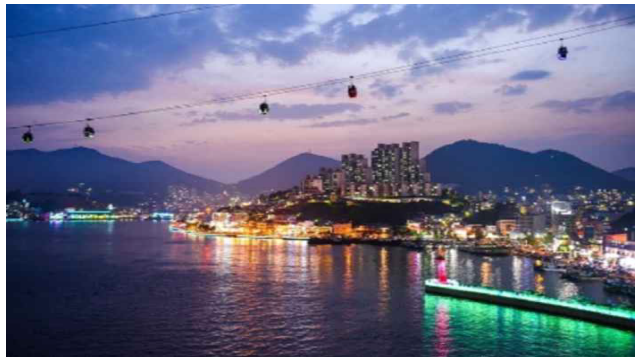
IW-FCV 2023



The 29th International Workshop on Frontiers of Computer Vision
(IW-FCV 2023)

February 20-22, 2023, Yeosu, Utop Marina Hotel, South Korea

https://iwfcv2023.github.io/

Program Guidebook

| Organized by |

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| Co-organized by |

Culture Technology Institute, Chonnam National University

Korean Institute Smart Media

CNU National Program of Excellence in Software

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Korean Computer Vision Society

Contents

Welcome message from General Chairs

We would like to warmly welcome you all to IW-FCV 2023(International Workshop on Frontiers of Computer Vision) to be held in Yeosu, Korea from February 20th to 22nd, 2023. It is an honor to serve as the General Chair of this esteemed event and we are thrilled to see so many participants from around the world come together to exchange knowledge and share their research results.

As many of you may know, this international workshop has a rich history, initially started as a platform for research exchange between Japanese and Korean computer vision researchers. It has been held every year for 29 years and despite the challenges posed by the Covid-19 pandemic, we are proud to have maintained this tradition for the past three years through the efforts of many dedicated researchers. This year, we are particularly thrilled to be able to hold the event face-to-face in the beautiful city of Yeosu, Korea.

Computer Vision is a field that has recently received a great deal of attention in the AI field. It is a source of technology for the development of high value-added products and systems such as autonomous vehicle, intelligent surveillance systems, robots, and high-quality movies. Researchers in this field aim to mimic human visual functions with computers and through their efforts, high-level problems that were previously considered difficult are now being solved using deep learning techniques. The significance of computer vision research cannot be overstated, and we hope that young researchers from around the world will continue to participate in this workshop and contribute to its growth. In addition to the intellectual stimulation that this workshop provides, we also hope that you will take the time to enjoy the beauty of Yeosu. This port city is located at the southern tip of Korea and is famous for its clean water and delicious southern Korean cuisine made with. Yeosu has a rich history of overseas trade and is well-known for its prosperity. The coast of Yeosu is also a stunning sight with its small islands, including Dongbaek-island and Hyangil-temple.

Lastly, I would like to express my sincere gratitude to the researchers who submitted papers for this workshop, the organizing committee members, and the members of the Steering Committee who have worked tirelessly to make this event possible. Your contributions and dedication are greatly appreciated.

Thank you for your participation and I hope you have a wonderful and productive time at IW-FCV2023 in Yeosu, Korea.

General Chairs of IW-FCV 2023

Prof. Chilwoo LEE

Prof. Kazuhiko SUMI

Call for Paper

The 29th International Workshop on Frontiers of Computer Vision (IW-FCV 2023)

February 20-22, 2023, Yeosu, South Korea

(Utop Marina Hotel, Yeosu)

https://iwfcv2023.github.io/




Overview

The International Workshop on Frontiers of Computer Vision (IW-FCV) is the exciting chance and place for inter-communication and discussion through many presentations of the advanced researches from the worldwide research communities of computer vision theory, applications, deep learning and big data. The 29th International Workshop on Frontiers of Computer Vision (IW-FCV 2023) will be held on February 20-22, 2023, in Yeosu, South Korea. Yeosu is well known as a city with Hallyeohaesang National Park 'Odongdo', the Ocean Expo in 2012, camellia flowers, 365 beautiful attached islands, and full of culture, art and history, and welcomes you with warm, friendly hospitality and delicious sea food. In addition, we have prepared various sessions and events so that everyone who attends can enjoy it with academic exchanges. All accepted papers will be published in the workshop proceedings. Additionally, expanded and revised versions of a short list of the papers presented at the workshop will be selected for publication in the post-workshop proceedings of IW-FCV2023 as a Springer Communications in Computer and Information Science (CCIS) series after the workshop.

