

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 |

IW-FCV 2023 Organizing Committee

|Co-organized by |

Culture Technology Institute, Chonnam National University

Korean Institute Smart Media

CNU National Program of Excellence in Software

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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. Kazuhiko SUMI

Call for Paper

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(Utop Marina Hotel, Yeosu)

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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 unsupervised learning, Reinforcement learning

Important dates

X 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.

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

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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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 Chief Senior Researcher at National Institute of Advanced Industrial Science and Technology (AIST). He also leads the cypaper.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. 20 th		
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. 21 st		
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. 22 nd		
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	Dr. Kanghyun Jo, Dr. Go Irie
01-1	Hierarchical Image Class Generated via Lexical Da	ification with Conceptual Hierarchies stabases	Tomoaki Yamazaki, Seiya Ito and Kouzou Ohara	
O1-2	Action Recognition for E Large-scale Object Detec	ach Person with Feature Extraction by tor	Akira Mitsuoka and Kunihito Kato	
O1-3	Structural Point Cloud Da Representation	ata Recovery to Learning 3D Feature	Ryosuke Yamada, Ryu Tadokoro, Yue Qiu, Hirokatsu Kataoka and Yutaka Satoh	
01-4	Point Cloud Based Deep Structure-Based Virtual S	Molecular Pose Estimation for Screening	Ken Kariya, Go Irie, Ryosuke Furuta, Yota Yamamoto, Shin Aoki and Yukinobu Taniguchi	
O1-5	Efficient Multi-Receptive	e Pooling for Object Detection on Drone		nanto Muhamad Putro, and Kanghyun Jo.

	Oral Session 2 (Image Analysis)	Feb. 20th, 2023 14:30 ~ 16:10	Session Chairs	Dr. Hae-Gon Jeon, Dr. Yuji Pyamada
O2-1	Robust Scene Text Detection Adaptive Deep Network	n under Occlusion via Multi-Scale		Pinh, Minh-Trieu Tran, Dang and Guee-Sang Lee
O2-2	Detection and Tracking of F Backgrounds	lying Small Bats under Complex	Ryota Sugir	imoto, Kazusa Ushio, nori, Emyo Fujioka, vashima, Shizuko Hiryu Habe
O2-3	Facial Depth and Normal Es Camera	timation using Single Dual-Pixel	Ha, Hae-Go	g, Jaesung Choe, Hyowon n Jeon, Sunghoon Im, In nd Kuk-Jin Yoon
02-4	Generative Bias for Robust	Visual Question Answering		o, Dong-Jin Kim, Ryu and In So Kweon
O2-5	DDConv: Dilated Depthwise Drone Imagery	e Convolution with YOLOv5 for	Jehwan Cho Kim and Ka	i, Minseung Kim, Donggue ng-Hyun Jo

	Oral Session 3 (Image Fundamental)	Feb. 20th, 2023 16:30 ~ 18:10	Session Chairs	Dr. Dong-Geol Choi, Dr. Hiroaki aizawa	
O3-1		ASO: Distribution-Aware Semantics-Oriented Pseudo-label for balanced 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 Segmentation	for Domain Adaptive Semantic	Minseok Seo, Yuhyun Kim and Dong-Geol Choi		
O3-4	LabOR: Labeling Only if Resegmentation	quired for Domain Adaptive Semantic		Dong-Jin Kim, Jae Won yun Woo, Kwanyong Park tweon	
O3-5	Attribute Auxiliary Clusterin	g for Person Re-identification	Ge Cao and	Kanghyun Jo	

	Poster Session 1	Feb. 20th, 2023 12:20~14:30	Session Chairs	Dr. Choonsung Shin, Dr. Yota Yamamoto
P1-1	Format-Compatible Image	3D Metahuman Modeling from a Single	So Jin Yun, Soyoung Yoon and In Ky Park	
P1-2		arking Lot Detection Network Based on for Smart Parking Management System		lguyen, Xuan-Thuy Vo, na and Kang-Hyun Jo
P1-3	Texture Synthesis B CNN Style and Con	ased on Aesthetic Texture Perception Using tent Features	_	iyama, Natsuki Sunda, bbitani and Noriko Nagata
P1-4	-4 Emotion Recognition by using optimised deep features Irfan Haider, Soo-Hyung Kim Hyung-Jeong Yang and Guee 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 Higi Keiji Yanai	uchi, Yuma Honbu and
P1-7	Pre-training of Pneu Fractal Database	monia Classifier for Chest CT images using	Yuken Yoshioka, Daichi Ikefuji, Tomokazu Funatsu, Takashi Nagaoka, Takenori Kozuka, Mitsutaka Nemoto, Takahiro Yamada, Yuichi Kimura, Kazunari Ishii and Hitoshi Habe	
P1-8	Advanced Video Inp Connection	painting method using Residual Query	Youngjun I	a and Jong-Il Park

