Final Program

http://www.mva-org.jp/ mva2017/

IAPR MVA2017

IAPR INTERNATIONAL CONFERENCE ON MACHINE VISION APPLICATIONS

May 8-12, 2017

Toyoda Auditorium, Nagoya University, Nagoya, Japan

IAPR Distinguished Lectures

"Direct Methods for 3D Reconstruction & Visual SLAM"
Prof. Daniel Cremers (Technical University of Munich)

"Connecting the Dots: Embodied Visual Perception from First-person Cameras"
Prof. Jianbo Shi (University of Pennsylvania)

"Image Recognition for Assistance in Intelligent Vehicles"
Prof. Hiroshi Murase (Nagoya University)

Tutorial Courses

"Large-Scale Datasets and Scene Understanding"
Mohamed Omran (Max Planck Institute for Informatics)

"Machine Vision for Problems with Robot Manipulation"
Yukiyasu Domae (Mitsubishi Electric Corporation)

Sponsors: MVA Organization, IAPR, and Graduate School of Informatics, Nagoya University

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IMPORTANT NOTICE

For all participants

Awards : Winners of the MVA2017 Best Paper Award and the MVA2017 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 the conference site except for inside the main hall. 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 presenters in oral sessions

- All oral presentations will be given in a single track at the Toyoda Auditorium of Nagoya University.
- 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) connector. 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.
- An oral presenter **must also make a poster presentation** at the poster session on the same day, while the poster should be displayed at the poster session area throughout the main conference days (May 8, 9, and 10). 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 Symposion of the Toyoda Auditorium of Nagoya University. Presenters must present at their poster during the session.
- The maximum size of a poster panel is a B0 portrait: **103 cm width × 146 cm height**. Texts and figures should be large enough to be read clearly at a distance of approximately 2 meters. Poster numbers will be attached on the panels. Adhesive tapes and scissors are provided for attaching your poster to the panel.
- Posters should be displayed throughout the main conference days (May 8, 9, and 10). Please do not forget to remove your poster before the closing session on May 10.
- A poster presenter must have a **snapshot presentation** for 30 seconds per paper before the poster session. Prepare a one-page slide in Microsoft Powerpoint format with 4:3 aspect ratio. Embed all fonts and movies. Each slide will be switched automatically to the next one when the time passes. The poster chair will notify how to collect slides, and please wait for his instruction.
- The Best Poster Award is chosen by all participants' votes and awarded at the closing session. Please attend the closing session.

For session chairs

- Please make sure to arrive at the Toyoda Auditorium of Nagoya University 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.

Program at a Glance

	May 8	Main Conference May 9	May 10		Tutorials May 11	Tech. Exhib. May 12
08:30	Registration	Registration				
09:00			Registration	09:00		
09:20	Opening					
09:30	**Session 1** Inspection	**Session 6** Recognition /Classification	**Session 11** Tracking/ITS (–10:45)	09:30		
10:00				10:00	**Tutorial 1** Large-Scale Datasets and Scene Under-standing	
10:30	Break	Break				
10:45			Break	10:45		
10:50	**Session 2** 3D	**Session 7** Gaze/FPV	(11:05–) **Session 12** Face	11:05		
11:50	Lunch break	Lunch break **Young Researchers Meeting**	Lunch break	11:50 12:00	Lunch break	**Technical Exhi-bition**
13:20	**Session 3** Lecture by Prof. Daniel Cremers	**Session 8** Lecture by Prof. Jianbo Shi	**Session 13** Lecture by Prof. Hiroshi Murase	13:20		
14:00				14:00		
14:20	Poster 1 snapshot	Poster 2 snapshot	**Session 14** MVA/CVIM Spe-cial Session	14:20	**Tutorial 2** Machine Vision for Problems with Robot Ma-nipulation	
14:40	**Session 4** Poster 1	**Session 9** Poster 2 & **Demos**				
15:50			Break	15:50		
16:10	Break	Break	Poster 3 snapshot	16:10		
16:30	**Session 5** Feature /Similarity	**Session 10** Image Processing	**Session 15** Poster 3 & **Demos**	16:30		
17:30		(Bus transporta-tion)		17:30		
18:00			Closing	18:00		
18:30			Farewell party	18:30		
19:00		Banquet (–21:00)		19:00		

MAIN CONFERENCE SCHEDULE

Monday, May 8, 2017

Registration (8:30 - 9:20)

Opening Session (9:20 - 9:30)

Session 01: Inspection (9:30 - 10:30)

01-01: Real-Time Image Improvement System for Visual Testing of Nuclear Reactors
Naoki Hosoya, Atsushi Miyamoto, Junichirou Naganuma (Japan)

01-02: Damage Detection from Aerial Images via Convolutional Neural Networks
Aito Fujita, Ken Sakurada, Tomoyuki Imaizumi, Riho Ito, Shuhei Hikosaka, Ryosuke Nakamura (Japan)

01-03: In-Line Recognition of Agglomerated Pharmaceutical Pellets with Density-Based Clustering and Convolutional Neural Network
Andraž Mehle, Boštjan Likar, Dejan Tomaževič (Slovenia)

01-04: A Fast Sparse Reconstruction Approach for High Resolution Image-Based Object Surface Anomaly Detection
Woon Huei Chai, Shen-Shyang Ho, Chi-Keong Goh, Liang-Tien Chia, Hiok Chai Quek (Singapore)

Break (10:30 - 10:50)

Session 02: 3D (10:50 - 11:50)

02-01: Plane Labeling Trinocular Stereo Matching with Baseline Recovery
Luis Horna, Robert Fisher (United Kingdom)

02-02: Estimating Extrinsic Parameters Between a Stereo Rig and a Multi-Layer Lidar Using Plane Matching and Circle Feature Extraction
Trevor Gee, Jason James, Wannes Van Der Mark, Alfonso Gastelum Strozzi, Patrice Delmas, Georgy Gimel'farb (New Zealand)

02-03: Selecting Image Pairs for SfM by Introducing Jaccard Similarity
Takaharu Kato, Ikuko Shimizu, Tomas Pajdla (Japan)

02-04: Incremental Structural Modeling on Sparse Visual SLAM
Rafael Roberto, Hideaki Uchiyama, João Lima, Hajime Nagahara, Rin-ichiro Taniguchi, Veronica Teichrieb (Brazil)

Lunch break (11:50 - 13:20)

Session 03: IAPR Distinguished Lecture (13:20 - 14:20)

Direct Methods for 3D Reconstruction & Visual SLAM
Prof. Daniel Cremers (Departments of Informatics and Mathematics, Technical University of Munich, Germany)

Poster snapshot (14:20 - 14:40)

Session 04: Poster 1 (14:40 - 16:10)

04-01: Histogram of Oriented Gradients Based Presentation Attack Detection in Dorsal Hand-Vein Biometric System
Shruti Bhilare, Vivek Kanhangad, Narendra Chaudhari (India)