Topics

Topics of interest include all aspects of image processing, computer vision, machine vision, the fundamentals and applications including, but not limited to, the following areas:

- **Fundamentals and Theory:** Image filtering, Enhancement, Restoration, Transformation, Stochastic vision, Stereo vision, Scale space analysis, Hough transform, Morphological processing, Image sequence analysis, Image processing architecture, Representation, Color and illumination analysis, Vision geometry, Coding, Error analysis
- **Computer Vision and Image Analysis:** Shape-from-X, Active vision, Image/Scene segmentation, Object detection and tracking, Visual language and description, Deep Learning-based Vision, Machine & semantic learning for computer vision, Integration of deep learning and conventional method, Performance evaluation and dataset
- **Applications:** Image/Video search and retrieval, Video surveillance, AR/VR/MR/HR, Smart factory, Smart healthcare, Intelligent transportation system, Bio-medical image analysis, Smart agriculture, Smart home, Logistics and distribution, Autonomous land vehicle, Intelligent robot
- **Recognition and Learning:** 2D object recognition, 3D computer vision, 3D object recognition, Action and behavior recognition, Adversarial learning, face, gesture, body pose estimation, Efficient training and inference methods for networks, Explainable AI, Low-level and physics-based vision, Representation learning, Scene analysis and understanding, Transfer, low-shot, semi- and un-supervised learning, Reinforcement learning

Important dates

※ **Important Dates**

- Submission of Paper: ~~January 14, 2023~~ January 24, 2023(final)
- Decision Notification: January 29, 2023
- Submission of Camera-ready Paper: February 4, 2023
- Registration Due: February 12, 2023 (Early),
  February 13 - 22, 2023 (Regular/on-site)
- Conference Date: February 20 - 22, 2023

Publishing and Award

1. Workshop Paper Publishing

All accepted workshop papers will be published in the workshop proceedings of IW-FCV 2023. When submitting a paper (1-8 pages **for short papers,** or 12-15+ pages **for full papers**), authors should refer to format form, which can be downloaded from the IW-FCV 2023 website.

2. Post Workshop paper Publishing

Of the papers presented at the IW-FCV 2023 workshop, some selected papers will be also published, after further revisions, in the Springer Communications in Computer and Information Science (CCIS) series after the workshop. To be considered and selected for Springer CCIS book series publication, authors should submit **a full paper (at least 12 pages in length as springer format)** regardless of whether it was originally submitted as a workshop or poster paper.

3. Paper Awards

The Paper Awards will be distributed during the workshop closing session. Authors should submit as **a full paper** to be eligible for the award.

Organizing Committee

General Chairs: Chilwoo Lee, Chonnam National University, South Korea, **Kazuhiko Sumi**, Aoyama Gakuin University, Japan
Program Chairs: Inseop Na, Chosun University, South Korea / **Go Irie**, Tokyo University of Science, Japan

Contact

For more information about workshop, please refer to https://iwfcv2023.github.io/.

If you have any questions about CFP, please email Prof. Chilwoo Lee (leecw@inu.ac.kr) or Prof. Inseop Na (ypencil@chosun.ac.kr).

A special discount is provided at the Utop Marina Hotel for conference participants. See more information at Homepape Venue menu

Organized by IW-FCV Committee

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Workshop Venue

Workshop Venue:

Utop Marina Hotel, Yeosu, South Korea.

