

Hirokatsu Kataoka



Ph.D. in Engineering (Keio University)
Chief Senior Researcher, AIRC, AIST
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1. Contact Information

- Webpage: <https://hirokatsukataoka.net/>
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2. Professional Experience

- National Institute of Advanced Industrial Science and Technology (AIST)
 - Chief Senior Researcher: Apr. 2023 – Present
 - Senior Researcher: Oct. 2020 – Mar. 2023
 - Researcher: Apr. 2016 – Sep. 2020
 - Postdoctoral Fellow: Apr. 2015 – Mar. 2016
- Visual Geometry Group, University of Oxford (Oxford VGG)
 - Academic Visitor: Sep 2024 – Present
- Fundamental AI Lab (FunAI Lab), the University of Technology Nuremberg (UTN)
 - Co-supervisor: Oct 2024 – Present
- SB Intuitions
 - Visiting Researcher: May 2024 – Present
- Tokyo Denki University
 - Adjunct Associate Researcher: Apr. 2024 – Present
- LINE / LY Corporation
 - Adjunct Researcher (LINE): Apr. 2022 – Sep. 2023
 - Adjunct Researcher (LY Corp): Oct. 2023 – Mar. 2024
- Omron Sinic X Corporation (OSX)
 - Visiting Researcher: May 2018 – Mar. 2020
- The University of Tokyo
 - JSPS Postdoctoral Fellow: Apr. 2014 – Mar. 2015
 - Supervisor : Prof. Masamichi Shimosaka
- Technische Universitat Munchen (TUM)
 - Visiting Scientist: Sep. 2014 – Nov. 2014
 - Visiting Scientist: Jul. 2013 – Sep. 2013
 - Supervisor: Prof. Nassir Navab, Dr. Slobodan Ilic, Dr. Federico Tombari
- Keio University
 - JSPS Research Fellow: Apr. 2013 – Mar. 2014
 - Supervisor: Prof. Yoshimitsu Aoki
- National Institute of Advanced Industrial Science and Technology (AIST)
 - Research Internship: May 2012 – Mar. 2013

- Supervisor: Dr. Yutaka Satoh, Dr. Kenji Iwata
- University of California, Riverside (UCR)
 - Visiting Scholar: Aug. 2011 – Feb. 2012
 - Supervisor : Prof. Bir Bhanu

3. Education

- Keio University
 - Ph.D. Candidate: Apr. 2011 – Mar. 2014
 - Master course: Apr. 2009 – Mar. 2011
 - Supervisor: Prof. Yoshimitsu Aoki
- Shibaura Institute of Technology (SIT)
 - Bachelor course: Apr. 2005 – Mar. 2009
- Midorioka High School
 - High School Student: Apr. 2002 – Mar 2005

4. Journals

1. Go Ohtani, Hirokatsu Kataoka, Yoshimitsu Aoki, “RECA: A Pipeline for Refinement of Compressed Artifacts in Image Super-Resolution Training,” in IEEE Access, 2025, URL: <https://ieeexplore.ieee.org/abstract/document/11177494>
2. Yuichi Iwasaki, Hiroko Arai, Akihiro Tamada, Hirokatsu Kataoka, “Japanese mayfly family classification with a vision transformer model,” in Limnology, 2025, URL: <https://link.springer.com/article/10.1007/s10201-025-00805-9>
3. Erika Mori, Yue Qiu, Hirokatsu Kataoka, Yoshimitsu Aoki, “A Comprehensive Analysis of a Social Intelligence Dataset and Response Tendencies Between Large Language Models (LLMs) and Humans,” Sensors Journal, 2025, URL: <https://www.mdpi.com/1424-8220/25/2/477>.
4. Kazuhide Mimura, Takuya Itaki, Hirokatsu Kataoka, Ayumu Miyakawa, “Classifying microfossil radiolarians on fractal pre-trained vision transformers”, Scientific Reports, 2025, URL: <https://www.nature.com/articles/s41598-025-90988-z>.
5. Koshi Makihara, Yukiyasu Domae, Ryo Hanai, Ixchel G. Ramirez-Alpizar, Hirokatsu Kataoka, Kensuke Harada, “Deformability-Based Grasp Pose Detection From a Visible Image,” IEEE Access, 2024, URL: <https://ieeexplore.ieee.org/abstract/document/10776971>.
6. Ryosuke Yamada, Ryu Tadokoro, Yue Qiu, Hirokatsu Kataoka, Yutaka Satoh, “Masked Structural Point Cloud Modeling for Learning 3D Representation,” IEEE Access, 2024, URL: <https://ieeexplore.ieee.org/document/10700714>.
7. Guoqing Hao, Satoshi Iizuka, Kensho Hara, Hirokatsu Kataoka, Kazuhiro Fukui, “Natural Image Decay With a Decay Effects Generator”, IEEE Access, 2023, URL : <https://ieeexplore.ieee.org/document/10298210>
8. Kodai Nakashima, Hirokatsu Kataoka, Yutaka Satoh, “Does Formula-Driven Supervised Learning Work on Small Datasets?”, IEEE Access, 2023, URL: <https://ieeexplore.ieee.org/document/10266324>
9. Yanjun Sun, Yue Qiu, Yoshimitsu Aoki, Hirokatsu Kataoka, “Outdoor Vision-and-Language Navigation Needs Object-level Alignment”, Sensors, 2023, URL: <https://www.mdpi.com/1424-8220/23/13/6028>
10. Hirokatsu Kataoka, Kazushige Okayasu, Asato Matsumoto, Eisuke Yamagata, Ryosuke Yamada, Nakamasa Inoue, Akio Nakamura, Yutaka Satoh, “Pre-training without Natural Images”, International Journal of Computer Vision (IJCV), 2022, URL : <https://link.springer.com/article/10.1007/s11263-021-01555-8>
11. Kensho Hara, Hirokatsu Kataoka, Masaki Inaba, Kenichi Narioka, Ryusuke Hotta, Yutaka Satoh, “Predicting Appearance of Vehicles from Blind Spots Based on Pedestrian Behaviors at Crossroads”, IEEE Transactions on Intelligent Transportation Systems (T-ITS), no.9, pp.1–13, 2021, URL: <https://ieeexplore.ieee.org/document/9531560>
12. Shintaro Yamamoto, Ryota Suzuki, Tsukasa Fukusato, Hirokatsu Kataoka, Shigeo Morishima, “A Case Study on User Evaluation of Scientific Publication Summarization by Japanese Students”, Applied Sciences, 11(14), 6287, 2021, URL: <https://www.mdpi.com/2076-3417/11/14/6287>
13. Hideki Tsunashima, Kosuke Arase, Antony Lam, Hirokatsu Kataoka, “UVIRT—Unsupervised Virtual Try-on Using Disentangled Clothing and Person Features”, Sensors, 20(19), 5647, 2020, URL: <https://www.mdpi.com/1424-8220/20/19/5647>