04-02: Compressive Color Sensing Using Random Complementary Color Filter Array
Satoshi Satou, Nobuhiko Wakai, Kunio Nobori, Takeo Azuma, Takamichi Miyata, Makoto Nakashizuka (Japan)

04-03: The Autonomous Hidden Camera Crew
Timothy Callemein, Wiebe Van Ranst, Toon Goedemé (Belgium)

04-04: Supervised Multi-Modal Dictionary Learning for Clothing Representation
Qilu Zhao, Jiayan Wang, Zongmin Li (China)

04-05: Asymmetric Locality Preserving Projection and Its Application to K-Nearest Neighbor Method
Yoshio Iwai, Masashi Nishiyama, Hiroki Yoshimura (Japan)

04-06: Evaluation of Features for SVM-Based Classification of Geometric Primitives in Point Clouds
Pascal Laube, Georg Umlauf, Matthias O. Franz (Germany)

04-07: Design and Analysis of a Novel Omnidirectional Stereovision System
Lei Luo, Zhiyu Xiang (China)

04-08: A Framework for an Accurate Point Cloud Based Registration of Full 3D Human Body Scans
Vladislav Golyanik, Reis Gerd, Bertram Taetz, Didier Stricker (Germany)

04-09: A Visual-SLAM for First Person Vision and Mobile Robots
Takahiro Terashima, Osamu Hasegawa (Japan)

04-10: Enhancing Discriminability of Randomized Time Warping for Motion Recognition
Lincon Sales De Souza, Bernardo Gatto, Kazuhiro Fukui (Japan)

04-11: Activity Recognition for Indoor Fall Detection Using Convolutional Neural Network
Kripesh Adhikari, Hamid Bouchachia, Hammadi Nait-Charif (United Kingdom)

04-12: Recognition of JSL Finger Spelling Using Convolutional Neural Networks
Hana Hosoe, Shinji Sako, Bogdan Kwolek (Japan)

04-13: Quadrant Segmentation and Ring-Like Searching Based FPGA Implementation of ORB Matching System for Full-HD Video
Tianmin Rao, Takeshi Ikenaga (Japan)

04-14: A Fast Algorithm for a Weighted Low Rank Approximation
Aritra Dutta, Xin Li (United States of America)

04-15: Dynamic Hand Gesture Recognition from Cyclical Hand Pattern
Huong-Giang Doan, Hai Vu, Thanh-Hai Tran (Vietnam)

04-16: Road User Detection with Convolutional Neural Networks: an Application to the Autonomous Shuttle WEpod
Floris Gaisser, Pieter P. Jonker (Netherlands)

04-17: Detection of Cars in Complex Urban Areas
Mohamed ElMikaty, Tania Stathaki (United Kingdom)

04-18: Unsupervised Place Discovery for Visual Place Classification
Xiaoxiao Fei, Kanji Tanaka, Kouya Inamoto, Guoqing Hao (Japan)

04-19: Sheet Metal Forming Limits as Classification Problem
Christian Jaremenko, Xiaolin Huang, Emanuela Affronti, Marion Merklein, Andreas Maier (Germany)

04-20: Human Ear Structure from Motion
Salah Eddine Kabbour, Pierre-Yves Richard (France)

04-21: Skeletonization and 3D Graph Approach for Thin Objects Recognition in Pick and Place Tasks
Pierre Willaume, Pierre Parrend, Etienne Gancel, Aline Deruyver (France)

04-22: 3D Convolutional Object Recognition Using Volumetric Representations of Depth Data
Ali Caglayan, Ahmet Burak Can (Turkey)

04-23: Bi-Direction ICP: Fast Registration Method of Point Clouds
Shiqiang Guan, Guolin Li, Xiang Xie, Zhihua Wang (China)

04-24: Model Based Visual Inspection of Pharmaceutical Tablets with Photometric Stereo
Gregor Podrekar, Dejan Tomaževič, Boštjan Likar, Peter Usenik (Slovenia)

04-25: Domain Adaptation of Articulated Pose Estimation via Synthetic Pose Prior
Kazuhiko Murasaki, Haruka Yonemoto, Kyoko Sudo, Tetsuya Kinebuchi (Japan)

04-26: Unsupervised Image Segmentation Using Defocus Map and Superpixel Grouping
Chun-Kuei Lo, Long-Wen Chang (Taiwan)

04-27: A PTZ Camera Based People-Occupancy Estimation System (PCBPOES)
Arun Kumar Chandran, Aravind Subramanian, Wai Choong Wong, Junjing Yang, Karn Ashokkumar Chaturvedi (Singapore)

04-28: Development of Online Machine Vision System Using Support Vector Regression (SVR) Algorithm for Grade Prediction of Iron Ores
Ashok Kumar Patel, Snehamoy Chatterjee, Amit Kumar Gorai (India)

04-29: Single Image Super Resolution Based on Content-Aware Constraint and Intensity-Order Constraint
Takashi Shibata, Atsushi Sato (Japan)

04-30: Real-Time Recognition of Sign Language Gestures and Air-Writing Using Leap Motion
Pradeep Kumar, Rajkumar Saini, Santosh Kumar Behera, Debi Prosad Dogra, Partha Pratim Roy (India)

04-31: Field Tests on Flat Ground of an Intensity-Difference Based Monocular Visual Odometry Algorithm for Planetary Rovers
Geovanni Martinez (Costa Rica)

Break (16:10 - 16:30)

Session 05: Feature/Similarity (16:30 - 18:00)

05-01: Convolutional Bag of Words for Diabetic Retinopathy Detection from Eye Fundus Images
Pedro Costa, Aurélio Campilho (Portugal)

05-02: Mobile Hologram Verification with Deep Learning
Daniel Soukup, Reinhold Huber-Mörk (Austria)

05-03: Object Specific Deep Feature and Its Application to Face Detection
Xianxu Hou, Jiasong Zhu, Ke Sun, Linlin Shen, Guoping Qiu (China)

05-04: Crowd Pedestrian Detection Using Expectation Maximization with Weighted Local Features
Shih-Shinh Huang, Chun-Yuan Chen (Taiwan)

05-05: Fast Search Based on Generalized Similarity Measure
Yuzuko Utsumi, Tomoya Mizuno, Masakazu Iwamura, Koichi Kise (Japan)

05-06: Deep Visual Words: Improved Fisher Vector for Image Classification
Ali Diba, Ali Mohammad Pazandeh, Luc Van Gool (Belgium)

Tuesday, May 9, 2017

Registration (8:30 - 9:00)

Session 06: Recognition/Classification (9:00 - 10:30)

06-01: Computational Single-Cell Classification Using Deep Learning on Bright-Field and Phase Images
Nan Meng, Hayden K. H. So, Edmund Y. Lam (China)

06-02: Hierarchical Zero-Shot Classification with Convolutional Neural Network Features and Semantic Attribute Learning
Jared Markowitz, Aurora C. Schmidt, Philippe M. Burlina, I-Jeng Wang (United States of America)