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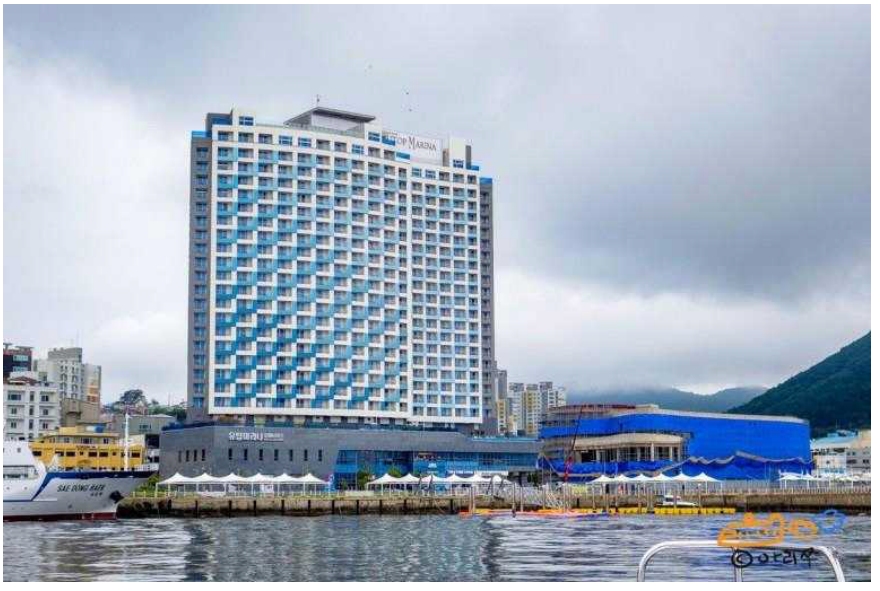
Tel: +82-61-690-8000
E-mail:utopmarina.yeosu@gmail.com



Keynote Speech-1

Title: Deep Attention Models for Object Recognition

Speaker: Dr. In So Kweon, KAIST, South Korea

Abstract

In recent years, the performance of Deep Learning based approaches for object recognition has improved dramatically and even surpassed human performance in some benchmarking datasets. Specifically, Deep attention models have been very effective to improve recognition performance. In this talk, we present two convolutional attention models inspired by human visual systems, in which the object is defined by the presence or absence of “Local Visual Properties” and by “object parts” with their “Contextual Relations”. We also present a simple and effective video mask transformer model that is widely applicable to multiple video segmentation tasks. TubeFormer-DeepLab directly predicts video tubes with task-specific labels (either pure semantic categories, or both semantic categories and instance identities), which not only significantly simplifies video segmentation models, but also advances state-of-the-art results on multiple video segmentation benchmarks.

Biography

Professor In So Kweon received the B.S. and the M.S. degrees in Mechanical Design and Production Engineering from Seoul National University, Korea, in 1981 and 1983, respectively, and the Ph.D. degree in Robotics from the Robotics Institute at Carnegie Mellon University in 1990. He worked for Toshiba R&D Center and joined KAIST in 1992. He is a KEPCO Chair professor of the School of Electrical Engineering and had been the director for the National Core Research Center – P3 DigiCar Center at KAIST (2010~2017). His research focuses on Computer Vision and Robotics. He has published 3 research books, and more than 500 papers in leading journals and conference proceedings, including 100+ in prestigious CVPR, ICCV, and ECCV. He is also active in professional service. Currently, he is the President of the Asia Federation of Computer Vision (AFCV). He served on the Editorial Board of the International Journal of Computer Vision for ten years since 2005. He has also organized 5 international conferences either as a general chair or a program chair, including IEEE-CVF ICCV 2019. He was awarded “2016 Faculty Research Excellence Award”, “2020 Grand Prize for Academic Excellence”, and “2021 Hyung-Gyu Im LINKGENESIS Best Teacher Award” by KAIST and conferred a Prime Minister Award by the Korean Government for his contribution to DRC-HUBO+ to win the DARPA Robotics Challenge in 2015. He also received several awards from international conferences, including "The Best Paper Award of the IEEE Transaction on CSVT 2014" and "The Best Student Paper Runnerup Award in the IEEE-CVPR 2009".

Keynote Speech-2

Title: Pre-training without Natural Images

Speaker: Dr. Hirokatsu Kataoka, AIST, Japan

Abstract

The talk introduces a novel concept called Formula-driven Supervised Learning (FDSL) for using convolutional neural networks and vision transformers pre-trained without real images for real image recognition. Instead of real images, the pre-training phase employs fractals/contours generated from mathematical formulas as image patterns and their category labels, allowing for an infinitely large labeled image dataset. The proposed FDSL framework differs from other learning strategy like self-supervised learning, and doesn't require defining object categories and preparing real images. The experimental results show that FDSL pre-training outperforms some pre-trained models and captures unique features in a model visualization.