14. Yue Qiu, Yutaka Satoh, Ryota Suzuki, Kenji Iwata, Hirokatsu Kataoka, “Indoor Scene Change Captioning based on Multi-modality Data”, *Sensors*, 2020, URL : <https://www.mdpi.com/1424-8220/20/17/4761>
15. Yue Qiu, Yutaka Satoh, Ryota Suzuki, Kenji Iwata, Hirokatsu Kataoka, “Multi-view Visual Question Answering with Active Viewpoint Selection”, *Sensors*, 2020, URL : <https://www.mdpi.com/1424-8220/20/8/2281>
16. Yue Qiu, Yutaka Satoh, Ryota Suzuki, Kenji Iwata, Hirokatsu Kataoka, “3D-Aware Scene Change Captioning from Multiview Images”, *IEEE Robotics and Automation Letters (RA-L)* with IROS presentation, 2020, URL : <https://ieeexplore.ieee.org/abstract/document/9120195>
17. Hirokatsu Kataoka, Yutaka Satoh, Yoshimitsu Aoki, Shoko Oikawa, Yasuhiro Matsui, “Temporal and Fine-grained Pedestrian Action Recognition on Driving Recorder Database”, *Sensors*, 18(2), 627, 2018, URL : <https://www.mdpi.com/1424-8220/18/2/627>
18. Yudai Miyashita, Hirokatsu Kataoka, Akio Nakamura, “Analyzing Fine Motion Considering Individual Habits for Appearance-based Proficiency Evaluation”, *IEICE Transactions on Information and Systems*, Vol.E100-D, No.1., pp.166–174, 2017, URL : <https://www.jstage.jst.go.jp/article/transinf/E100.D/1/E100.D.2016EDP7138/article/-char/ja/>
19. Hirokatsu Kataoka, Kimimasa Tamura, Yasuhiro Matsui, Yoshimitsu Aoki, “Extended Feature Descriptor and Vehicle Motion Model with Tracking-by-detection for Pedestrian Active Safety”, *IEICE Trans. On Information and Systems*, Vol.97, No.2, pp.296–304, 2014, URL : <https://www.jstage.jst.go.jp/article/transinf/E97.D/2/E97.D.296/article/-char/ja>
20. Hirokatsu Kataoka, Yoshimitsu Aoki, Yasuhiro Matsui, “Symmetrical Judgment Area Reduction and ECoHOG Feature Descriptor for Pedestrian Detection”, *International Journal of Vehicle Safety*, vol.6, no.1, pp.48–60, 2012, URL : <https://www.inderscience.com/info/inarticle.php?artid=48548>