06-03: Simultaneous Estimation of Food Categories and Calories with Multi-Task CNN
Takumi Ege, Keiji Yanai (Japan)

06-04: Mass-Produced Parts Traceability System Based on Automated Scanning of "Fingerprint of Things"
Toru Takahashi, Yuta Kudo, Rui Ishiyama (Japan)

06-05: A New Deep Learning Architecture for Detection of Long Linear Infrastructure
Jayavardhana Gubbi, Ashley Varghese, Balamuralidhar P. (India)

06-06: Automatic Extraction and Recognition of Shoe Logos with a Wide Variety of Appearance
Kazunori Aoki, Wataru Ohyama, Tetsushi Wakabayashi (Japan)

Break (10:30 - 10:50)

Session 07: Gaze/FPV (10:50 - 11:50)

07-01: Attention to Describe Products with Attributes
Shuohao Li, Kota Yamaguchi, Takayuki Okatani (China)

07-02: A New Reconstruction Method in Gaze Estimation with Natural Head Movement
Yi Liu, Bu-Sung Lee, Martin McKeown (Singapore)

07-03: Hotspots Detection for Machine Operation in Egocentric Vision
Longfei Chen, Kazuaki Kondo, Yuichi Nakamura, Dima Damen, Walterio W. Mayol-Cuevas (Japan)

07-04: Point of Gaze Estimation Using Corneal Surface Reflection and Omnidirectional Camera Image
Taishi Ogawa, Atsushi Nakazawa, Toyoaki Nishida (Japan)

Lunch break (11:50 - 13:20)

Young Researchers' Meeting (11:50 - 13:20)

Session 08: IAPR Distinguished Lecture (13:20 - 14:20)

Connecting the Dots: Embodied Visual Perception from First-person Cameras
Prof. Jianbo Shi (School of Engineering and Applied Science, University of Pennsylvania, USA)

Poster snapshot (14:20 - 14:40)

Session 09: Poster 2 (14:40 - 16:10)

09-01: Two-Stage Model Fitting Approach for Human Body Shape Estimation from a Single Depth Image
Mei Oyama, Naoshi Kaneko, Masaki Hayashi, Kazuhiko Sumi, Takeshi Yoshida (Japan)

09-02: An Incremental Face Recognition System Based on Deep Learning
Lufan Li, Zhang Jun, Jiawei Fei, Shuohao Li (China)

09-03: Continuous Action Recognition with Weakly Labelling Videos
Jun Lei, Guohui Li, Jun Zhang, Shuohao Li, Fenglei Wang (China)

09-04: Scene Text Extraction with Local Symmetry Transform
Qi Chen, Yonghong Song, Yuanlin Zhang (China)

09-05: Event Based Surveillance Video Synopsis Using Trajectory Kinematics Descriptors
Wei-Cheng Wang, Pau-Choo Chung, Chun-Rong Huang, Wei-Yun Huang (Taiwan)

09-06: Can Fully Convolutional Networks Perform Well for General Image Restoration Problems?
Subhajit Chaudhury, Hiya Roy (Japan)

09-07: High Accuracy Local Stereo Matching Using DoG Scale Map
Masamichi Kitagawa, Ikuko Shimizu, Radim Sara (Japan)

09-08: Initial Response Time Measurement in Eye Movement for Dementia Screening Test
Tamotsu Endo, Norimichi Ukita, Hiroki Tanaka, Norihiro Hagita, Satoshi Nakamura, Hiroyoshi Adachi, Manabu Ikeda, Hiroaki Kazui, Takashi Kudo (Japan)

09-09: Improving the Performance of Non-Rigid 3D Shape Recovery by Points Classification
Junjie Hu, Terumasa Aoki (Japan)

09-10: Retinal Vessel Enhancement via Sparse Coding and Dictionary Learning
Bangzhong Gu, Bin Chen, Limin Luo (China)

09-11: A Raspberry Pi 2-Based Stereo Camera Depth Meter
James Cooper, Mihailo Azhar, Trevor Gee, Wannes Van Der Mark, Patrice Delmas, Georgy Gimel'farb (New Zealand)

09-12: Detection of View-Disturbing Noise by Using Time-Axial Clustering in Spatio-Temporal Image
Taichi Arimasa, Hiromi Yoshida, Youji Iiguni (Japan)

09-13: Automatic Pencil Sketch Generation by Using Canny Edges
Ryota Okawa, Hiromi Yoshida, Youji Iiguni (Japan)

09-14: FPGA Implementation of High Frame Rate and Ultra-Low Delay Vision System with Local and Global Parallel Based Matching
Tingting Hu, Takeshi Ikenaga (Japan)

09-15: Comparison of the Deep-Learning-Based Automated Segmentation Methods for the Head Sectioned Images of the Virtual Korean Human Project
Mohammad Eshghi, Holger Roth, Masahiro Oda, Min Suk Chung, Mori Kensaku (Japan)

09-16: Multi-Layer Age Regression for Face Age Estimation
Choon Ching Ng, Yi-Tesng Cheng, Gee-Sern Hsu, Moi Hoon Yap (Singapore)

09-17: Projective Structure from Facial Motion
Stella Graßhof, Hanno Ackermann, Felix Kuhnke, Jörn Ostermann, Sami Sebastian Brandt (Germany)

09-18: Mixture Particle Filter with Block Jump Biomechanics Constraint for Volleyball Players Lower Body Parts Tracking
Fanglu Xie, Xina Cheng, Takeshi Ikenaga (Japan)

09-19: Detecting Humans in RGB-D Data with CNNs
Kaiyang Zhou, Adeline Paiement, Majid Mirmehdi (United Kingdom)

09-20: Deep Convolutional Neural Networks for Motion Instability Identification Using Kinect
Daniel Leightley, Subhas C. Mukhopadhyay, Hemant Ghayvat, Moi Hoon Yap (United Kingdom)

09-21: Fast Signature Spotting in Continuous Air Writing
Santosh Kumar Behera, Pradeep Kumar, Debi Prosad Dogra, Partha Pratim Roy (India)

09-22: Human Bodypart Classification Using Geodesic Descriptors and Random Forests
Sebastian Handrich, Ayoub Al-Hamadi, Erik Lilienblum, Zuofeng Liu (Germany)

09-23: Low Cost Calibration of Stereo Line Scan Camera Systems
Erik Lilienblum, Sebastian Handrich, Ayoub Al-Hamadi (Germany)

09-24: Two Features Combination with Gated Recurrent Unit for Visual Speech Recognition
Masaya Iwasaki, Michiko Kubokawa, Takeshi Saitoh (Japan)

09-25: Transfer Learning of a Deep Convolutional Neural Network for Localizing Handwritten Slab Identification Numbers
Sang Jun Lee, Gyogwon Koo, Hyeyeon Choi, Sang Woo Kim (Korea, South)

09-26: Multi-Resolution ICP for the Efficient Registration of Point Clouds Based on Octrees
Michiel Vlaminck, Hiep Luong, Wilfried Philips (Belgium)