Biography

Hirokatsu Kataoka received his Ph.D. in engineering from Keio University in 2014. His research experience includes visiting scientist at Technical University of Munich (TUM) and JSPS Fellow (PD) at the University of Tokyo. Currently, he is a Senior Researcher at National Institute of Advanced Industrial Science and Technology (AIST). He also leads the cvpaper.challenge which conducts comprehensive survey and collaborative research in the field of computer vision and related academic fields. His research interest includes computer vision and pattern recognition, especially in large-scale dataset for image and video recognition. He has received ACCV 2020 Best Paper Honorable Mention Award, AIST 2019 Best Paper Award, and ECCV 2016 Workshop Brave New Idea.

Time Table

Feb. 20th		
8:30~	Registration	
9:00~10:40	Oral Session 1	1F, Grand Ballroom
10:40~11:00	Coffee Break	
11:00~11:20	Opening Ceremony	1F, Grand Ballroom
11:20~12:20	Keynote Speech 1	1F, Grand Ballroom
12:20~13:30	Lunch	B1, The Waven
12:20~14:30	Poster Session 1	2F, Greenwich Hall
14:30~16:10	Oral Session 2	1F, Grand Ballroom
16:10~16:30	Coffee Break	
16:30~18:10	Oral Session 3	1F, Grand Ballroom

Feb. 21st		
8:30~	Registration	
9:00~11:00	Oral Session 4	1F, Grand Ballroom
11:00~11:20	Coffee Break	
11:20~12:20	Keynote Speech 2	1F, Grand Ballroom
12:20~13:30	Lunch	B1, The Waven
12:20~14:30	Poster Session 2	2F, Greenwich Hall
14:30~16:30	Oral Session 5	1F, Grand Ballroom
16:30~16:50	Coffee Break	
16:50~18:10	Oral Session 6	1F, Grand Ballroom
18:10~18:30	Coffee Break	
18:30~20:30	Banquet & Award Ceremony	1F , Grand Ballroom

Feb. 22nd		
09:00~	Technical Tour	Departure Hotel Main Gate
12:00~	Workshop Board Meeting	Utop Marina Hotel & Resort

Presentation Program

	Oral Session 1 (Recognition A)	Feb. 20th, 2023 09:00 ~ 10:40	Session Chairs	Prof. Kanghyun Jo, Prof. Go Irie
O1-1	Hierarchical Image Classification with Conceptual Hierarchies Generated via Lexical Databases		Tomoaki Yamazaki, Seiya Ito and Kouzou Ohara	
O1-2	Action Recognition for Each Person with Feature Extraction by Large-scale Object Detector		Akira Mitsuoka and Kunihito Kato	
O1-3	Structural Point Cloud Data Recovery to Learning 3D Feature Representation		Ryosuke Yamada, Ryu Tadokoro, Yue Qiu, Hirokatsu Kataoka and Yutaka Satoh	
O1-4	Point Cloud Based Deep Molecular Pose Estimation for Structure-Based Virtual Screening		Ken Kariya, Go Irie, Ryosuke Furuta, Yota Yamamoto, Shin Aoki and Yukinobu Taniguchi	
O1-5	Efficient Multi-Receptive Pooling for Object Detection on Drone		Jinsu An, Dwisnanto Muhamad Putro, Adri Priadana and Kanghyun Jo.	

	Oral Session 2 (Image Analysis)	Feb. 20th, 2023 14:30 ~ 16:10	Session Chairs	Prof. Hae-Gon Jeon, Prof. Yuji Pyamada
O2-1	Robust Scene Text Detection under Occlusion via Multi-Scale Adaptive Deep Network		My-Tham Dinh, Minh-Trieu Tran, Quang-Vinh Dang and Guee-Sang Lee	
O2-2	Detection and Tracking of Flying Small Bats under Complex Backgrounds		Kakeru Sugimoto, Kazusa Ushio, Ryota Sugimori, Emyo Fujioka, Hiroaki Kawashima, Shizuko Hiryu and Hitoshi Habe	
O2-3	Facial Depth and Normal Estimation using Single Dual-Pixel Camera		Minjun Kang, Jaesung Choe, Hyowon Ha, Hae-Gon Jeon, Sunghoon Im, In So Kweon and Kuk-Jin Yoon	
O2-4	Generative Bias for Robust Visual Question Answering		Jae Won Cho, Dong-Jin Kim, Hyeonggon Ryu and In So Kweon	
O2-5	DDConv: Dilated Depthwise Convolution with YOLOv5 for Drone Imagery		Jehwan Choi, Minseung Kim, Donggue Kim and Kang-Hyun Jo	

