Application by Deep Convolutional Neural Networks
Jianing Sun (McGill University), Katarzyna Radecka (McGill University), Zeljko Zilic (McGill University)

05-18: A Photo Booth That Finds Your Sports Player Lookalike
Mitsuru Nakazawa (Rakuten Institute of Technology), Tomoyuki Mukasa (Rakuten Institute of Technology), Björn Stenger (Rakuten Institute of Technology)

05-19: Phenotypic Profiling of High Throughput Imaging Screens with Generic Deep Convolutional Features
Philip T. Jackson (Durham University), Yinhai Wang (AstraZeneca), Sinead Knight (AstraZeneca), Hongming Chen (AstraZeneca), Thierry Dorval (AstraZeneca), Martin Brown (AstraZeneca), Claus Bendtsen (AstraZeneca), Boguslaw Obara (Durham University)

05-20: Visual Rhythm Prediction with Feature-Aligning Network
Yutong Xie (Shanghai Jiao Tong University), Haiyang Wang (Shanghai Jiao Tong University), Yan Hao (Shanghai Jiao Tong University), Zihao Xu (Shanghai Jiao Tong University)

05-21: Invariant Spatial Information for Loop-Closure Detection
Ryohei Yamamoto (University of Fukui), Kanji Tanaka (University of Fukui), Koji Takeda (University of Fukui)

05-22: Sparse depth completion with RGB guidance and uncertainty
Wouter Van Gansbeke (KU Leuven), Davy Neven (KU Leuven), Bert De Brabandere (KU Leuven), Luc Van Gool (KU Leuven)

Break (15:15 – 15:45)

Oral Session 4: Detection and Applications (15:45 – 17:15)
Main Conference Hall

06-01: BallTrack: Football ball tracking for real-time CCTV systems
Jacek Komorowski (Warsaw University of Technology, Sport Algorithmics and Gaming), Grzegorz Kurzejamski (Warsaw University of Technology, Sport Algorithmics and Gaming), Grzegorz Sarwas (Warsaw University of Technology, Sport Algorithmics and Gaming)

06-02: Super accurate low latency object detection on a surveillance UAV
Maarten Vandersteegen (KU Leuven), Kristof Van Beeck (KU Leuven), Toon Goedemé (KU Leuven)

06-03: Unsupervised Anomaly Detection with Compact Deep Features for Wind Turbine Blade Images Taken by a Drone
Yinan Wang (The University of Tokyo), Ryota Yoshihashi (The University of Tokyo), Rei Kawakami (The University of Tokyo), Shaodi You (Data61-CSIRO), Tohru Harano (EcoPower Co., Ltd.), Masahiko Ito (EcoPower Co., Ltd.), Katsura Komagome (EcoPower Co., Ltd.), Makoto Iida (The University of Tokyo), Takeshi Naemura (The University of Tokyo)

06-04: Spatio-temporal eye contact detection combining CNN and LSTM
Yuki Watanabe (Kyoto University), Atsushi Nakazawa (Kyoto University), Yu Mitsuzumi (Kyoto University), Toyoaki Nishida (Kyoto University)

06-05: Hotspots Integrating of Expert and Beginner Experiences of Machine Operations through Egocentric Vision
Longfei Chen (Kyoto University), Yuichi Nakamura (Kyoto University), Kazuaki Kondo (Kyoto University), Dima Damen (University of Bristol), Walterio W. Mayol-Cuevas (University of Bristol)

06-06: Cooking Video Summarization Guided By Matching with Step-By-Step Recipe Photos
Ryo Sobue (Chubu University), Mitsuru Nakazawa (Rakuten Institute of Technology), Yeongnam Chae (Rakuten Institute of Technology), Bjorn Stenger (Rakuten Institute of Technology), Takayoshi Yamashita (Chubu University), Hironobu Fujiyoshi (Chubu University)

Banquet (18:30 – 21:30)
HYATT REGENCY TOKYO

Thursday, May 30, 2019

Oral Session 5: Motion (9:00 – 10:30)
Main Conference Hall

07-01: Learning 3D Joint Constraints from Vision based Motion Capture Datasets
Pramod Murthy (DFKI, Technische Universität Kaiserslautern), Hammad T. Butt (DFKI, National University of Sciences and Technology), Sandesh Hiremath (Technische Universität Kaiserslautern), Alireza Khoshhal (DFKI), Didier Stricker (DFKI, Technische Universität Kaiserslautern)