09-27: Weak Rocks Disintegration Patterns Recognition through Image Analysis
Orlando Rincón, Manuel Ocampo (Colombia)

09-28: Fast Low-Level Multi-Scale Feature Extraction for Hexagonal Images
S. A. Coleman, B. W. Scotney, B. Gardiner (United Kingdom)

09-29: Multiscale Two-View Stereo Using Convolutional Neural Networks for Unrectified Images
Pramod Yadati, Anoop Namboodiri (India)

09-30: Texture Super-Resolution for 3D Reconstruction
Calum Burns, Aurélien Plyer, Frédéric Champagnat (France)

09-31: Detection of Self Intersection in Synthetic Hand Pose Generators
Shome Subhra Das (India)

Break (16:10 - 16:30)

Session 10: Image Processing (16:30 - 17:30)

10-01: Parsing Floor Plan Images
Samuel Dodge, Jiu Xu, Björn Stenger (Japan)

10-02: Pixel-Wise Binarization of Musical Documents with Convolutional Neural Networks
Jorge Calvo-Zaragoza, Gabriel Vigliensoni, Ichiro Fujinaga (Spain)

10-03: Limited Memory Switched Broyden Method for Faster Image Deblurring
Robby Haelterman, Ichraf Lahouli, Michal Shimoni, Joris Degroote (Belgium)

10-04: Self-Learning Structure for Text Localization
Supakorn Intaratat, Karn Patanukhom (Thailand)

move to banquet site by bus (17:30 - 19:00)

Banquet (19:00 - 21:00)

Wednesday, May 10, 2017

Registration (9:00 - 9:30)

Session 11: Tracking/ITS (9:30 - 10:45)

11-01: Active Discriminative Tracking Using Collective Memory
Kourosh Meshgi, Shigeyuki Oba, Shin Ishii (Japan)

11-02: Deep Residual Coalesced Convolutional Network for Efficient Semantic Road Segmentation
Igi Ardiyanto, Teguh Bharata Adji (Indonesia)

11-03: A Neural Network Approach to Visual Tracking
Zhe Zhang, Kin Hong Wong, Zhiliang Zeng, Lei Zhu (China)

11-04: A Surround View Image Generation Method with Low Distortion for Vehicle Camera Systems Using a Composite Projection
Kunio Nobori, Norimichi Ukita, Norihiro Hagita (Japan)

11-05: Ball-Like Observation Model and Multi-Peak Distribution Estimation Based Particle Filter for 3D Ping-Pong Ball Tracking
Ziwei Deng, Xina Cheng, Takeshi Ikenaga (Japan)

Break (10:45 - 11:05)

Session 12: Face (10:05 - 11:50)

12-01: Exemplar-Based Human Facial Features Cloning
Damon Shing-Min Liu, Feng-Yi Lin (Taiwan)

12-02: Face Liveness Detection with Feature Discrimination Between Sharpness and Blurriness
Chun Hsiao Yeh, Herng-Hua Chang (Taiwan)

12-03: Analysis of In- and Out-group Differences between Western and East-Asian Facial Expression Recognition
Gibran Benitez-Garcia, Tomoaki Nakamura, Masahide Kaneko (Japan)

Lunch break (11:50 - 13:20)

Session 13: IAPR Distinguished Lecture
(13:20 - 14:20)

Image Recognition for Driver Assistance in Intelligent Vehicles
Prof. Hiroshi Murase (Graduate School of Information Science Nagoya University, Japan)

Session 14: MVA/CVIM Special Session for Doctoral Theses (14:20 - 15:50)

14-01: Discrete Inference Approaches to Image Segmentation and Dense Correspondence
Taniai Tatsunori, Sato Yoichi (Japan)

14-02: Measuring Translucent Objects using Spatially and Temporally Modulated Light
Tanaka Kenichiro, Mukaigawa Yasuhiro, Kubo Hiroyuki, Funatomi Takuya, Matsushita Yasuyuki, Yagi Yasushi (Japan)

14-03: Human Action Recognition-Based Summarization of User-Generated Sports Video
Antonio Tejero de Pablos, Yuta Nakashima, Tomokazu Sato, Naokazu Yokoya (Japan)

Break (15:50 - 16:10)

Poster snapshot (16:10 - 16:30)

Session 15: Poster 3 (16:30 - 18:00)

15-01: Model-Based 3D Pose Estimation for Pick-and-Place Application
Shih-Cheng Liang, Huei-Yung Lin, Chin-Chen Chang (Taiwan)

15-02: Pedestrian Near-Miss Analysis on Vehicle-Mounted Driving Recorders
Teppei Suzuki, Yoshimitsu Aoki, Hirokatsu Kataoka (Japan)

15-03: Two-Stage Cross-Based Stereo Disparity Refinement
Zhonglin Xu, Sei-ichiro Kamata, Qieshi Zhang (Japan)

15-04: Multiple-Organ Segmentation by Graph Cuts with Supervoxel Nodes
Toshiya Takaoka, Yoshihiko Mochizuki, Hiroshi Ishikawa (Japan)

15-05: Phenotyping of Xylem Vessels for Drought Stress Analysis in Rice
Swati Bhugra, Anupama Anupama, Santanu Chaudhury, Brejesh Lall, Archana Chugh (India)

15-06: An MRF-Based Image Segmentation with Unsupervised Model Parameter Estimation
Yoshihiko Toya, Hiroyuki Kudo (Japan)

15-07: A Deep Network Model Based on Subspaces: A Novel Approach for Image Classification
Bernardo Bentes Gatto, Lincon Sales de Souza, Eulanda M. dos Santos (Brazil)

15-08: Banknote Portrait Detection Using Convolutional Neural Network
Ryutaro Kitagawa, Yoshihiko Mochizuki, Satoshi Iizuka, Edgar Simo-Serra, Hiroshi Matsuki, Naotake Natori, Hiroshi Ishikawa (Japan)

15-09: A New Algorithm for Fast and Accurate Moving Object Detection Based on Motion Segmentation by Clustering
Yuchi Zhang, Guolin Li, Xiang Xie, Zhihua Wang (China)

15-10: Unsupervised Video Object Segmentation by Supertrajectory Labeling
Masahiro Masuda, Yoshihiko Mochizuki, Hiroshi Ishikawa (Japan)

15-11: Dilated Convolutions for Image Classification and Object Localization
Yasunori Kudo, Yoshimitsu Aoki (Japan)

15-12: Pedestrian Positioning in Urban City with the Aid of Google Maps Street View
Haitao Wang, Yanlei Gu, Shunsuke Kamijo (Japan)

15-13: Robust Markers for Visual Navigation Using Reed-Solomon Codes
Jayavardhana Gubbi, Sandeep N. K., Pavan Kumar Reddy K., P. Balamuralidhar (India)

15-14: A Preliminary Study on Extracting Objects in Sketches
Bo Huang, Jiansheng Chen (China)

15-15: A Sampling Method for Processing Contours Drawn with an Uncertain Stroke Order and Number
Kazuya Ose, Kazunori Iwata, Nobuo Suematsu (Japan)