	Oral Session 3 (Image Fundamental)	Feb. 20th, 2023 16:30 ~ 18:10	Session Chairs	Prof. Dong-Geol Choi, Prof. Hiroaki aizawa
O3-1	DASO: Distribution-Aware Semantics-Oriented Pseudo-label for Imbalanced Semi-Supervised Learning		Youngtaek Oh, Dong-Jin Kim and In So Kweon	
O3-2	Improvement of Robustness to Noise for Medical Image Segmentation by using Self-Supervised Learning Approach		Yuta Konishi and Takio Kurita	
O3-3	Bidirectional Domain Mixup for Domain Adaptive Semantic Segmentation		Minseok Seo, Yuhyun Kim and Dong-Geol Choi	
O3-4	LabOR: Labeling Only if Required for Domain Adaptive Semantic Segmentation		Inkyu Shin, Dong-Jin Kim, Jae Won Cho, Sanghyun Woo, Kwanyong Park and In So Kweon	
O3-5	Attribute Auxiliary Clustering for Person Re-identification		Ge Cao and Kanghyun Jo	

	Poster Session 1	Feb. 20th, 2023 12:20~14:30	Session Chairs	Prof. Choonsung Shin, Prof. Yota Yamamoto
P1-1	Format-Compatible 3D Metahuman Modeling from a Single Image		So Jin Yun, Soyoung Yoon and In Kyu Park	
P1-2	YOLO5PKLot: A Parking Lot Detection Network Based on Improved YOLOv5 for Smart Parking Management System		Duy-Linh Nguyen, Xuan-Thuy Vo, Adri Priadana and Kang-Hyun Jo	
P1-3	Texture Synthesis Based on Aesthetic Texture Perception Using CNN Style and Content Features		Yukine Sugiyama, Natsuki Sunda, Kensuke Tobitani and Noriko Nagata	
P1-4	Emotion Recognition by using optimised deep features		Irfan Haider, Soo-Hyung Kim, Hyung-Jeong Yang and Guee-Sang Lee.	
P1-5	Monitoring Students' Classroom Attention on Digital Platform		Hirotoshi Ibe and Hiromasa Nakatani	
P1-6	Patent Image Retrieval Using Cross-entropy-based Metric Learning		Kotaro Higuchi, Yuma Honbu and Keiji Yanai	
P1-7	Pre-training of Pneumonia Classifier for Chest CT images using Fractal Database		Yuken Yoshioka, Daichi Ikefuji, Tomokazu Funatsu, Takashi Nagaoka, Takenori Kozuka, Mitsutaka Nemoto, Takahiro Yamada, Yuichi Kimura, Kazunari Ishii and Hitoshi Habe	