07-02: Human-Object Maps for Daily Activity Recognition
Haruya Ishikawa (Keio University), Yuchi Ishikawa (Keio University), Shuichi Akizuki (Keio University), Yoshimitsu Aoki (Keio University)

07-03: Heatmapping of People Involved in Group Activities
Kohei Sendo (TTI-J), Norimichi Ukita (TTI-J)

07-04: Perspective-Aware Loss Function for Crowd Density Estimation
Bedir Yilmaz (National University of Malaysia), Ven Jyn Kok (National University of Malaysia), Mei Kuan Lim (Monash University), Siti Norul Huda Sheikh Abdullah (National University of Malaysia)

07-05: Similar Finger Gesture Recognition using Triplet-loss Networks
Gibran Benitez-Garcia (TTI-J), Muhammad Haris (TTI-J), Yoshiyuki Tsuda (DENSO CORPORATION), Norimichi Ukita (TTI-J)

07-06: Consolidating Segmentwise Non-Rigid Structure from Motion
Vladislav Golyanik (MPI for Informatics, University of Kaiserslautern), André Jonas (University of Kaiserslautern), Didier Stricker (DFKI)

Break (10:30 – 11:00)

Poster Session 3 (11:00 – 12:00)
B1 Hall in Arts Building

Poster presentations for Oral Session 4 and 5

Lunch Break (12:00 – 13:30)

MVA/CVIM Special Session for Doctoral Theses
(13:30 – 15:00)
Main Conference Hall

A Novel Catadioptric Ray-Pixel Camera Model and its Application to 3D Reconstruction
Ryo Kawahara, Shohei Nobuhara (Kyoto University)

Light Transport Acquisition via Selective Light Path Measurement
Iwaguchi Takafumi, Kubo Hiroyuki, Funatomi Takuya, Tanaka Kenichiro, Mukaigawa Yasuhiro (NAIST)

IAPR Distinguished Lecture 3 (15:10 – 16:10)
Main Conference Hall

Machine Learning for Autonomous Driving: The Ingredients for a Safe and Scalable System
Prof. Amnon Shashua (Mobileye, Intel Corp., Computer Science at the Hebrew University)

Break (16:10 – 16:20)

Panel Session (16:20 – 17:05)
Main Conference Hall

Closing (17:05 – 17:20)
Main Conference Hall

Farewell Party (17:45 – 20:00)
Reception Hall in International Exchange Building

Friday, May 31, 2019

Technical Tour (10:00 – 12:00; Meeting Time 9:30)
Institute of Industrial Science, the University of Tokyo

EVENTS

IAPR Distinguished Lectures

From SLAM to Spatial AI

Prof. Andrew Davison
Director of the Dyson Robotics Laboratory at Imperial College London

Date: Tuesday, May 28, 2019
Time: 10:00 – 11:00
Place: Main Conference Hall

Abstract: To enable the next generation of smart robots and devices which can truly interact with their environments, Simultaneous Localization and Mapping (SLAM) will progressively develop into a general geometric and semantic 'Spatial AI' perception capability. I will give many examples from our work on gradually increasing visual SLAM capability over the years. However, much research must still be done to achieve true Spatial AI performance. A key issue is how estimation and machine learning components can be used and trained together as we continue to search for the best long-term scene representations to enable intelligent interaction. Further, to enable the performance and efficiency required by real products, computer vision algorithms must be developed together with the sensors and processors which form full systems, and I will cover research on vision algorithms for non-standard visual sensors such as event cameras as well as concepts for the longer term future of coupled algorithms and computing architectures.

AI Embedded in the Real World

Hideki Asoh
Deputy Director of Artificial Intelligence Research Center at National Institute of Advanced Industrial Science and Technology

Date: Wednesday, May 29, 2019
Time: 11:00 – 12:00
Place: Main Conference Hall

Abstract: Artificial intelligence technology has been rapidly expanding mainly by utilizing the vast amount of data and knowledge collected through Internet services such as search, e-commerce, and social network, so far. However, as the next phase of development, AI embedded in the real-world, that is, AI based on data collected through various kinds of services and life activities in the real world is becoming important recently in concert with the development of IoT device technologies and robot technologies. Artificial intelligence research center (AIRC) under AIST was established in 2015 as one of the largest open-innovation-hub of AI technologies in Japan and is developing innovative AI technologies which will solve difficult problems through collaborating with humans in the real world, and promoting their implementation into the real world. In this talk, I will introduce some topics related to machine vision and applications from our activities, and also discuss on future direction of AI research towards implementation in the real-world.