15-16: Estimation of Radial Distortion Using Local Spectra of Planar Textures
Benjamin Spitschan, Jörn Ostermann (Germany)

15-17: Low-Resolution Person Recognition Using Image Downsampling
Keiji Obara, Hiroki Yoshimura, Masashi Nishiyama, Yoshio Iwai (Japan)

15-18: Fast and Robust Selection of Highly-Correlated Features in Regression Problems
Andreas Maier, Dalia Rodríguez-Salas (Germany)

15-19: A Bias Correction Variational Level Set Image Segmentation Model Combining Structure Extraction
Xili Wang, Hu Li, Xiyuan Wang (China)

15-20: DFD2.0: Motion Robustness by Amplitude Domain Approach
Takashi Kawamura, Khang Nguyen, Shunsuke Yasugi, Mitsuyoshi Okamoto, Motonori Ogura, Shinsaku Hiura (Japan)

15-21: A Linear Method for Recovering the Depth of Ultra HD Cameras Using a Kinect V2 Sensor
Yuan Gao, Matthias Ziegler, Frederik Zilly, Sandro Esquivel, Reinhard Koch (Germany)

15-22: Stress Classification Using a Neuro-Fuzzy Classifier
Justine Seow Jia Wen, Ali Afzalian Mand (Malaysia)

15-23: Fast, Versatile, and Non-Destructive Biscuit Inspection System Using Spectral Imaging
Jens Michael Carstensen (Denmark)

15-24: Fine-Grained Event Timing Detection Method Using Quasi-High Frame Generation for Single Camera Image Sequence
Ayumi Matsumoto, Dan Mikami, Hideaki Kimata (Japan)

15-25: Saliency/non-Saliency Segregation in Video Sequences Using Perception-Based Local Ternary Pattern Features
Kwok-Leung Chan (China)

15-26: Refining Faster-RCNN for Accurate Object Detection
Myung-Cheol Roh, Ju-young Lee (Korea, South)

15-27: Visual-to-Speech Conversion Based on Maximum Likelihood Estimation
Rina Ra, Ryo Aihara, Tetsuya Takiguchi, Yasuo Ariki (Japan)

15-28: A Study of Virtual Visual Servoing Sensitivity in the Context of Image/GIS Registration for Urban Environments
Hengyang Wei, Muriel Pressigout, Luce Morin, Myriam Servières, Guillaume Moreau (France)

15-29: Skin Beautification Detection Using Sparse Coding
Tianyang Sun, Xinyu Hui, Zihao Wang, Shengping Zhang (China)

15-30: Robust Registration of Serial Cell Microscopic Images Using 3D Hilbert Scan Search
Yongwen Lai, Sei-ichiro Kamata, Zhizhong Fu (Japan)

15-31: Wood Cellular Structure Evaluation Using Image Analysis Methods
Jukka Antikainen (Finland)

15-32: Could You Guess an Interesting Movie from the Posters?: An Evaluation of Vision-Based Features on Movie Poster Database
Yuta Matsuzaki, Kazushige Okayasu, Takaaki Imanari, Naomichi Kobayashi, Yoshihiro Kanehara, Ryousuke Takasawa, Akio Nakamura, Hirokatsu Kataoka (Japan)

Closing (18:00 - 18:30)

Farewell Party (18:30 - 19:30)

Thursday, May 11, 2017

Tutorial Courses (10:00 - 16:00)

Tutorial 1 (10:00 - 12:00)

Large-Scale Datasets and Scene Understanding

Mohamed Omran (Max Planck Institute for Informatics)

Lunch break (12:00 - 14:00)

Tutorial 2 (14:00 - 16:00)

Machine Vision for Problems with Robot Manipulation

Yukiyasu Domae (Mitsubishi Electric Corporation Advanced Technology R&D Center)

Friday, May 12, 2017

Technical Exhibition (10:00 – 16:30)

IAPR Distinguished Lectures

"Direct Methods for 3D Reconstruction & Visual SLAM"
Prof. Daniel Cremers

Departments of Informatics and Mathematics, Technical University of Munich, Germany

Date: May 8, 2017
Time: 13:20-14:20
Place: Toyoda Auditorium

Synopsis: The reconstruction of the 3D world from images is among the central challenges in computer vision. Starting in the 2000s, researchers have pioneered algorithms which can reconstruct camera motion and sparse feature-points in real-time. In my talk, I will introduce spatially dense methods for camera tracking and 3D reconstruction which do not require feature point estimation, which exploit all available input data and which recover dense or semi-dense geometry rather than sparse point clouds. Applications include 3D photography, 3D television, and autonomous vehicles.

"Connecting the Dots: Embodied Visual Perception from First-person Cameras"
Prof. Jianbo Shi

School of Engineering and Applied Science, University of Pennsylvania, USA

Date: May 9, 2017
Time: 13:20-14:20
Place: Toyoda Auditorium

Synopsis: A computer has a complete photographical memory. It creates massive but isolated sensory moments. Unlike such fragmented photographic memory, human memories are highly connected through episodes that allow us to relate past experiences and predict future actions. How to computationally model a human like episodic memory system that connects photographically accurate sensory moments? Our insight is that an active interaction is a key to link between episodes because sensory moments are fundamentally centered on an active person-self. Our experiences are created by and shared through our social and physical interactions, i.e., we connect episodes driven by similar actions and, in turn, recall these past connected episodes to take a future actions. Therefore, connecting the dotted moments to create an episodic memory requires understanding the purposeful interaction between human (person-self) and world.

Photographs are only half of our world experience: it records what are out there. What are in our head, our intention-attention-physiological states during the social and physical interactions, are missing from the memory recording. This needs creating an embodied memory link between our inner 'selves' with the external episode, and a first person camera is an ideal sensor to capture, model, and predict the embodied memory link because it encodes a complete visual audio sensation of the camera wearer's interaction with the world. We leverage purposeful actions measured by first person cameras to reveal the internal states of the camera wearer, and use the similar internal states to connect the wearer's episodic sensations of the world.

"Image Recognition for Driver Assistance in Intelligent Vehicles"
Prof. Hiroshi Murase

Graduate School of Informatics, Nagoya University, Japan

Date: May 10, 2017
Time: 13:20-14:20
Place: Toyoda Auditorium

Synopsis: Due to our aging society, driver assistance and automated driving have been intensely researched. Recognizing the surrounding environment utilizing image processing is a core technological element for driving intelligence. Specifically, technology must accurately detect pedestrians, obstacles such as other vehicles, condition of a driver, weather, etc. using cameras and various sensors. In this presentation, I introduce image recognition technology necessary for driver assistance.

Tutorial Courses

"Large-Scale Datasets and Scene Understanding"

Mohamed Omran

Max Planck Institute for Informatics

Date: May 11th
Time: 10:00 - 12:00
Place: Noyori Conference Hall

Synopsis: I will give an overview of large-scale datasets in the last years, and in particular talk about our own experience putting together the Cityscapes dataset and the challenges involved. During the 2nd part of the tutorial I will discuss recent methods for semantic pixel-level and instance-level labelling followed by some practical tips and tricks based on Cityscapes results.