	Poster Session 1	Feb. 20th, 2023 12:20~14:30	Session Chairs	Prof. Choonsung Shin, Prof. Yota Yamamoto
P1-8	Advanced Video Inpainting method using Residual Query Connection		Youngjun La and Jong-Il Park	
P1-9	Utilization of Temporal Detection Consistency for Improving the Multi-Object Tracking		Abhyudaya Singh Tak and Soon Ki Jung	
P1-10	A Study on Tracking Moving Objects: Pig counting with YOLOv5 and StrongSORT		Seunggwan Lee, Wonhaeng Lee and Junghoon Park	
P1-11	BRDF Measurement with TDCRA		Atsushi Kimura, Ryo Kawahara and Takahiro Okabe	
P1-12	Multi-scale Recurrent Residual U-Net for Anomaly Segmentation in Industrial Images		Haoyu Chen, Shivani Kolekar and Kyungbaek Kim	
P1-13	LHFAN: Scene Text Recognition Method Based on Multi-level Feature Fusion and Enhancement of Semantic Knowledge		Ruturaj Mahadshetti, Guee-Sang Lee, Hyung-Jeong Yang and Soo-Hyung Kim	
P1-14	Preliminary Study on Fish Tracking in Indoor Aquaculture through Deep Learning		Nguyen Ngoc Huynh, Hieyong Jeong, Myoungjae Jun, Hang Thi Phuong Nguyen and Choonsung Shin	
P1-15	Front Cover Image Database of Japanese Manga and Typeface Estimation of their Title		Shota Ishiyama, Kosuke Sakai and Minoru Mori	
P1-16	Robotics Education under Pandemic Lockdown Situation.		Danilo Caceres-Hernandez, Vicente González-Diaz, Kelvin Kung-Gomez and Kang-Hyun Jo.	
P1-17	Lane Detection using Canny Edge Detection Algorithm for Real-time Racing Game		Sehar Shahzad Farooq, Hameedur Rahman, Samiya Abdul Wahid, Iftikhar Ahmad, Jin Ho Lee and Soon Ki Jung	
P1-18	Influence Analysis of Each Facial Region on Facial Expressions Recognition		Min Sol Park and In Seop Na	

	Oral Session 4 (Recognition B)	Feb. 21st, 2023 09:00 ~ 11:00	Session Chairs	Prof. Inseop Na, Prof. Hitoshi Habe
O4-1	UDA-COPE: Unsupervised Domain Adaptation for Category-level Object Pose Estimation		Taeyeop Lee, Byeong-Uk Lee, Inkyu Shin, Jaesung Choe, Ukcheol Shin, In So Kweon and Kuk-Jin Yoon	
O4-2	Dynamic Circular Convolution for Image Classification		Xuan-Thuy Vo, Duy-Linh Nguyen, Adri Priadana and Kang-Hyun Jo	
O4-3	Task-specific Scene Structure Representations		Seunghyun Shin, Jisu Shin and Hae-Gon Jeon	
O4-4	Learning Depth from Focus in the Wild		Changyeon Won and Hae-Gon Jeon	
O4-5	Human Face Detector with Gender Identification by Split-based Inception Block and Regulated Attention Module		Adri Priadana, Muhamad Dwisnanto Putro, Duy-Linh Nguyen, Xuan-Thuy Vo and Kang-Hyun Jo	
O4-6	Novel Surveillance System for Suspicious Activities Analysis using Deep Learning		Bhavana Kaushik.	

	Oral Session 5 (Application A)	Feb. 21st, 2023 14:30 ~ 16:30	Session Chairs	Prof. Soon Ki Jung, Prof. Bhavana Kaushik
O5-1	3D structure extraction and evaluation of microvessels in cardiac tissue imaged by confocal microscopy		Shotaro Kaneko, Yuichiro Arima, Masahiro Migita and Masashi Toda	
O5-2	Multi-Attributed Face Synthesis for One-Shot Deep Face Recognition		Muhammad Shaheryar, Lamyanba Laishram, Jong Taek Lee and Soon Ki Jung	
O5-3	Parallax-based Imitation Learning with Human Intervention for Uncertain Insertion Tasks		Yasuharu Niwa, Kunihito Kato, Hiroaki Aizawa, Yoshiyuki Hatta and Kazuaki Ito	
O5-4	A Style-based Caricature Generator		Lamyanba Laishram, Muhammad Shaheryar, Jong Taek Lee and Soon Ki Jung	
O5-5	Detecting Mounting Behaviors of Dairy Cows by Pre-Training with Pseudo Images		Yuta Okuda, Yota Yamamoto, Kazuaki Nakamura and Yukinobu Taniguchi	
O5-6	Classification of Lung and Colon Cancer Using Deep Learning Method		Md. Al-Mamun Provath, Kaushik Deb and Kang-Hyun Jo	