5. Proceedings

1. Ryosuke Yamada, Kohsuke Ide, Yoshihiro Fukuhara, Hirokatsu Kataoka, Gilles Puy, Andrei Bursuc, Yuki M Asano, “3D sans 3D Scans: Scalable Pre-training from Video-Generated Point Clouds,” in arXiv preprint arXiv:2512.23042, 2025, URL: <https://arxiv.org/abs/2512.23042>
2. Hirokatsu Kataoka, Sora Takashima, Ryo Hayamizu, Ryosuke Yamada, Kodai Nakashima, Xinyu Zhang, Edgar Josafat Martinez-Noriega, Nakamasa Inoue, Rio Yokota, “Pre-training Vision Transformers with Formula-driven Supervised Learning,” in arXiv:2206.09132, 2025, URL: <https://arxiv.org/abs/2206.09132>
3. Kodai Kawamura, Yuta Goto, Rintaro Yanagi, Hirokatsu Kataoka, Go Irie, “Approximate Domain Unlearning for Vision-Language Models,” in *NeurIPS 2025*, 2025, URL: <https://arxiv.org/abs/2510.08132>
4. Masaki Kawamura, Nakamasa Inoue, Rintaro Yanagi, Hirokatsu Kataoka, Rio Yokota, “PowerCLIP: Powerset Alignment for Contrastive Pre-Training,” in arXiv preprint arXiv:2511.23170, 2025, URL: <https://arxiv.org/abs/2511.23170>
5. Orest Kupyn, Hirokatsu Kataoka, Christian Rupprecht, “S3OD: Towards Generalizable Salient Object Detection with Synthetic Data,” arXiv preprint arXiv:2510.21605, 2025, URL: <https://arxiv.org/abs/2510.21605>
6. Risa Shinoda, Nakamasa Inoue, Hirokatsu Kataoka, Masaki Onishi, Yoshitaka Ushiku, “Agrobench: Vision-language model benchmark in agriculture,” in *IEEE/CVF International Conference on Computer Vision (ICCV)*, 2025, URL: https://openaccess.thecvf.com/content/ICCV2025/html/Shinoda_AgroBench_Vision-Language_Model_Benchmark_in_Agriculture_ICCV_2025_paper.html
7. Risa Shinoda, Nakamasa Inoue, Iro Laina, Christian Rupprecht, Hirokatsu Kataoka, “AnimalClue: Recognizing Animals by Their Traces,” in *IEEE/CVF International Conference on Computer Vision (ICCV)*, 2025, URL: https://openaccess.thecvf.com/content/ICCV2025/html/Shinoda_AnimalClue_Recognizing_Animals_by_their_Traces_ICCV_2025_paper.html
8. Misora Sugiyama, Hirokatsu Kataoka, “Simple Visual Artifact Detection in Sora-Generated Videos,” in *ICCV 2025 HiGen Workshop*, 2025, URL: <https://arxiv.org/abs/2504.21334>