"Machine Vision for Problems with Robot Manipulation"

Yukiyasu Domae

Mitsubishi Electric Corporation Advanced Technology R&D Center

Date: May 11, 2017
Time: 14:00 - 16:00
Place: Noyori Conference Hall

Synopsis: There are many manipulation problems in the field of factory and warehouse automation. We applied various machine vision techniques to the system in order to tackle those challenges. Last year, we competed in the Amazon Picking Challenge with the system we developed. In this tutorial, we will explain the machine vision system and algorithm.

Talk Outline

1. Trends on Factory Automation (FA)
2. Case study: Cell production robot systems
3. Machine vision algorithms for FA
4. Break
5. Trends on Warehouse Automation (WA)
6. Case study: Picking robot systems
7. Machine vision algorithm for WA
8. Other applications
9. Questions

Young Researchers' Meeting

Date: May 9, 2017
Time: Lunchtime

The previous event in MVA2015

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 decided to 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.

Registration

- Registration page for the young researchers' meeting will be available after MVA2017 registration is open.
- Participants must register to the MVA2017 conference, but are not required to be presenters.
- First 50 (tentative) applicants will be accepted.

- Registration is free of charge.

Preparation

Material

- Participants should prepare materials on their researches.
- Materials may be printed or electronic data (PPT, PDF, etc.)
- No display screen will be provided. Participants should bring their own PC or tablet if needed.

Name Tag

- The organizer will prepare name tags showing participants' name, affiliation, research topics, and extra information.
- Participants will be asked to submit the required information by filling a format by the organizer.

Contact

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

Demo Session

Date: May 9 and 10, 2017
Time: 14:40-16:10 (May 9), 16:30-18:00 (May 10)
Place: Toyoda Auditorium / Symposion

The following ten institutions will demonstrate their products and technologies:

- **"Image processing on mobile phone cameras"** exhibited by Huawei Technologies Japan K. K.,
- **"Applications of Computer Vision and Machine Learning at DWANGO"** exhibited by DWANGO Co., Ltd.,
- **"Computer Vision for Retail Analytics"** exhibited by ABEJA, Inc.,
- **"Real-time Computer Vision for Driver Assistive Systems"** exhibited by Cambridge Research Laboratory, Toshiba Research Europe Ltd.,
- **"Ibeo Scalable Multi Sensor Localization approach for Highly Automated Driving"** exhibited by Ibeo Automotive Systems GmbH,
- **"Real-time Multi-spectral Material Detection Camera System"** exhibited by Gifu University, ViewPLUS Inc.,
- **"Morpho Deep Learning System -Demonstration of Deep Learning for visual inspection-"** exhibited by Morpho, Inc.,
- **"Super Wide-Angle 3D Laser Range Sensor"** exhibited by Fujitsu Laboratories LTD.,
- **"Pedestrian tracking using multiple RGB-D Cameras"** exhibited by The National Institute of Advanced Industrial Science and Technology (AIST) and
- Book exhibited by Springer.

Banquet

Date: May 9, 2017
Time: 19:00-21:30
Place: Banquet room "Tenshu" at The Westin Nagoya Castle
Meeting Time: 17:30-18:00
Meeting Location: The parking lot in front of Toyoda Auditorium

The Banquet will be held on Tuesday, May 9, 2017 at the Westin Nagoya Castle Hotel, which is in front of the Nagoya Castle.
You will need a banquet ticket to attend.
We will provide shuttle bus service to the banquet venue from Nagoya University.
The pick up place will be in front of Toyoda Auditorium.
After the banquet, we will take you back to Nagoya University / major stations in Nagoya.

Technical Exhibition

Date: May 12, 2017
Time: 10:00 - 16:30
Meeting Time: 10:00
Meeting Location: TBA

The exhibition includes visiting labs at Nagoya University and tour of Toyota Plant / Toyota Kaikan Museum.

The capacity is limited. You can reserve your place from the registration website.

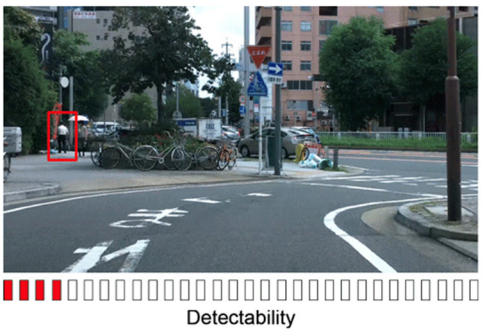
Schedule on May 12

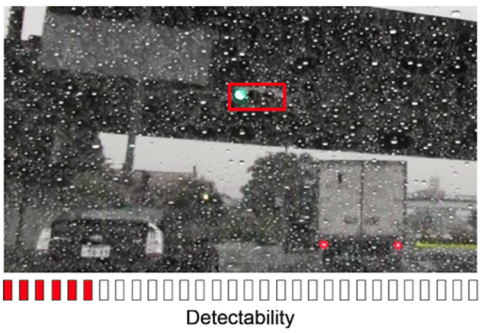
10:00AM–11:30AM	Four Nagoya University laboratories working on vision and ITS technologies.
11:30AM–12:30PM	Lunch break (lunch not included)
12:30PM–	To the Toyota Plant (bus included)
1:30PM–3:30PM	Tour of Toyota Plant and Toyota Kaikan Museum
3:30PM–	Back from the museum to the University or Nagoya Station (bus included)
4:30PM	Approx. arrival

Lab Tour 1: Murase / Ide / Deguchi Lab. Details

Estimation of human performance detecting objects

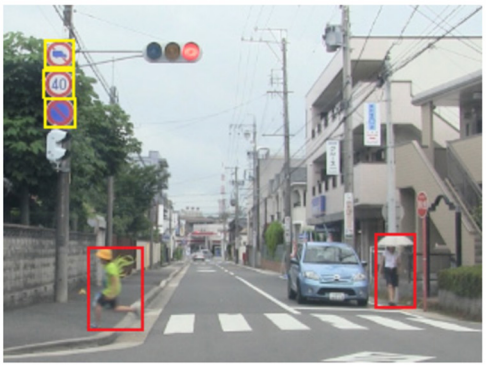
When driving a vehicle, a driver recognizes various objects, such as traffic signs, traffic signals and pedestrians. We are developing a method for estimating the human performance detecting objects (detectability or visibility) based on image processing and pattern recognition techniques. By using the visibility estimation technique, we are trying to develop next advanced driver assistance systems (ADAS) considering driver's condition.