Machine Learning for Autonomous Driving: The Ingredients for a Safe and Scalable System

Prof. Amnon Shashua
President & CEO, Mobileye
Senior Vice President, Intel Corp.
Sachs Professor of Computer Science at the Hebrew University,

Date: Thursday, May 30, 2019
Time: 15:10 – 16:10
Place: Main Conference Hall

Abstract: Autonomous driving is being developed around the globe by dozens of tech companies — the majority of which rely on the primacy of Lidar. I will present the work being done at Mobileye, an Intel company, which addresses the issues from a novel and unique way. I will explain why cameras should be the prime sensing modality, why redundancy is crucial and how to achieve it, the need for a formal safety model living outside of statistical reasoning, and the need for scalability and how to achieve it.

Tutorial Courses

Scaling-up Deep Learning for Autonomous Driving

Dr. Jose M. Alvarez
Senior Research Scientist, NVIDIA Corporation

Date: Monday, May 27, 2019
Time: 13:00 – 14:50
Place: #304 on the third floor in Central Building

Abstract: Deep learning has rapidly moved from research to be a key component in providing industrial impact in areas such as autonomous driving. From initial semantic segmentation to more recent advanced systems, these algorithms continuously increase the consumption of data and computational resources. The amount of data being acquired, and the need of annotations keep growing exponentially and open new challenges to improve accuracy and to achieve the desired safety level. In this talk, I will explore some of these challenges along with our proposed solutions in terms of active learning, computational efficiency and the efficient use of synthetic data for training deep networks.

3D Computer Vision and Open3D

Prof. Jaesik Park
Assistant Professor, POSTECH

Date: Monday, May 27, 2019
Time: 15:10 – 17:00
Place: #304 on the third floor in Central Building

Abstract: The world is 3D — recovering and understanding a 3D scene is a fundamental task for intelligent systems. This talk will be devoted to how to capture 3D data and how to apply 3D data to machinery. The tutorial overviews several high quality 3D reconstruction techniques, and introduces a new convolution kernel designed for scene understanding and point-wise prediction. The next topic is Open3D — a new open source library that provides basic and advanced 3D processing algorithms with easy user interface. This tutorial will introduce basic usage of Open3D, and how to utilize it for custom 3D computer vision projects.

Young Researchers Meeting

Date: Wednesday, May 29, 2019
Time: 12:10 – 13:10
Place: Café Friends on the second floor in Central Building

What's this event?

State-of-the-art technology companies are craving talented and highly motivated researchers, while it can be difficult for such researchers to find companies in which they can play truly active part. In response to earnest requests from the both sides, we will hold an event to match them in a conference. Researcher participants will meet with company recruiters in small groups during complimentary lunch sessions. Compact group discussion could lead to effective self-promotion and opportunities for jobs, internships, and special tech-related events such as a hackathon. Do not miss this great opportunity to build close relationships with worldwide industrial society.

* This program is co-sponsored by the JST CREST Math Model/Random Field Project.

Registration

You can join this event through the registration site. Participants must register to the MVA2019 conference, but are not required to be presenters. First 50 (tentative) applications will be accepted. Registration is free of charge.

Contact

Please contact the technical event chair, if you have any questions about this event.

