

CURRICULUM VITAE

Yusuke Mukuta

#4-6-1 Komaba,
Meguro-ku, Tokyo, 153-8904, Japan
Phone: +81-3-5452-5494
E-Mail: mukuta@mi.t.u-tokyo.ac.jp

WORK EXPERIENCE

The University of Tokyo, Meguro-ku, Tokyo, JAPAN May 2020- -present

Lecturer, Research Center for Advanced Science and Technology

- Teach and conduct research on image feature extraction at Machine Intelligence Lab.

The University of Tokyo, Bunkyo-ku, Tokyo, JAPAN April 2018- -April 2020

Assistant Professor, Department of Mechano-Informatics, Graduate School of Information Science and Technology

- Teach and conduct research on image feature extraction at Machine Intelligence Lab.

RIKEN AIP, Chuo-ku, Tokyo, JAPAN

October 2018- -present

Visiting Researcher

- Conduct research on image feature extraction at Machine Intelligence for Medical Engineering Team.

EDUCATION:

The University of Tokyo, Bunkyo-ku, Tokyo, JAPAN

April 2015- -March 2018

Ph.D. in Information Science and Technology

- Performed research under Prof. Tatsuya Harada on the theory of image feature extraction.

The University of Tokyo, Bunkyo-ku, Tokyo, JAPAN

April 2013 –March 2015

MS in Information Science and Technology (GPA 4.0/ 4.0)

- Performed research under Prof. Tatsuya Harada on causality measure and image recognition.

The University of Tokyo, Bunkyo-ku, Tokyo, JAPAN

April 2009 - March 2013

BS in Mechano-Informatics (GPA 3.72 / 4.0)

- Performed research under Prof. Tatsuya Harada on the method of the link prediction using a

probabilistic model.

INTERNSHIP:

National Astronomical Observatory of Japan

December 2013 – March 2014

Astronomy Data Center

- Performed research under Assoc. Prof. Tadafumi Takata and Prof. Yoshihiko Mizumoto on the method of time series analysis on astronomical data.

NTT Communication Science Laboratories

August 2016

- Performed research under Dr. Akisato Kimura.

PUBLICATIONS:

Yusuke Mukuta, Tatsuya Harada. Probabilistic Partial Canonical Correlation Analysis. In Proceedings of the 31st International Conference on Machine Learning (ICML 2014), pp.1449-1457, 2014.

Asako Kanezaki, Yusuke Mukuta, Tatsuya Harada. Mirror Reflection Invariant HOG descriptors for Object Detection. In IEEE International Conference on Image Processing (ICIP 2014), pp.1594-1598, 2014.

Yoshitaka Ushiku, Masataka Yamaguchi, Yusuke Mukuta, Tatsuya Harada. Common Subspace for Model and Similarity: Phrase Learning for Caption Generation from Images. In the 14th International Conference on Computer Vision (ICCV 2015), pp.2668-2676, December, 2015.

Yusuke Mukuta, Tatsuya Harada. Kernel Approximation via Empirical Orthogonal Decomposition for Unsupervised Feature Learning. In IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2016), pp.5222-5230, June, 2016.

Kuniaki Saito, Yusuke Mukuta, Yoshitaka Ushiku, Tatsuya Harada. Deep Modality Invariant Adversarial Network for Shared Representation Learning. In the 16th International Conference on Computer Vision Workshop on Transferring and Adapting Source Knowledge in Computer Vision (ICCV 2017 TASK-CV), pp.2623-2629, October, 2017.

Yusuke Mukuta, Yoshitaka Ushiku, Tatsuya Harada. Spatial-Temporal Weighted Pyramid using Spatial Orthogonal Pooling. In the 16th International Conference on Computer Vision Workshop on Compact and Efficient Feature Representation and Learning in Computer Vision (ICCV 2017 CEFRL), pp.1041-1049, October, 2017.

Yusuke Mukuta, Akisato Kimura, David Adrian, Zoubin Ghahramani. Weakly Supervised Collective Feature Learning from Curated Media. In the 32nd AAAI Conference on Artificial Intelligence (AAAI 2018), pp.7260-7267, February, 2018.

Yusuke Mukuta, Yoshitaka Ushiku, Tatsuya Harada. Alternating Circulant Random Features for

Semigroup Kernels. In the 32nd AAAI Conference on Artificial Intelligence (AAAI 2018), pp.3836-3843, February, 2018.

Akane Iseki, Yusuke Mukuta, Yoshitaka Ushiku, Tatsuya Harada. Estimating the Causal Effect from Partially Observed Time Series. In the 33rd AAAI Conference on Artificial Intelligence, pp.3219-3926, February, 2018.

Tadafumi Takata, Yusuke Mukuta, Yoshihiko Mizumoto. Modeling the Variability of Active Galactic Nuclei by Infinite Mixture of Ornstein-Uhlenbeck(OU) Processes. Astrophysical Journal, Volume 869, Number 2, pp.178-196, 2018.