9. Shinichi Mae, Ryosuke Yamada, Hirokatsu Kataoka, “Industrial Synthetic Segment Pre-training,” in ICCV 2025 LIMIT Workshop, 2025, URL: <https://arxiv.org/abs/2505.13099>
10. Masatoshi Tateno, Gido Kato, Hirokatsu Kataoka, Yoichi Sato, Takuma Yagi, “HanDyVQA: A Video QA Benchmark for Fine-Grained Hand-Object Interaction Dynamics,” in ICCV 2025 HANDS Workshop, 2025, URL: <https://arxiv.org/abs/2512.00885>
11. Shogo Iwakata, Ryosuke Oshima, Hideki Tsunashima, Qi Feng, Hirokatsu Kataoka, Shigeo Morishima, “Dependent 3D Visual Grounding for Mobile Robots,” in IEEE International Conference on Image Processing (ICIP), 2025, URL: <https://ieeexplore.ieee.org/abstract/document/11084504>
12. Fumiya Uchiyama, Rintaro Yanagi, Shohei Taniguchi, Shota Takashiro, Masahiro Suzuki, Hirokatsu Kataoka, Yusuke Iwasawa, Yutaka Matsuo, “CLIP-like Model as a Foundational Density Ratio Estimator,” in arXiv preprint arXiv:2506.22881, 2025, URL: <https://arxiv.org/abs/2506.22881v2>
13. Fumiya Uchiyama, Rintaro Yanagi, Shohei Taniguchi, Shota Takashiro, Masahiro Suzuki, Hirokatsu Kataoka, Yusuke Iwasawa, Yutaka Matsuo, “How Semantically Informative is an Image?: Measuring the Covariance-Weighted Norm of Contrastive Learning Embeddings,” in arXiv preprint arXiv:2506.22881, 2025, URL: <https://arxiv.org/abs/2506.22881v1>
14. Kohei Torimi, Ryosuke Yamada, Daichi Otsuka, Kensho Hara, Yuki M Asano, Hirokatsu Kataoka, Yoshimitsu Aoki, “Text-guided Synthetic Geometric Augmentation for Zero-shot 3D Understanding,” in Synthetic Data for Computer Vision Workshop @ CVPR 2025, 2025, URL: <https://arxiv.org/abs/2501.09278>
15. Yuto Matsuo, Yoshihiro Fukuhara, Yuki M Asano, Hirokatsu Kataoka, Akio Nakamura, “MoireDB: A Formula-driven Image Dataset for Robustness Enhancement,” in Synthetic Data for Computer Vision Workshop @ CVPR 2025, 2025, URL: <https://openreview.net/forum?id=GhDmrlCsJO>
16. Noritake Kodama, Go Ohtani, Yuto Matsuo, Rintaro Yanagi, Nakamasa Inoue, Yoshimitsu Aoki, Hirokatsu Kataoka, “GASR: Generated Artwork dataset for Image Super-Resolution,” in Synthetic Data for Computer Vision Workshop @ CVPR 2025, 2025, URL: <https://openreview.net/forum?id=msSI7qCbtO>
17. Ren Ohkubo, Rintaro Yanagi, Hirokatsu Kataoka, Yutaka Satoh, “Boosting Synthetic Data for VLMs via Diffusion Noise Optimization,” in Synthetic Data for Computer Vision Workshop @ CVPR 2025, 2025, URL: <https://openreview.net/forum?id=yUB4MibBqn>
18. Filipe Laitenberger, Nesta Midavaine, Ioana Simion, Stefan Vasilev, Hirokatsu Kataoka, Cees GM Snoek, Yuki M Asano, Mohammadreza Salehi, “BRADD: Balancing Representations with Anomaly Detection and Diffusion,” in Synthetic Data for Computer Vision Workshop @ CVPR 2025, 2025, URL: <https://openreview.net/forum?id=msSI7qCbtO>
19. Daichi Otsuka, Shinichi Mae, Ryosuke Yamada, Hirokatsu Kataoka, “Pre-training with 3D Synthetic Data: Learning 3D Point Cloud Instance Segmentation from 3D Synthetic Scenes,” in arXiv preprint arXiv:2503.24229, 2025, URL: <https://arxiv.org/abs/2503.24229>
20. Erika Mori, Yue Qiu, Hirokatsu Kataoka, Yoshimitsu Aoki, “Leveraging LLMs with Iterative Loop Structure for Enhanced Social Intelligence in Video Question Answering”, arXiv pre-print:2503.21190, 2025, URL: <https://arxiv.org/abs/2503.21190>.
21. Shinichi Mae, Hirokatsu Kataoka, “Efficient Load Interference Detection with Limited Labeled Data,” SII, 2025. (SICE International Young Authors Award), URL: <https://ieeexplore.ieee.org/abstract/document/10870959>
22. Yuto Matsuo, Ryo Hayamizu, Hirokatsu Kataoka, Akio Nakamura, “MoireDB: Formula-generated Interference-fringe Image Dataset,” arXiv pre-print 2502.01490, 2025, URL: <https://arxiv.org/abs/2502.01490>.
23. Kohei Torimi, Ryosuke Yamada, Daichi Otsuka, Kensho Hara, Yuki M. Asano, Hirokatsu Kataoka, Yoshimitsu Aoki, “Text-guided Synthetic Geometric Augmentation for Zero-shot 3D Understanding,” arXiv pre-print, arXiv:2501.09278, 2025, URL: <https://arxiv.org/abs/2501.09278>.
24. Yuto Shibata, Keitaro Tanaka, Yoshiaki Bando, Keisuke Imoto, Hirokatsu Kataoka, Yoshimitsu Aoki, “Formula-Supervised Sound Event Detection: Pre-Training Without Real Data,” ICASSP 2025, URL: <https://ieeexplore.ieee.org/abstract/document/10888414>.
25. Takumi Fukuzawa, Kensho Hara, Hirokatsu Kataoka, Toru Tamaki, “Can masking background and object reduce static bias for zero-shot action recognition?,” International Conference on MultiMedia Modeling (MMM), 2025, URL: https://link.springer.com/chapter/10.1007/978-981-96-2071-5_27.
26. Shutaro Okada, Kenji Doi, Ryota Yoshihashi, Hirokatsu Kataoka, Tomohiro Tanaka, “Constant Rate Schedule: Constant-Rate Distributional Change for Efficient Training and Sampling in Diffusion Models,” arXiv pre-print 2411.12188, 2024, URL: <https://arxiv.org/abs/2411.12188>.