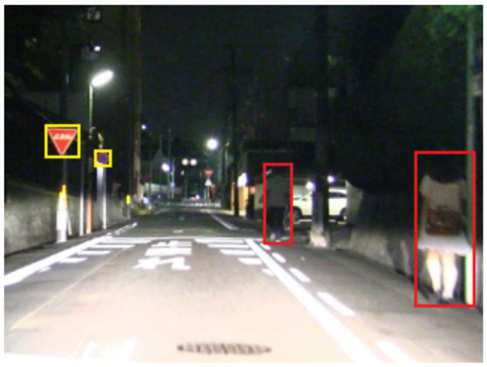




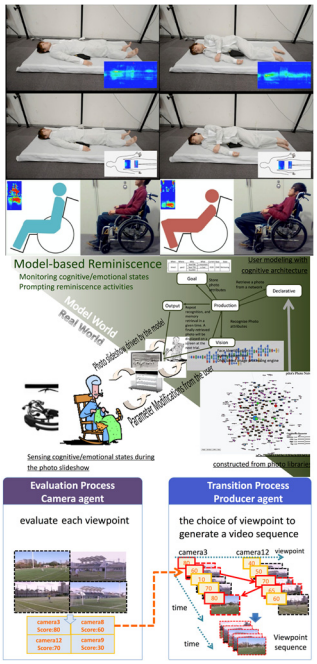
Recognition of various objects in images captured by car-mounted camera

We are developing technologies to support drivers using car-mounted camera by recognizing the weather condition, traffic signs, pedestrians, etc. To improve the performance, we proposed an environment adaptive detector. In addition, various types of generative learning methods have been proposed to reduce the cost for constructing the detector.





Lab Tour 2: Mase Lab.



Computer Mediated Communication Laboratory (Mase and Enokibori Lab) focuses on human computer interaction in general. Example research topics are the followings:

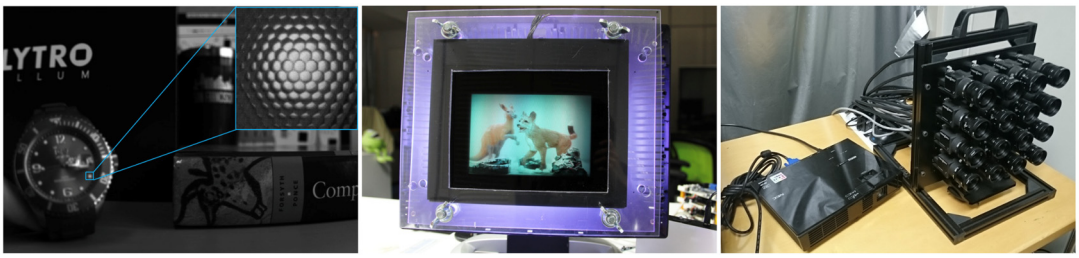
- Multi-modal interaction: multi-view video, eye tracking, human body movement, etc.
- Cognitive analysis and training for brain healthcare: photo based memory network model and its analysis, EEG based emotion estimation, cognitive training based on physical and cognitive parallel tasks, etc.
- Ubiquitous and wearable computing: lifelog, e-textile sensor based clothes, smart wheel chair, etc.
- Context awareness: image processing, depth sensor, use of smart-phones, etc.

In this tour, the following topics are addressed on:

- Automatic video sequence generation for multi-view videos: It is a recommendation system to improve the plausibility of video viewing. Multi-view sometime cannot be controlled properly by users. Therefore, this system recommends the best sequence for users based on other users' watch-logs.
- Memory network model analysis based on memorial photos: A prototype system design is investigated with an illustration of memory network model. It generates semantic networks among memorial photos using shooting attributes of the photos. We gather and analyze experiences from over 20 participants to evaluate such network suitability.
- E-Textile based health care: e-textile based pressure sensor and its applications, such as cloth and smart wheel chairs, are developed to prevent pressure ulcer. Summary of the experiment in nursing home and so on are exhibited.

Lab Tour 3: Fujii / Takahashi Lab. [Details]

Research



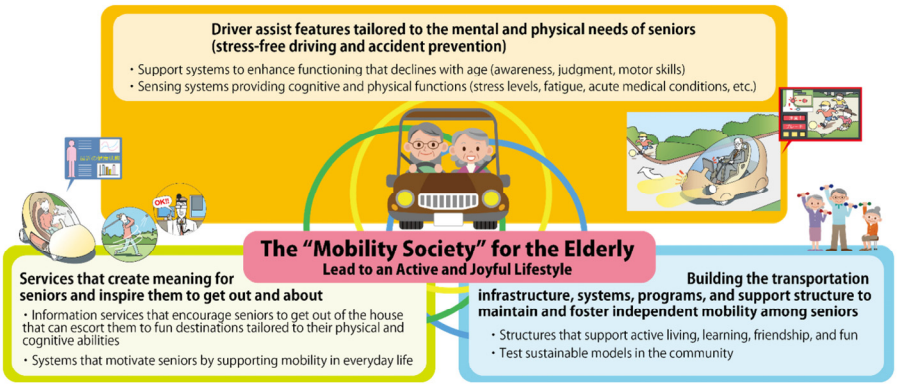
Light Field Camera | Light Field Display | Camera Array System

Lab Tour 4: Ninomiya Lab. [Details]

Nagoya COI

Innovation Hub for a "Mobility Society"

- Leads to an Active and Joyful Life for Elderly -



In order to realize a sustainable society for the elderly, it is essential for the elderly to have a mobility to interact in a joyful lifestyle without the age, regional and individual differences. One of the implementation approaches is to create active mobility which the elderly can move on their own will. The active mobility promotes their activities and social participation.
Under our program, we aim to realize "The Mobility Society for the Elderly which leads to an Active and Joyful Lifestyle".

