

# Satoshi Tsutsui

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<https://hellosatoshi.github.io>

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## Education

- Ph.D., School of Informatics, Computing, and Engineering, Indiana University, USA. 2021
  - Dissertation: *Rethinking the Role of Training Data for Computer Vision: Scientific Studies of Egocentric Vision*.
  - Advisors: David Crandall (committee chair) and Chen Yu (committee member).
- M.S., School of Informatics, Computing, and Engineering, Indiana University, USA. 2017
  - Advisor: Ying Ding.
- B.E. (with highest honors), Faculty of Science and Technology, Keio University, Tokyo, Japan. 2015

## Experience

- Postdoctoral Research Fellow at National University of Singapore. December 2021 - Present
  - Advisor: Mike Shou.
- Research Intern at Facebook, USA. December 2020 - June 2021
  - Mentor: Ruta Desai and Karl Ridgeway.
  - Developed visual perception algorithms for AR/VR devices.
- Visiting Student Researcher at Fudan University, China. May 2019 - August 2019
  - Mentor: Yanwei Fu.
  - Worked on few-shot visual recognition.
- Visiting Student Researcher at Peking University, China. May 2018 - August 2018
  - Mentor: Liangcai Gao.
  - Worked on computer vision for medical images.
- Research Intern at Preferred Networks, Japan. May 2017 - August 2017
  - Mentor: Tommi Kerola and Shunta Saito.
  - Developed semantic segmentation algorithms for autonomous driving.

## Publications

1. Satoshi Tsutsui, Yanwei Fu, and David Crandall. (2022). Reinforcing Generated Images via Meta-learning for One-Shot Fine-Grained Visual Recognition. *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*. *Accepted, To Appear*. (Impact Factor = 17.861).
2. Zan-Xia Jin, Mike Zheng Shou, Fang Zhou, Satoshi Tsutsui, Jingyan Qin, and Xu-Cheng Yin. (2022). From Token to Word: OCR Token Evolution via Contrastive Learning and Semantic Matching for Text-VQA. *ACM International Conference on Multimedia (ACMMM)*. (Acceptance rate =  $690/2473 = 27.9\%$ ).
3. Eric Zhongcong Xu, Zeyang Song, Satoshi Tsutsui, Chao Feng, Mang Ye, and Mike Zheng Shou. (2022). AVA-AVD: Audio-visual Speaker Diarization in the Wild. *ACM International Conference on Multimedia (ACMMM)*. (Acceptance rate =  $690/2473 = 27.9\%$ ).
4. Satoshi Tsutsui, Xizi Wang, Guangyuan Weng, Yayun Zhang, Chen Yu, and David Crandall. (2022). Action Recognition based on Cross-Situational Action-object Statistics. *International Conference on Development and Learning (ICDL)*.
5. Satoshi Tsutsui, Yanwei Fu, and David Crandall. (2021). Whose hand is this? Person Identification from Egocentric Hand Gestures. *Winter Conference on Applications of Computer Vision (WACV)*. (First round acceptance; Acceptance rate =  $496/1241 = 35.4\%$ ).