27. Kenji Doi, Shutaro Okada, Ryota Yoshihashi, Hirokatsu Kataoka, “Real-SRGD: Enhancing Real-World Image Super-Resolution with Classifier-Free Guided Diffusion,” Asian Conference on Computer Vision (ACCV), 2024, URL: https://openaccess.thecvf.com/content/ACCV2024/html/Doi_Real-SRGD_Enhancing_Real-World_Image_Super-Resolution_with_Classifier-Free_Guided_Diffusion_ACCV_2024_paper.html.
28. Ryota Yoshihashi, Yuya Otsuka, Kenji Doi, Tomohiro Tanaka, Hirokatsu Kataoka, “Exploring Limits of Diffusion-Synthetic Training with Weakly Supervised Semantic Segmentation,” Asian Conference on Computer Vision (ACCV), 2024, URL: https://openaccess.thecvf.com/content/ACCV2024/html/Yoshihashi_Exploring_Limits_of_Diffusion-Synthetic_Training_with_Weakly_Supervised_Semantic_Segmentation_ACCV_2024_paper.html.
29. Fumiya Matsuzawa, Yue Qiu, Yanjun Sun, Kenji Iwata, Hirokatsu Kataoka, Yutaka Satoh, “Subtle-Diff: A Dataset for Precise Recognition of Subtle Differences among Visually Similar Objects,” IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2024.
30. Shinichi Mae, Ryosuke Yamada, Hirokatsu Kataoka, “Keeping Segment Mask Quality with Self-generated Masks,” ECCV 2024 Workshop on Darkside of GenAIs and Beyond, 2024, URL: <https://openreview.net/forum?id=Y2I9KnIsSa>.
31. Ryosuke Yamada, Kensho Hara, Hirokatsu Kataoka, Koshi Makihara, Nakamasa Inoue, Rio Yokota, Yutaka Satoh, “Formula-Supervised Visual-Geometric Pre-training,” European Conference on Computer Vision (ECCV), 2024, URL: https://www.ecva.net/papers/eccv_2024/papers_ECCV/html/3233_ECCV_2024_paper.php.
32. Go Ohtani, Ryu Tadokoro, Ryosuke Yamada, Yuki M Asano, Iro Laina, Christian Rupprecht, Nakamasa Inoue, Rio Yokota, Hirokatsu Kataoka, Yoshimitsu Aoki, “Rethinking Image Super Resolution from Training Data Perspectives,” European Conference on Computer Vision (ECCV), 2024, URL: https://www.ecva.net/papers/eccv_2024/papers_ECCV/html/2525_ECCV_2024_paper.php.
33. Ryo Nakamura, Ryu Tadokoro, Ryosuke Yamada, Yuki M. Asano, Iro Laina, Christian Rupprecht, Nakamasa Inoue, Rio Yokota, Hirokatsu Kataoka, “Scaling Backwards: Minimal Synthetic Pretraining?,” European Conference on Computer Vision (ECCV), 2024, URL: <https://arxiv.org/abs/2408.00677>.
34. Shun Iwase, Eisaku Maeda, Nakamasa Inoue, Hirokatsu Kataoka, Ryo Nakamura, Rio Yokota, Shuya Takahashi, “On the Relationship Between Double Descent of CNNs and Shape/Texture Bias Under Learning Process,” ICPR 2024, URL: <https://arxiv.org/abs/2503.02302>.
35. Ryosuke Yamada, Ryosuke Takahashi, Go Ohtani, Erika Mori, Hirokatsu Kataoka, Yoshimitsu Aoki, “Is ImageNet Pre-training Fair in Image Recognition?,” CVPR Workshop on Responsible Data, 2024, URL: .
36. Ryo Hayamizu, Shota Nakamura, Sora Takashima, Hirokatsu Kataoka, Ikuro Sato, Nakamasa Inoue, Rio Yokota, “SIFTer: Self-improving Synthetic Datasets for Pre-training Classification Models,” CVPR Workshop on Synthetic Dataset for Computer Vision, 2024, URL: <https://openreview.net/forum?id=EvDZlchHND0>.
37. Peifei Zhu, Tsubasa Takahashi, Hirokatsu Kataoka, Watermark-embedded Adversarial Examples for Copyright Protection against Diffusion Models, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024, URL: <https://arxiv.org/abs/2404.09401>.
38. Yuichi Iwasaki, Hiroko Arai, Akihiro Tamada, Hirokatsu Kataoka, “Japanese mayfly family classification with a vision transformer model”, EcoEvoRxiv, 2024, URL: <https://ecoevorxiv.org/repository/view/6695/>.
39. Yanjun Sun, Yue Qiu, Yoshimitsu Aoki, Hirokatsu Kataoka, “Guided by the Way: The Role of On-the-route Objects and Scene Text in Enhancing Outdoor Navigation”, ICRA 2024, URL: <https://ieeexplore.ieee.org/document/10611727/>.
40. Ryo Nakamura, Ryu Tadokoro, Eisuke Yamagata, Yusuke Kondo, Kensho Hara, Hirokatsu Kataoka, Nakamasa Inoue Pseudo-outlier synthesis using q-Gaussian distributions for out-of-distribution detection, ICASSP 2024, URL: <https://2024.ieeeicassp.org/>
41. Yuchi Ishikawa, Masayoshi Kondo, Hirokatsu Kataoka, “Learnable Cube-Based Video Encryption for Privacy-Preserving Action Recognition”, WACV, 2024, URL: https://openaccess.thecvf.com/content/WACV2024/html/Ishikawa_Learnable_Cube-Based_Video_Encryption_for_Privacy-Preserving_Action_Recognition_WACV_2024_paper.html