Panel Session

AI for machine vision and its application to autonomous driving

Date: Thursday, May 30, 2019
Time: 16:20 – 17:05
Place: Main Conference Hall

Demo Session

Date: Tuesday, May 28, 2019 and Wednesday, May 29, 2019
Time: 14:00 – 16:00 (May 28), 13:15 – 15:15 (May 29)
Place: B1 Hall in Arts Building

The following institutes will demonstrate their products and technologies:

Institute	Title
Honda R&D Co., Ltd	Personal Car Automated Driving System using Fusion Technology Combined with AI and Model-base Control
SICK, Ibeo	Mapping-&-Localization(tentative)
Huawei Technologies Japan K.K.	Image Processing and Computer Vision for Smart Phone Cameras
Morpho, Inc.	Three methods for depth estimation on smartphones
CyberAgent, Inc.	Research at CyberAgent AI Lab
Panasonic	Panasonic Research and Development on Artificial Intelligence
Antal Innovation Mexico, Co. and Universidad Autonoma del Estado de Mexico (UAEMEX)	Design and development of artificial vision for robot learning in the agricultural sector, to estimate crop volume. (Case study Avocados, Michoacán, Mexico)
Keio University	IoT with Google Vision Kit (tentative)
Electrical and Mechanical Services Department, Hong Kong S.A.R. Government	Smart Fever Screening System for Health Clearance
Cookpad Inc.	Searching Recipes by Ingredients using Augmented Reality

MVA/CVIM Special Session for Doctoral Theses

Date: Thursday, May 30, 2019
Time: 13:30 – 15:00
Place: Main Conference Hall

The joint special session with IPS Japan (Information Processing Society of Japan) SIG-CVIM (Special Interest Group on Computer Vision and Image Media) provides an opportunity to students who are close to finishing, or who have recently finished, their doctoral degree to present their research and to have discussion with other conference participants.

Banquet

Date: Wednesday, May 29, 2019
Time: 18:30 – 21:30
Place: “Momoyama” on the B1 floor in HYATT REGENCY TOKYO

The Banquet will be held on May 29, 2019 at Hyatt Regency Tokyo. You will need a banquet ticket to attend. We will provide shuttle bus service to the banquet venue. However, the capacity of shuttle bus will be only 60 persons so please use public transport as much as possible to get to the hotel.

Public transportation guide:

Keio bus (every 8min., needs cash or IC card)
It takes 15min (10min for bus, and 5min for walk).

- Get on at Yoyogi 5, Bus stop:1 (in front of conference venue, opposite side of the road.)
- Get off at Shinjuku Sumitomo Building
- Walk to the banquet venue.

Farewell Party

Date: Thursday, May 30, 2019
Time: 17:45 – 20:00
Place: Reception Room on the second floor in International Exchange Building

Technical Tour

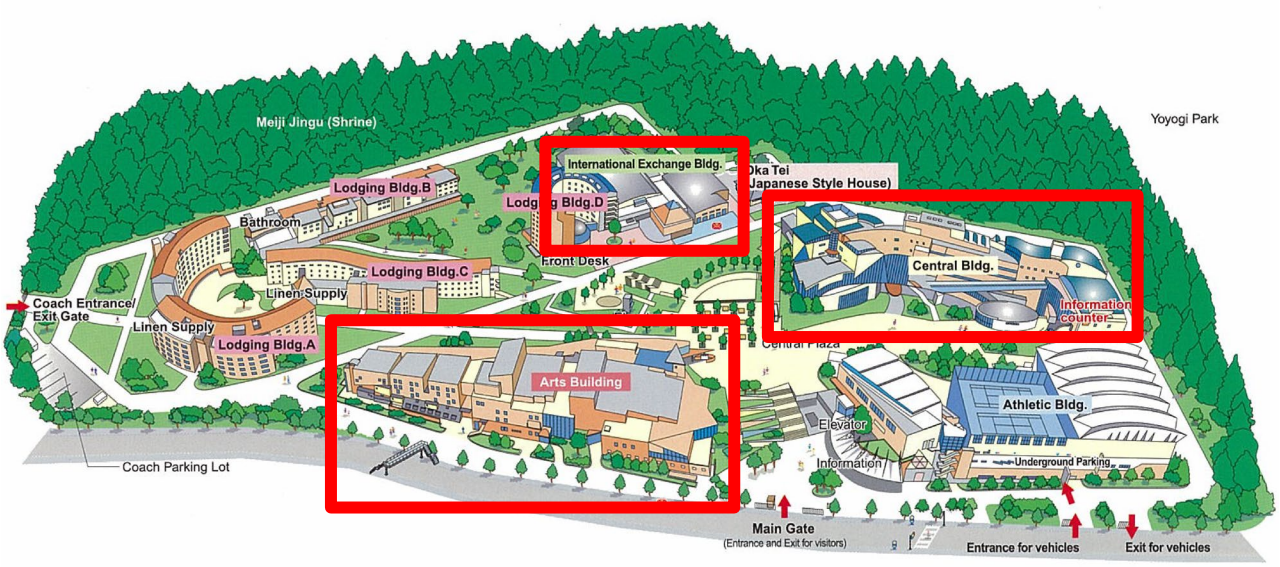
Date: Friday, May 31, 2019
Time: 10:00 – 12:00
Place: Institute of Industrial Science, the University of Tokyo
Meeting Time: 9:30
Meeting Location: TBA