	Poster Session 1	Feb. 20th, 2023 12:20~14:30	Session Chairs	Dr. Choonsung Shin, Dr. Yota Yamamoto
P1-9	Utilization of Tempo Multi-Object Tracking	oral Detection Consistency for Improving the	Abhyudaya Jung	Singh Tak and Soon Ki
P1-10	A Study on Tracking YOLOv5 and Strong	g Moving Objects: Pig counting with gSORT	Seunggwar Junghoon F	Lee, Wonhaeng Lee and Park
P1-11	BRDF Measurement	t with TDCRA	Atsushi Kii Takahiro O	nura, Ryo Kawahara and kabe
P1-12	Multi-scale Recurrer in Industrial Images	nt Residual U-Net for Anomaly Segmentation	Haoyu Che Kyungbaek	n, Shivani Kolekar and Kim
P1-13		t Recognition Method Based on Multi-level Enhancement of Semantic Knowledge	Ruturaj Mahadshetti, Guee-Sang Lee, Hyung-Jeong Yang and Soo-Hyung Kim	
P1-14	Preliminary Study on through Deep Learni	n Fish Tracking in Indoor Aquaculture ing	Nguyen Ngoc Huynh, Hieyong Jeong, Myoungjae Jun, Hang Thi Phuong Nguyen and Choonsung Shin	
P1-15	Front Cover Image I Estimation of their T	Oatabase of Japanese Manga and Typeface itle	Shota Ishiy Minoru Mo	ama, Kosuke Sakai and ori
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 Real-time Racing Ga	g Canny Edge Detection Algorithm for name	Sehar Shahzad Farooq, Hameedur Rahman, Samiya Abdul Wahid, Iftikhar Ahmad, Jin Ho Lee and Soon Ki Jung	
P1-18	Influence Analysis o Recognition	of Each Facial Region on Facial Expressions	Min Sol Pa	rk and In Seop Na

	Oral Session 4 (Recognition B)	Feb. 21st, 2023 09:00 ~ 11:00	Session Chairs	Dr. Inseop Na, Dr. 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	
04-2	Dynamic Circular Convolution for Image Classification Xuan-Thuy Vo, Duy-Linh Nguyen, Adri Priadana and Kang-Hyun Jo			
O4-3	-3 Task-specific Scene Structure Representations Seunghyun Sh Hae-Gon Jeon		Shin, Jisu Shin and	
04-4	Learning Depth from Focus	in the Wild	Changyeon	Won and Hae-Gon Jeon
O4-5	Human Face Detector with Inception Block and Regula	Gender Identification by Split-based ted Attention Module	Adri Priadana, Muhamad Dwisnanto Putro, Duy-Linh Nguyen, Xuan-Thuy Vo and Kang-Hyun Jo	
O4-6	Novel Surveillance System using Deep Learning	for Suspicious Activities Analysis	Bhavana Ka	nushik.

	Oral Session 5 (Application A)	Feb. 21st, 2023 14:30 ~ 16:30	Session Chairs	Dr. Soon Ki Jung, Dr. 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 Le Uncertain Insertion Tasks	arning with Human Intervention for	Yasuharu Niwa, Kunihito Kato, Hiroaki Aizawa, Yoshiyuki Hatta and Kazuaki Ito	
O5-4	A Style-based Caricature Generator		•	Laishram, Muhammad Jong Taek Lee and Soon Ki
O5-5	Detecting Mounting Behavi with Pseudo Images	ors of Dairy Cows by Pre-Training	Yuta Okuda, Yota Yamamoto, Kazuaki Nakamura and Yukinobu Taniguchi	
O5-6	Classification of Lung and Method	Colon Cancer Using Deep Learning	Md. Al-Mar and Kang-H	nun Provath, Kaushik Deb Iyun Jo

	Oral Session 6 (Applications B)	Feb. 21st, 2023 16:45~18:05	Session Chairs	Dr. Jongil Park, Dr. Kazuhiko Sumi
O6-1	Reproduction of Artwork on Display using Hyperspectral Imaging and Monitor Calibration Kyudong Sim and Jong-Il Park		m 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 Kuni Takahiro Ol	masu, Ryo Kawahara and kabe
06-4	A Set of Control Points Co Prediction	onditioned Pedestrian Trajectory	Inhwan Bae	and Hae-Gon Jeon

	Poster Session 2	Feb. 21st, 2023 12:20~14:30	Session Chairs	Dr. Jeong Hieyong
P2-1	Diffuse Large B-cell Lymphoma Survival Prediction using Encoding Clinical Features		Hyung-Jeon	am, Sae-Ryung Kang, ng Yang, Deok-Hwan Yang, Pant, Soo-Hyung Kim and Lee
P2-2	Robust Data Augmentation for Accurate Human Pose Estimator Tien Dat Tran, Xuan Thuy Vo, A Priadana and Kang-Hyun Jo		<u>-</u>	
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 Features Using Multi	on of Suit Patterns Based on Style i-scale CNN	Eiki Tsumura, Kesnke Tobitani, Miyuki Toga and Noriko Nagata	
P2-5	A multi-layered struc Neural Network for v	cture of Pretrained Convolutional weed classification	Gwang-Hyun Yu, Dang Thanh Vu, Jeong Jaecheol, Chilwoo Lee and Jinyoung Kim	
P2-6	Two-stream Network	x for Moving Object Detection		mmatorn, Naoshi Kaneko, d Kazuhiko Sumi

	Poster Session 2 Feb. 21st, 202 12:20~14:30		Session Chairs	Dr. 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-ma attention module and residual block	tching using	Ga Eun No	oh and Jong-Il Park
P2-14	COVID -19 detection based on CT Scan image Deep Learning methods	es using		inh, Kim Jae-Huyn, Lee and Kwon Ki-Ryong
P2-15	Enhanced Marathi Speech Recognition Using Delta MFCC and DTW	Double	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 Photometric Stereo	for	Yuji Oyam	ada
P2-18	Data Generation and Deep Learning network f Defect Detection	or Micro	Byungjoon	Kim and Yongduek Seo
P2-19	Classifying Breast Cancer Using Deep Convol Neural Network Method	utional	Musfequa l Kang-Hyur	Rahman, Kaushik Deb and n Jo
P2-20	Rough Target Region Extraction with Backgro Learning	ound	•	nura, Yoshiaki Ueda, naka and Jun Fujiki

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