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43. Yamato Okamoto, Osada Genki, Iu Yahiro, Rintaro Hasegawa, Peifei Zhu, Hirokatsu Kataoka, "Image Generation and Learning Strategy for Deep Document Forgery Detection" arXiv pre-print:2311.03650, 2023, URL: <https://arxiv.org/abs/2311.03650>
44. Ryu Tadokoro, Ryosuke Yamada, Kodai Nakashima, Ryo Nakamura, Hirokatsu Kataoka, "Primitive Geometry Segment Pre-training for 3D Medical Image Segmentation", British Machine Vision Conference (BMVC), 2023 (Oral Presentation), URL: <https://papers.bmvc2023.org/0152.pdf>
45. Gido Kato, Yoshihiro Fukuhara, Mariko Isogawa, Hideki Tsunashima, Hirokatsu Kataoka, Shigeo Morishima, "Scapegoat Generation for Privacy Protection from Deepfake", International Conference on Image Processing (ICIP), 2023, URL: <https://arxiv.org/abs/2303.02930>
46. Yamato Okamoto, Haruto Toyonaga, Yoshihisa Ijiri, Hirokatsu Kataoka, "Constructing Image-Text Pair Dataset from Books", ICCV 2023 Workshop on Towards the Next Generation of Computer Vision Datasets: DataComp Track, 2023, URL: <https://arxiv.org/abs/2310.01936>
47. Shuhei Yokoo, Peifei Zhu, Yuchi Ishikawa, Mikihiro Tanaka, Masayoshi Kondo, Hirokatsu Kataoka, "Leveraging Image-Text Similarity and Caption Modification for the Datacomp Challenge: Filtering Track and BYOD Track", ICCV 2023 Workshop on Towards the Next Generation of Computer Vision Datasets: DataComp Track, 2023, URL: <https://arxiv.org/abs/2310.14581>
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50. Peifei Zhu, Genki Osada, Hirokatsu Kataoka, Tsubasa Takahashi, "Frequency-aware GAN for Adversarial Manipulation Generation", International Conference on Computer Vision (ICCV), 2023, URL: https://openaccess.thecvf.com/content/ICCV2023/html/Zhu_Frequency-aware_GAN_for_Adversarial_Manipulation_Generation_ICCV_2023_paper.html
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52. Yue Qiu, Yanjun Sun, Fumiya Matsuzawa, Kenji Iwata, Hirokatsu Kataoka, "Graph Representation for Order-aware Visual Transformation", IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023, URL: https://openaccess.thecvf.com/content/CVPR2023/html/Qiu_Graph_Representation_for_Order-Aware_Visual_Transformation_CVPR_2023_paper.html
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55. Risa Shinoda, Ko Motoki, Kensho Hara, Hirokatsu Kataoka, Ryohei Nakano, Tetsuya Nakazaki, Ryozi Noguchi, "A dataset and system for automated rose growth monitoring", CVPR 2023 Workshop on Women in Computer Vision, 2023.

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6. Award / Achievement

1. SICE International Young Authors Award, SII, 2025.
2. Outstanding Reviewer Award, IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2024.
3. Best Industry Paper Finalist, British Machine Vision Conference (BMVC), 2023.
4. AIST Best Paper Award, "Pre-training without Natural Images", National Institute of Advanced Industrial Science and Technology, 2023.
5. "Can Spatiotemporal 3D CNNs Retrace the History of 2D CNNs and ImageNet?" is listed as Most Cited Paper within 5 Years in CVPR (47th out of 8800+ papers), 2023. [\[Link\]](#)
6. Outstanding Reviewer Award, Asian Conference on Computer Vision (ACCV) 2022.
7. MIRU Best Student Paper Award, "Lightning-fast Virtual Try-on without Paired Data and Direct Supervision", 2021.
8. ACCV 2020 Best Paper Honorable Mention Award, "Pre-training without Natural Images", Asian Federation of Computer Vision, 2020.
9. AIST Best Paper Award, "Can Spatiotemporal 3D CNNs Retrace the History of 2D CNNs and ImageNet?", National Institute of Advanced Industrial Science and Technology, 2020.
10. MIRU Best Student Paper Award, "Dynamic Fashion Cultures", 2017.
11. Best Presentation Award, "Extended CoHOG and Particle Filter by Improved Motion Model for Pedestrian Active Safety", IEEE IECON 2012, 2012.

7. Press

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6. "AIの学習、写真使わず人工図形で 権利リスクや手間軽減", 日本経済新聞, 2023年6月20日. (<https://www.nikkei.com/article/DGXZQOCD13C0C0T10C23A6000000/>)
7. "産総研の人工知能研究センターが研究開発した画像認識AI、利用開発が拡大中", マイナビニュース, 2023年6月15日. (<https://news.mynavi.jp/techplus/article/20230615-2704386/>)
8. "大量の実画像データの収集が不要なAIを開発ー数式からAIが自動学習、人の判断を経た学習と同程度以上の認識精度を実現ー", NEDO/産総研 プレスリリース, 2022年6月13日. (https://www.aist.go.jp/aist/j/press_release/pr2022/pr20220613/pr20220613.html)
9. "フラクタルでAIを訓練、産総研などがデータセットに代わる新提案", MIT Technology Review, 2021年2月12日. (<https://www.technologyreview.jp/s/234371/fractals-can-help-ai-learn-to-see-more-clearly-or-at-least-fairly/>)
10. "Unlimited computer fractals can help train AI to see", MIT Technology Review, 2021年2月4日. (<https://www.technologyreview.com/2021/02/04/1017486/fractals-ai-learn-see-more-ethically-bias-imagenet-training/>)
11. "コンピュータービジョン(CV)の動向2021", 技術評論社 (gihyo.jp), 2021年1月4日. (<https://gihyo.jp/dev/column/newyear/2021/computer-vision-trends>)
12. "論文を読むこととは、cvpaper.challengeが見据える先は", AI-SCHOLAR, 2020年11月18日. (<https://ai-scholar.tech/articles/interview/cvpaper.challenge0>)