We will visit several labs at Institute of Industrial Science, the University of Tokyo. The capacity is limited. You can make a reservation from the registration website. We will provide shuttle bus service from conference venue to the labs.
For more details about Institute of Industrial Science, please visit the URL below.

http://www.komaba-oh.jp/en/

CONFERENCE VENUE

The main conference will be held in Arts Building. Tutorial courses and Young Researchers Meeting will be held in Central Building.

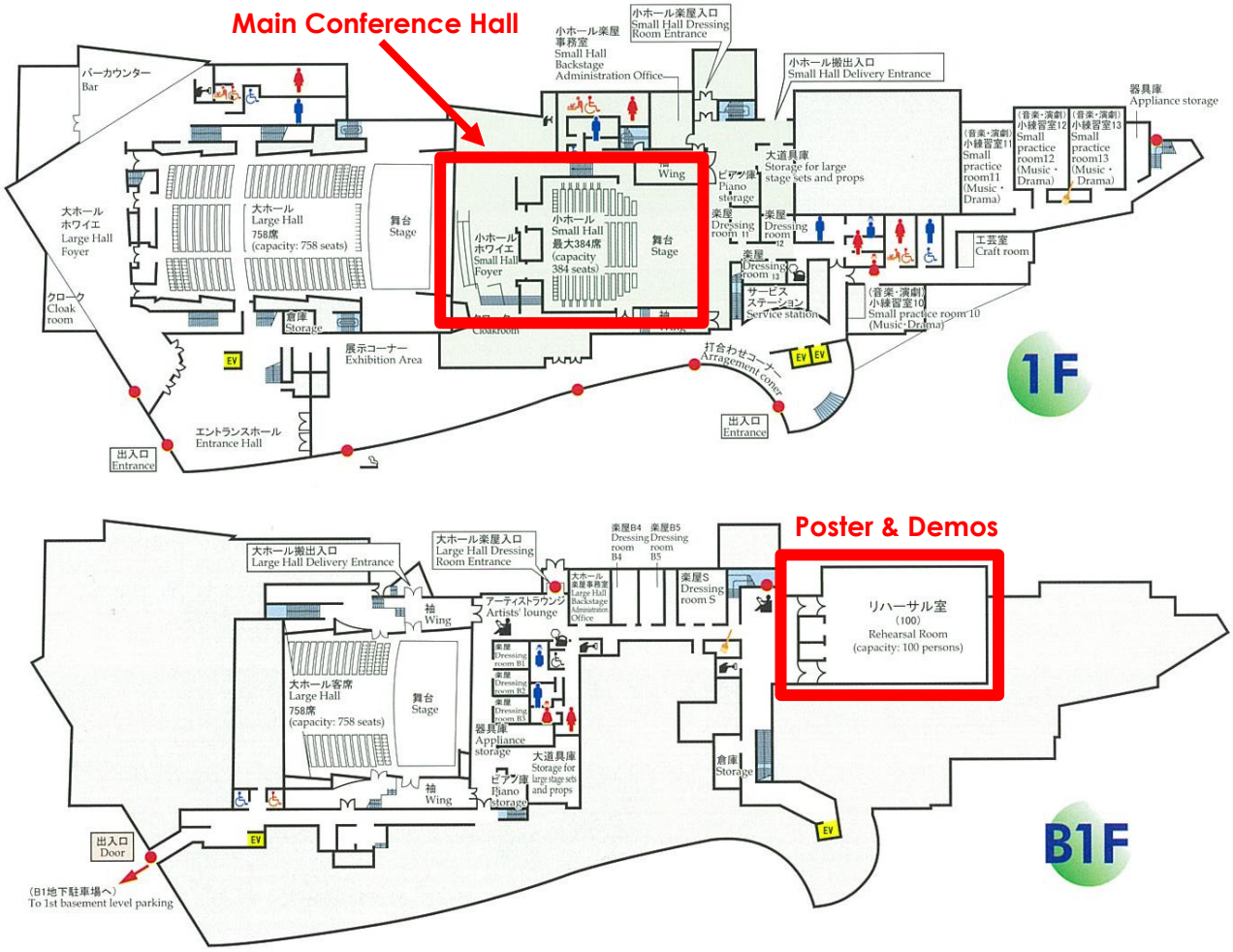


Building	Room	Events / Session
Arts Building	1F “Small Hall Foyer”	Registration Coffee breaks