	Oral Session 6 (Applications B)	Feb. 21st, 2023 16:45~18:05	Session Chairs	Prof. Jongil Park, Prof. Kazuhiko Sumi
O6-1	Reproduction of Artwork on Display using Hyperspectral Imaging and Monitor Calibration		Kyudong Sim and Jong-Il Park	
O6-2	Game Engine Compatible 3D Clothes Modeling from a Single Image		Soyoung Yoon, So Jin Yun and In Kyu Park	
O6-3	Event-Based Reflectance Separation		Ryota Kunimasu, Ryo Kawahara and Takahiro Okabe	
O6-4	A Set of Control Points Conditioned Pedestrian Trajectory Prediction		Inhwan Bae and Hae-Gon Jeon	

	Poster Session 2	Feb. 21st, 2023 12:20~14:30	Session Chairs	Prof. Jeong Hieyong
P2-1	Diffuse Large B-cell Lymphoma Survival Prediction using Encoding Clinical Features		Sy-Phuc Pham, Sae-Ryung Kang, Hyung-Jeong Yang, Deok-Hwan Yang, Sudarshan Pant, Soo-Hyung Kim and Guee-Sang Lee	
P2-2	Robust Data Augmentation for Accurate Human Pose Estimator		Tien Dat Tran, Xuan Thuy Vo, Adri Priadana and Kang-Hyun Jo	
P2-3	Multi-task model for glioma segmentation and isocitrate dehydrogenase status prediction using segmentation boundary		Xiaoyu Shi, Yinhao Li, Jingliang Cheng, Jie Bai, Guohua Zhao and Yen-Wei Chen	
P2-4	Impression Estimation of Suit Patterns Based on Style Features Using Multi-scale CNN		Eiki Tsumura, Kesnke Tobitani, Miyuki Toga and Noriko Nagata	
P2-5	A multi-layered structure of Pretrained Convolutional Neural Network for weed classification		Gwang-Hyun Yu, Dang Thanh Vu, Jeong Jaecheol, Chilwoo Lee and Jinyoung Kim	
P2-6	Two-stream Network for Moving Object Detection		Wisan Dhammatorn, Naoshi Kaneko, Seiya Ito and Kazuhiko Sumi	

	Poster Session 2	Feb. 21st, 2023 12:20~14:30	Session Chairs	Prof. Jeong Hieyong
P2-7	Multimodal Transformer for Automatic Depression Estimation System		Dang-Khanh Nguyen, Hyung-Jeong Yang, Seung-Won Kim, Guee-Sang Lee, Soo-Hyung Kim, Joo-Wan Kim and Min Jhon	
P2-8	Motion synthesis for automatic animation of sign language		Jongho Jeong, Chilwoo Lee, HeeJae Hwang and Hongnyeom Sung	
P2-9	Cattle Action Recognition with Multi-Viewpoint Cameras based on Deep Learning		Muhammad Fahad Nasir, Alvaro Fuentes, Shujie Han, Sook Yoon and Dong Sun Park	
P2-10	Convolutional Neural Networks with Particle Swarm Optimization: A Reliable Method for SARS-CoV-2 Detection in X-Ray Images		Atif Ali	
P2-11	Multi-region based radial GCN algorithm for real-time action recognition		Hanbyul Jang and Chil-Woo Lee	
P2-12	Advanced Machine Learning Techniques To Identify Emotions In Texts		Atif Ali	
P2-13	Object Pose Estimation Based on Template-matching Using Attention Module and Residual Block		Ga Eun Noh and Jong-Il Park	
P2-14	COVID -19 detection based on CT Scan images using Deep Learning methods		Tuan Le Dinh, Kim Jae-Huyn, Lee Suk-Hwan and Kwon Ki-Ryong	
P2-15	Enhanced Marathi Speech Recognition Using Double Delta MFCC and DTW		Rajashri G Kanke and Manasi R Baheti	
P2-16	Change Detection Over Multispectral Images: A Case Study On RUSHIKONDA		Fyzulla Shaik, Pavan Kumar Chitturi S, Pavan Veera Nagendra Kumar Chintakayala and Surya Prakash Punukollu	
P2-17	Gaussian Process based Illumination Planning for Photometric Stereo		Yuji Oyamada	
P2-18	Data Generation and Deep Learning network for Micro Defect Detection		Byungjoon Kim and Yongduek Seo	
P2-19	Classifying Breast Cancer Using Deep Convolutional Neural Network Method		Musfequa Rahman, Kaushik Deb and Kang-Hyun Jo	
P2-20	Rough Target Region Extraction with Background Learning		Ryo Nakamura, Yoshiaki Ueda, Masaru Tanaka and Jun Fujiki	