9. Invited Talks (Within 3 years)

1. [Research talk] Mathematics of Deep Learning, ELLIS Reading Feb. 2026. [\[Link\]](#)
2. [Research talk] BMVC 2025 Workshop, Nov. 2025. [\[Link\]](#)
3. [Research talk] Google DeepMind Zurich, Jul. 2025. [\[Link\]](#)
4. [Research talk] MaVi Seminar, University of Bristol, Apr. 2025. [\[Link\]](#)
5. [Research talk] Fundamental AI Research (FunAI) Lab, Dec. 2024.
6. [Research talk] Visual Geometry Group (VGG), University of Oxford, Nov. 2023. [\[Link\]](#) [\[Slide\]](#)
7. [Research talk] Video and Image Sense Lab (VIS Lab), University of Amsterdam, Nov. 2023. [\[Link\]](#) [\[Slide\]](#)
8. [Keynote talk] International Workshop on Frontiers of Computer Vision (IW-FCV 2023), Feb. 2023. [\[Link\]](#) [\[Slide\]](#)
9. [Research talk] Sinha Lab, MIT, Feb. 2023. [\[Link\]](#) [\[Slide\]](#)

10. Academic services

- Associate Editor
 - TPAMI 2025, 2026
- Area Chair
 - CVPR 2024, 2025, 2026
- Workshop Organizer
 - CVPR 2026 Workshop (Primary organizer in VGI, organizer in BigMAC)
 - ICCV 2025 Workshop (Primary organizer in LIMIT, Primary advisor in FOUND)
 - CVPR 2024 Workshop (Primary organizer in LIMIT)
 - ICCV 2023 Workshop (Primary organizer in LIMIT)
 - CVPR 2021 Workshop
 - ICCV 2019 Workshop
- Reviewer (International Conferences)
 - CVPR 2021, 2022, 2023
 - ICCV 2023, 2025
 - ECCV 2022, 2024
 - AAAI 2019, 2020
 - NeurIPS 2022, 2023, 2025
 - WACV 2021, 2022, 2023, 2024 (Outstanding Reviewer Award)
 - ACCV 2020, 2022 (Outstanding Reviewer Award), 2024
 - ICRA 2021, 2022, 2023, 2024, 2025
 - IROS 2018, 2019, 2020, 2021, 2022, 2023, 2025
- Reviewer (Journals)
 - International Journal of Computer Vision (IJCV)
 - Pattern Recognition (PR)
 - Computer Vision and Image Understanding (CVIU)

11. Students, Research Assistants, Interns & Their Achievements

✂ Writing their current known affiliation if the person is an active researcher

【Ph.D. Students】

- Yue Qiu (University of Tsukuba; w/ Yutaka Satoh) – Researcher at AIST
 - 1st author: ICCV 2021, Sensors 2020 x2, IROS 2020 / RA-L 2020, 3DV 2019, CVPR 2018 Workshop
- Kodai Nakashima (University of Tsukuba; w/ Yutaka Satoh) – Researcher at NEC
 - 1st author: IEEE Access 2023, AAAI 2022, CVPR 2022, ICCV 2021, ICRA 2020
 - Co-author: ICCV 2023
- Shintaro Yamamoto (Waseda University) – Researcher at Toshiba
 - 1st author: ICCV 2021, HCII 2021, Applied Science 2020
 - Co-author: WACV 2023
- Yoshihiro Fukuhara (Waseda University) – Adjunct Researcher at AIST

- 1st author: JSPE 2020
- Hideki Tsunashima (Waseda University)
 - 1st author: Sensors 2020, ICPR 2020
- Guoqing Hao (University of Tsukuba; w/ Kensho Hara) – Assistant Professor at Aoyama Gakuin University
 - 1st author: SIGGRAPH Asia 2023, IEEE Access 2023
- Ryo Nakamura (Fukuoka University)
 - 1st author: ECCV 2024, ICASSP 2024, ICCV 2023
 - Co-author: BMVC 2023 Oral, IROS 2023
- Ryosuke Yamada (University of Tsukuba) – Researcher at AIST
 - 1st author: ECCV 2024, BMVC 2023 Oral, CVPR 2023 Workshop, CVPR 2022
 - Co-author: CVPR 2023 Workshop, CVPR 2022, International Journal of Computer Vision (IJCV) 2022, IROS 2021, ACCV 2020 Best Paper Honorable Mention
- Risa Shinoda (Kyoto University) – Assistant Professor at the University of Tokyo
 - 1st author: ICCV 2023, CVPR 2023 Workshop
 - Co-author: CVPR 2023 Workshop
- Itsuki Ueda (University of Tsukuba)
 - 1st author: ECCV 2022
- Yanjun Sun (Keio University) – Researcher at SB Intuitions
 - 1st author: ICRA 2024, Sensors 2023
- Go Ohtani (Keio University)
 - 1st author: ECCV 2024
 - Co-author: IROS 2023
- Kohei Torimi (Keio University)
 - 1st author: arXiv 2025
- Yuto Shibata (Keio University)
 - 1st author: ICASSP 2025
- Shumpei Takezaki (Kyushu University / DFKI)