	1F “Small Hall”; Main Conference Hall	IAPR Distinguished Lectures Panel Session Oral Sessions MVA/CVIM Special Session Poster Snapshot Session
	B1 “Rehearsal Room”; B1 Hall	Poster Session Demo Session
Central Building	3F #304	Tutorial Courses
	2F Café Friends	Young Researchers Meeting
International Exchange Building	2F Reception Hall	Farewell Party

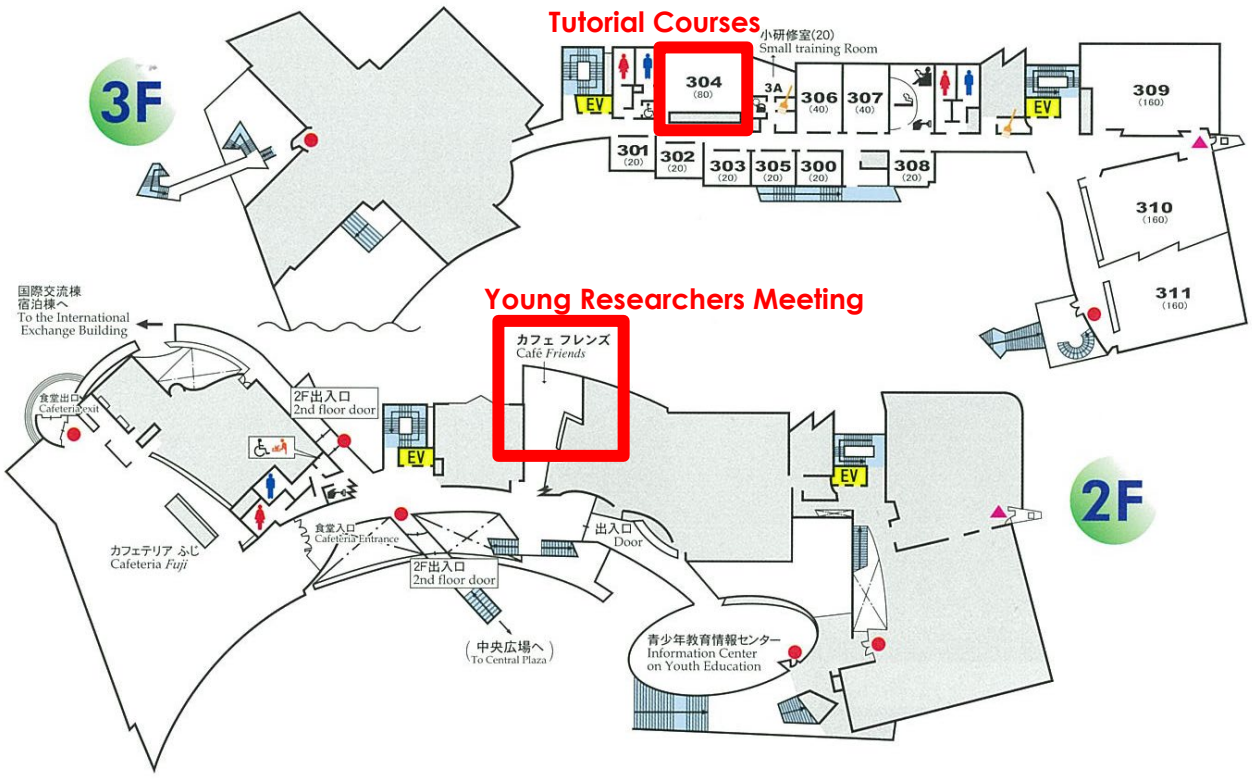
For more details, please visit the website of National Olympics Memorial Youth Center.
https://nyc.niye.go.jp/en/by-car/
https://nyc.niye.go.jp/en/central-building/
https://nyc.niye.go.jp/en/arts-building/