6. Satoshi Tsutsui, Ruta Desai, and Karl Ridgeway. (2021). How You Move Your Head Tells What You Do: Self-supervised Video Representation Learning with Egocentric Cameras and IMU Sensors. *International Workshop on Egocentric Perception, Interaction and Computing (EPIC)*, In conjunction with the *IEEE International Conference on Computer Vision (ICCV)*. (Extended Abstract).
7. Satoshi Tsutsui, David Crandall, and Chen Yu. (2021). Reverse-engineer the Distributional Structure of Infant Egocentric Views for Training Generalizable Image Classifiers. *International Workshop on Egocentric Perception, Interaction and Computing (EPIC)*, In conjunction with the *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. (Extended Abstract).
8. Satoshi Tsutsui, Arjun Chandrasekaran, Md Reza, David Crandall, and Chen Yu. (2020). A Computational Model of Early Word Learning from the Infant’s Point of View. *Annual Conference of the Cognitive Science Society (CogSci)*. (Oral Acceptance Rate =  $177/811 = 22\%$ ).
9. Satoshi Tsutsui, Yanwei Fu, and David Crandall. (2019). Meta-Reinforced Synthetic Data for One-Shot Fine-Grained Visual Recognition. *Advances in Neural Information Processing Systems (NeurIPS)*. (Poster Acceptance Rate =  $1428/6743 = 21\%$ ).
10. Satoshi Tsutsui, Dian Zhi, Md Reza, David Crandall, and Chen Yu. (2019). Active Object Manipulation Facilitates Visual Object Learning: An Egocentric Vision Study. *International Workshop on Egocentric Perception, Interaction and Computing (EPIC)*, In conjunction with the *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. (Extended Abstract).
11. Zheng Gao, Gang Fu, Chunping Ouyang, Satoshi Tsutsui, Xiaozhong Liu, Jeremy Yang, Christopher Gessner, Brian Foote, David Wild, and Ying Ding. (2019). edge2vec: Representation Learning Using Edge Semantics for Biomedical Knowledge Discovery. *BMC Bioinformatics*. 20(1), 306. (Impact Factor = 3.213).
12. Satoshi Tsutsui, Zheng Gao, Yuzhuo Wang, Guilin Meng, and Ying Ding. (2018). A case study on viziometrics: What’s the role of western blots in Alzheimer’s Disease literature?. *iConference*. (Poster).
13. Satoshi Tsutsui, Tommi Kerola, Shunta Saito, and David Crandall. (The first three authors have equal contribution). (2018). Minimizing Supervision for Free-space Segmentation. *Workshop on Autonomous Driving (WAD)*, In conjunction with the *Conference on Computer Vision and Pattern Recognition (CVPR)*.
14. Satoshi Tsutsui, Sven Bambach, David Crandall, and Chen Yu. (2018). Estimating head motion from egocentric vision. *ACM International Conference on Multimodal Interaction (ICMI)*.
15. Ting-Ting Liang, Mengyan Sun, Liangcai Gao, Jing-Jing Lu, and Satoshi Tsutsui. (2018). APNet: semantic segmentation for pelvic MR image. *Chinese Conference on Pattern Recognition and Computer Vision (PRCV)*.
16. Satoshi Tsutsui, and David Crandall. (2017). A data driven approach for compound figure separation using convolutional neural networks. *IAPR International Conference on Document Analysis and Recognition (ICDAR)*. (Oral Acceptance Rate =  $52/409 = 13\%$ ).
17. Satoshi Tsutsui, Guilin Meng, Xiaohui Yao, David Crandall, and Ying Ding. (2017). Analyzing Figures of Brain Images from Alzheimer’s Disease Papers. *iConference*. (Poster).
18. Satoshi Tsutsui, and David Crandall. (2017). Using artificial tokens to control languages for multilingual image caption generation. *Language and Vision Workshop*, In conjunction with the *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. (Extended Abstract).
19. Satoshi Tsutsui, Tommi Kerola, and Shunta Saito. (2017). Distantly supervised road segmentation. *Workshop on Computer Vision for Road Scene Understanding and Autonomous Driving (CVRSUAD)*, In conjunction with the *IEEE International Conference on Computer Vision (ICCV)*.
20. Baitong Chen, Satoshi Tsutsui, Ying Ding, and Feicheng Ma. (2017). Understanding the topic evolution in a scientific domain: An exploratory study for the field of information retrieval. *Journal of Informetrics*. 11(4), 1175-1189. (Impact Factor = 3.879).
21. Satoshi Tsutsui, Yi Bu, and Ying Ding. (2017). Using machine reading to understand Alzheimers and related diseases from the literature. *Journal of Data and Information Science*. 2(4), 81-94. (Impact Factor = 1.771).
22. Satoshi Tsutsui, Ying Ding, and Guilin Meng. (2016). Machine reading approach to understand Alzheimer’s disease literature. *International Workshop on Data and Text Mining in Biomedical Informatics (DTMBIO)*, In conjunction with the *ACM Conference on Information and Knowledge Management (CIKM)*.

## Awards

- NeurIPS student travel award. 2019
- ICDAR student travel award. 2017
- Scholarship for Study Abroad from Yoshida Scholarship Foundation. 2015 - 2017
- Keio University Scholarship for Excellent Undergraduate Students. 2012