Antonio Tejero-de-Pablos, Kaikai Huang, Hiroaki Yamane, Yusuke Kurose, Yusuke Mukuta, Yasushi Koyama, Junichi Iho, Youji Tokunaga, Makoto Horie, Keisuke Nishizawa, Yusaku Hayashi, Tatsuya Harada. Texture-based classification of significant stenosis in CCTA multi-view images of coronary arteries. In the 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2019), pp.732-740, 2019.

Shusuke Takahama, Yusuke Kurose, Yusuke Mukuta, Hiroyuki Abe, Masashi Fukayama, Akihiko Yoshizawa, Masanobu Kitagawa, Tatsuya Harada. Multi-Stage Pathological Image Classification Using Semantic Segmentation. In the 17th International Conference on Computer Vision (ICCV 2019), pp.10702-10711, 2019.

Kosuke Arase, Yusuke Mukuta, Tatsuya Harada. Rethinking Task and Metrics of Instance Segmentation on 3D Point Clouds. In the 4th Geometry Meets Deep Learning Workshop (ICCV 2019, Workshop), pp.4105-4113, 2019.

Yusuke Mori, Hiroaki Yamane, Yusuke Mukuta, Tatsuya Harada. Toward a Better Story End: Collecting Human Evaluation with Reasons. In the 12th International Conference on Natural Language Generation (INLG 2019), pp.383-390, 2019.

Naoya Fushishita, Antonio Tejero-de-Pablos, Yusuke Mukuta, Tatsuya Harada. Long-Term Human Video Generation of Multiple Futures Using Poses. In the Advances in Image Manipulation Workshop and Challenges (ECCV 2020, Workshop), pp.596-612, 2020.

Yuki Kawana, Yusuke Mukuta, Tatsuya Harada. Neural Star Domain as Primitive Representation. In the 34th Conference on Neural Information Processing Systems (Neurips 2020), 2020.

Yusuke Mori, Hiroaki Yamane, Yusuke Mukuta, Tatsuya Harada. Finding and Generating a Missing Part for Story Completion. In the 4th Joint SIGHUM Workshop on Computational Linguistics for Cultural Heritage, Social Sciences, Humanities and Literature, pp.156-166, 2020.

Takayuki Hara, Yusuke Mukuta, Tatsuya Harada. Spherical Image Generation from a Single Image by Considering Scene Symmetry. In the 35th AAAI Conference on Artificial Intelligence (AAAI 2021), pp.1513-1521, 2021.

Ryohei Shimizu, Yusuke Mukuta, Tatsuya Harada. Hyperbolic Neural Networks++. In the 9th International Conference on Learning Representations (ICLR 2021), 2021.

Yusuke Mori, Hiroaki Yamane, Yusuke Mukuta, Tatsuya Harada. The Nectar of Missing Position Prediction for Story Completion. In the 4th International Workshop on Narrative Extraction from Texts (ECIR 2021, Workshop), pp.65-69, 2021.

Wataru Kawai, Yusuke Mukuta, Tatsuya Harada. Real-Time Mesh Extraction from Implicit Functions via Direct Reconstruction of Decision Boundary. In 2021 IEEE International Conference on Robotics and Automation (ICRA 2021), pp.12875-12881, 2021.

Tomu Hirata, Yusuke Mukuta, Tatsuya Harada. Making Video Recognition Models Robust to Common Corruptions With Supervised Contrastive Learning. In the 3rd ACM International Conference on Multimedia in Asia Workshop on Visual Tasks and Challenges under Low-quality Multimedia Data (ACMMM Asia 2021, Workshop), 2021.

Ayaka Ideno, Yusuke Mukuta, Tatsuya Harada. Generation of Variable-Length Time Series from Text using Dynamic Time Warping-Based Method. In the 3rd ACM International Conference on Multimedia in Asia Workshop on Multi-Modal Embedding and Understanding (ACMMM Asia 2021, Workshop), 2021.

Hiromichi Kamata, Yusuke Mukuta, Tatsuya Harada. Fully Spiking Variational Autoencoder. In the 36th AAAI Conference on Artificial Intelligence, (AAAI 2022), pp.7059-7067, 2022.

Kohei Uehara, Yusuke Mori, Yusuke Mukuta, Tatsuya Harada. ViNTER: Image Narrative Generation with Emotion-Arc-Aware Transformer. In the 1st International Workshop on Multimodal Understanding for the Web and Social Media (WWW 2022, Workshop), pp.716-725, 2022.

Yuki Kawana, Yusuke Mukuta, Tatsuya Harada. Unsupervised Pose-aware Part Decomposition for Man-made Articulated Objects. In the 17th European Conference on Computer Vision (ECCV 2022), pp.558-575, 2022.

Kohtaro Tanaka, Hiroaki Yamane, Yusuke Mori, Yusuke Mukuta, Tatsuya Harada. Learning to Evaluate Humor in Memes Based on the Incongruity Theory. In When creative AI meets conversational AI (COLING 2022, Workshop), pp.81-93, 2022.