FLOOR MAP

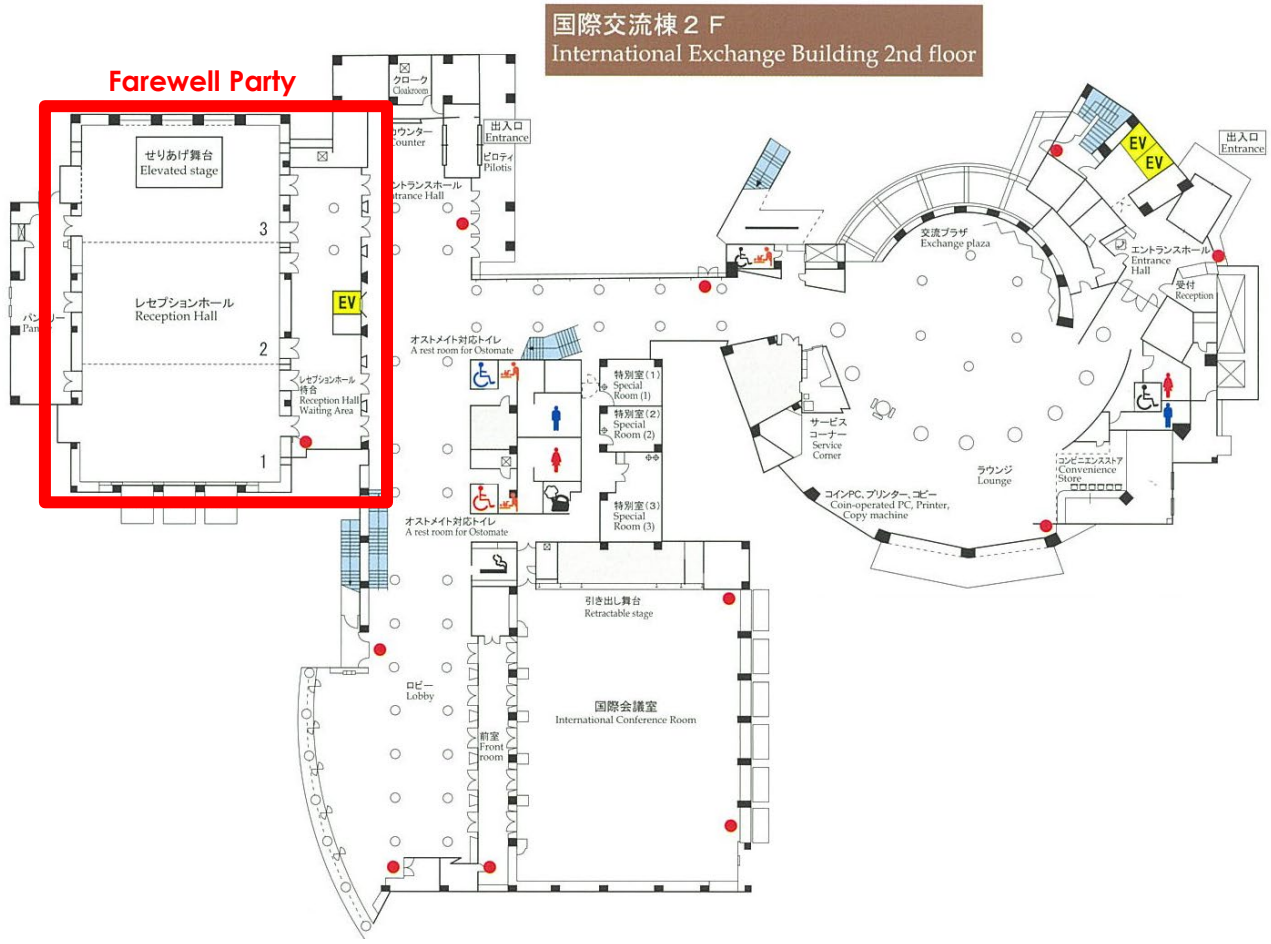
Arts Building



Central Building



International Exchange Building



Map Source: https://nyc.niye.go.jp/category/facilities/