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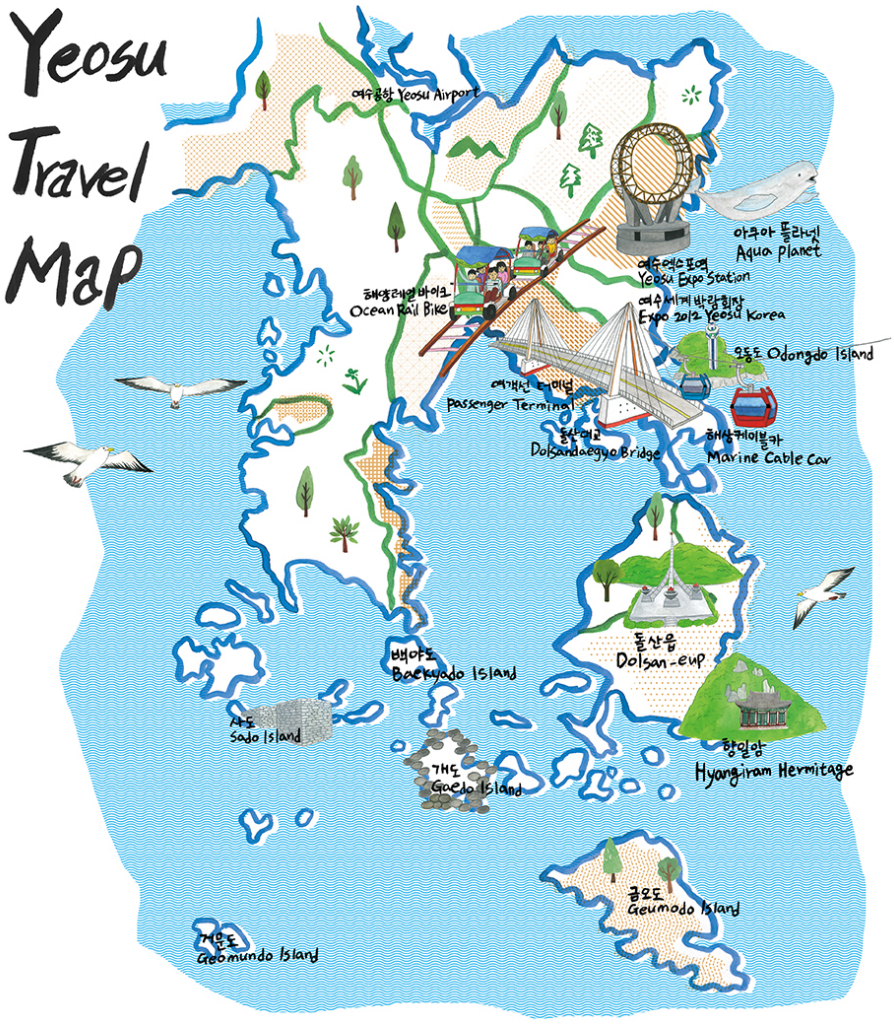
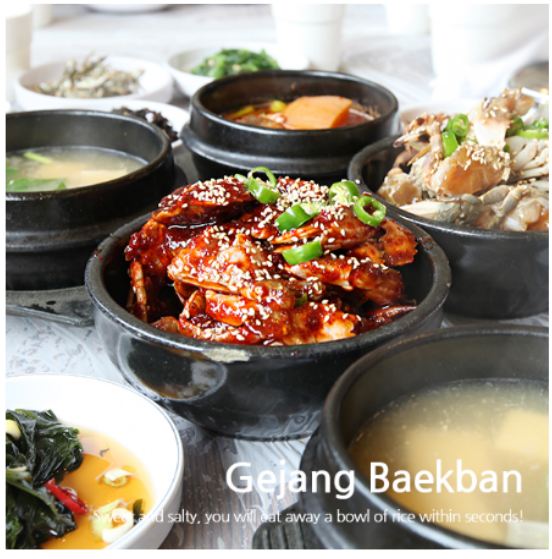
Yeosu Travel Map





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