Daiki Naruse, Tomoyuki Takahata, Yusuke Mukuta, Tatsuya Harada. Pop Music Generation with Controllable Phase Length. In the 23rd International Society for Music Information Retrieval Conference (ISMIR 2022), pp.125-131, 2022.

Takayuki Hara, Yusuke Mukuta, Tatsuya Harada. Spherical Image Generation From a Few Normal-Field-of-View Images by Considering Scene Symmetry. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2022.

Yusuke Mori, Hiroaki Yamane, Ryohei Shimizu, Yusuke Mukuta, Tatsuya Harada. COMPASS: a Creative Support System that Alerts Novelists to the Unnoticed Missing Contents. Computer Speech & Language, 2022.

Thomas Westfechtel, Hao-Wei Yeh, Qier Meng, Yusuke Mukuta, Tatsuya Harada. Backprop Induced Feature Weighting for Adversarial Domain Adaptation with Iterative Label Distribution Alignment.

In the Winter Conference on Applications of Computer Vision (WACV 2023), pp.392-401, 2023.

Shunsuke Takahama, Yusuke Kurose, Yusuke Mukuta, Hiroyuki Abe, Akihiko Yoshizawa, Tetsuo Ushiku, Masashi Fukayama, Masanobu Kitagawa, Masaru Kitsuregawa, Tatsuya Harada. Domain Adaptive Multiple Instance Learning for Instance-level Prediction of Pathological Images. In the 20th IEEE International Symposium on Biomedical Imaging (ISBI 2023), pp.1-5, 2023.

Kohei Shiba, Yusuke Mukuta, Tatsuya Harada. Zero-shot Object Classification with Large-scale Knowledge Graph. In the 2nd Workshop on Learning with Limited Labelled Data for Image and Video Understanding (CVPR 2023 Workshop), pp.4990-4997, 2023.

Yusuke Mukuta, Tatsuya Harada. Invariant Feature Coding using Tensor Product Representation. Transactions on Machine Learning Research, 2023.

Motoki Omura, Takayuki Osa, Yusuke Mukuta, Tatsuya Harada. Symmetric Q-Learning: Reducing Skewness of Bellman Error in Online Reinforcement Learning. In the 38th AAAI Conference on Artificial Intelligence (AAAI 2024), pp.14474-14481, 2024.

Kohtaro Tanaka, Kohei Uehara, Lin Gu, Yusuke Mukuta, Tatsuya Harada. Content-Specific Humorous Image Captioning Using Incongruity Resolution Chain-of-Thought. In Findings of the Association for Computational Linguistics (NAACL 2024 Findings), pp.2348–2367, 2024.

Shun Yoshikawa, Yusuke Mukuta, Takayuki Osa, Tatsuya Harada. RallySim : Simulated Environment with Continuous Control for Turn-based Multi-agent Reinforcement Learning. In the 2nd Workshop on MAD-Games: Multi-Agent Dynamic Games (ICRA 2024 workshop), 2024.

Motoki Omura, Takayuki Osa, Yusuke Mukuta, Tatsuya Harada. Stabilizing Extreme Q-learning by Maclaurin Expansion. In the 1st Reinforcement Learning Conference (RLC 2024), pp. pp. 1427–1440, 2024

Haruo Fujiwara, Yusuke Mukuta, Tatsuya Harada. Style-NeRF2NeRF: 3D Style Transfer From Style-Aligned Multi-View Images. In SIGGRAPH Asia 2024, accepted, 2024.

Tanachai Anakewat, Yusuke Mukuta, Thomas Westfechtel, Tatsuya Harada. Self-Stitching: Widely Applicable and Efficient Transfer Learning Using Stitching Layer. In Fine-Tuning in Modern Machine Learning: Principles and Scalability (Neurips 2024, Workshop), accepted, 2024.

INVITED TALKS:

Yusuke Mukuta, Tatsuya Harada. Probabilistic Partial Canonical Correlation Analysis. In the 18th Meeting on Image Recognition and Understanding (MIRU 2015), 2015.

Yusuke Mukuta, Yoshitaka Ushiku, Tatsuya Harada. Alternating Circulant Random Features for Semigroup Kernels. In the 17th Forum on information Technology (FIT2018), 2018.

Yusuke Mukuta. On training and application of equivariant neural networks. In the 7th International Workshop on Symbolic-Neural Learning (SNL2023), 2023.

FELLOWSHIPS:

JSPS Research Fellowship for Young Scientists (DC2)

April 2017–March 2018

GRANTS:

JSPS Grant-in-Aid for Young Scientists

April 2019—March 2023

JST Moonshot R&D

December 2020—Present

AWARDS:

Masataka Yamaguchi, Qishen Ha, Katsunori Ohnishi, Masatoshi Hidaka, Yusuke Mukuta, Tatsuya Harada. 3rd Place in the object detection task with external data, ImageNet Large Scale Visual Recognition Challenge 2015

SKILLS:

Programming Languages – MATLAB, Python, C++, C