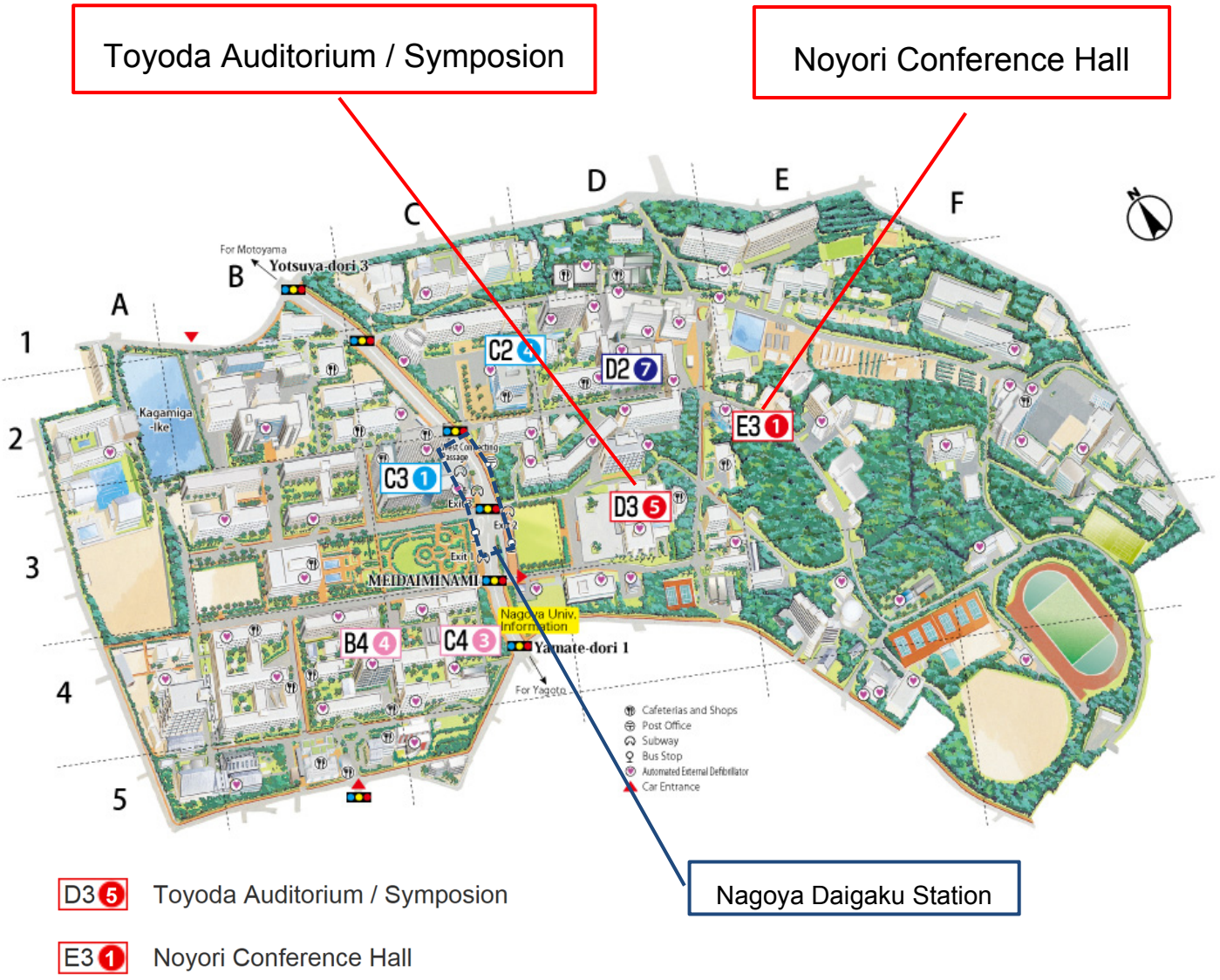
Our goal is to implement:

- Vehicle which the elderly feel safe and comfortable to drive.
- Information service to promote the elderly to drive and take part in the events.
- Social structure to encourage the elderly to participate in activities and events.

CONFERENCE VENUE

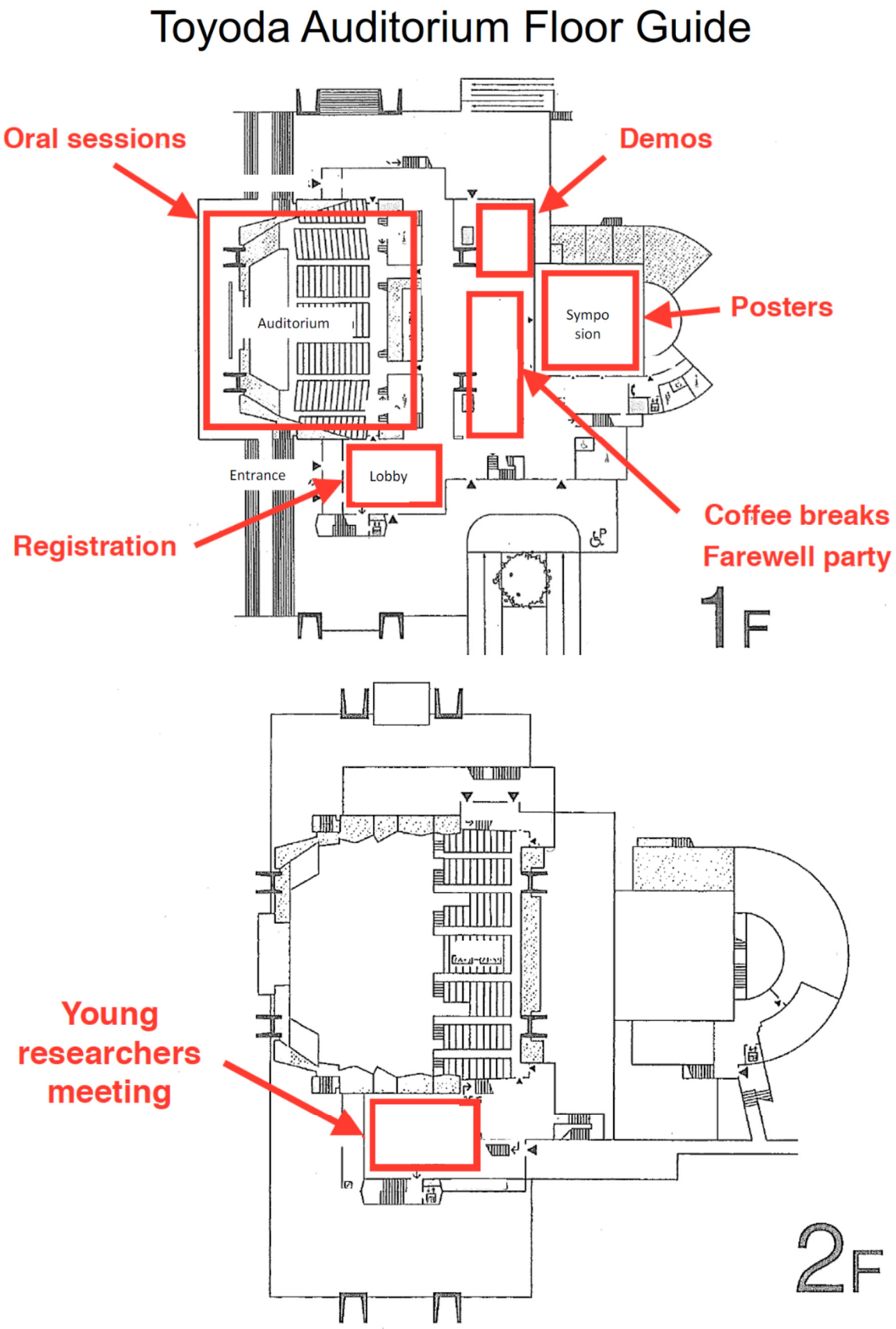
The conference will be held at Toyoda Auditorium/Symposion in Higashiyama Campus of Nagoya University. Tutorial courses will be held at Noyori Conference Hall in the same campus.

Higashiyama Campus



http://en.nagoya-u.ac.jp/map/higashiyama/international_conference_venues.html

Floor Map


Toyoda Auditorium Floor Guide
Oral sessions
Demos
Auditorium
Sympo
sion
Posters
Entrance
Lobby
Registration
Coffee breaks
Farewell party
1F
Young
researchers
meeting
2F