【Master/Undergraduate/High-school Students】

- Soma Shirakabe (University of Tsukuba w/ Yutaka Satoh)
 - Co-author: ECCV 2016 Workshop Brave New Idea
- Yun He (University of Tsukuba w/ Yutaka Satoh)
 - 1st author: ECCV 2016 Workshop Brave New Idea
- Yudai Miyashita (Tokyo Denki University)
 - Co-author: PRMU 2015 Invited Talk
- Fangge Chen (University of Tsukuba w/ Yutaka Satoh)
 - 1st author: ICDAR 2017
 - Co-author: CVPR 2018 Workshop
- Shuhei Ohki (University of Tsukuba w/ Yutaka Satoh)
 - 1st author: ICPR 2018
- Teppei Suzuki (Keio University) – Researcher at SB Intuitions
 - Co-author: ICRA 2020
- Kaori Abe (Tokyo Denki University)
 - 1st author: MIRU 2017 Best Student Paper Award
- Shinichiro Morita (Tokyo Denki University)
- Tomoyuki Suzuki (Keio University) – Researcher at CyberAgent
 - 1st author: CVPR 2018
- Naofumi Akimoto (Keio University) – Researcher at Sony
 - 1st author: SIGGRAPH Asia 2018 Poster
- Hiroaki Aizawa (Gifu University) – Assistant Professor at Hiroshima University
 - 1st author: WACV 2021, ICPR 2020
- Kazushige Okayasu (Tokyo Denki University)
 - Co-author: International Journal of Computer Vision (IJCV) 2022, AIST Best Paper 2022FY, ACCV 2020 Best Paper Honorable Mention
- Munetaka Minoguchi (Tokyo Denki University)

- Co-author: SSII 2020 Invited Talk, HCII 2020, CVPR 2019 Workshop, CVPR 2018 Workshop
- Yuchi Ishikawa (Keio University)– Researcher at LY Corp.
 - 1st author: WACV 2021
 - Co-author: ICIP 2021, CVPR 2021 Workshop
- Seito Kasai (Keio University)
 - 1st author: ICIP 2021
 - Co-author: WACV 2021
- Tenga Wakamiya (Tokyo Denki University w/ Kensho Hara)
 - 1st author: CVPR 2019 Workshop, CVPR 2020 Workshop
- Asato Matsumoto (University of Tsukuba w/ Yutaka Satoh)
 - Co-author: International Journal of Computer Vision (IJCV) 2022, AIST Best Paper 2022FY, AAAI 2022, ICCV 2021 Workshop, ACCV 2020 Best Paper Honorable Mention
- Shunsuke Kogure (Keio University)
 - 1st author: AAAI 2022 Workshop
- Ryo Takahashi (Keio University)
- Ryo Hayamizu (Tokyo Denki University)
 - Co-author: ICCV 2023, CVPR 2023, MIRU 2023 Invited Talk, CVPR 2022
- Ryu Tadokoro (Tohoku University)
 - 1st author: BMVC 2023 Oral, CVPR 2023 Workshop
 - Co-author: ICASSP 2024
- Fumiya Matsuzawa (University of Tsukuba w/ Yutaka Satoh)
 - 1st author: ICRA 2022
- Shuya Takahashi (Tokyo Denki University)
 - Co-author: ICPR 2024
- Fumiya Uchiyama (The University of Tokyo)
- Erika Mori (Keio University)
 - 1st author: Sensors Journal
- Daichi Otsuka (Tokyo Denki University w/ ALLab)– Researcher at AIST
- Takumi Fukuzawa (Nagoya Institute of Technology)
- Shogo Iwakata (Waseda University)
 - 1st author: ICIP 2025
- Kohsuke Ide (University of Tsukuba)
- Chihiro Kaneko (Tokyo Denki University)
- Noritake Kodama (Yokohama National University)
 - 1st author: CVPR 2025 Workshop
- Yuto Matsuo (Tokyo Denki University)
 - 1st author: CVPR 2025 Workshop
- Ren Ohkubo (University of Tsukuba)
 - 1st author: CVPR 2025 Workshop, WACV 2026
- Kenzo Yamabuki (Wakayama National Institute of Technology – Wakayama Kosen)
- Misora Sugiyama (Jogakuin High School)
 - 1st author: ICCV 2025 Workshop