

KUNIAKI SAITO

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EDUCATION

Boston University

PhD student

Boston, USA

September 2018

- Focus on research of domain adaptation for image recognition; image classification, semantic segmentation and object detection, advised by Professor Kate Saenko.

The University of Tokyo

Master of Information Science and Technology

Tokyo, Japan

March 2018

- Focus on computer science, particularly machine learning and computer vision; took classes on advanced statistical modeling, mechanisms of intelligence, and intelligence information
- Conducting research on transfer learning and multimodal learning advised by Professor Tatsuya Harada and Dr. Yoshitaka Ushiku; designed and performed research; proposed algorithm, wrote code for experiment using Python and Matlab, and authored papers on findings (publications 1-3, 5, and 6)
- Led 4-person team in Visual Question Answering (VQA) Challenge in 2016 Conference on Computer Vision and Pattern Recognition (CVPR); proposed new method for visual question answering for both real and abstract image sections; won 1st place in abstract image section and 8th place in real image section; invited to give presentation at VQA workshop
- Led 6-person team in Visual Domain Adaptation Challenge; proposed new method for domain adaptation using adversarial learning; came 4th in classification track and 6th in segmentation track (see publications 5 and 6)
- Led 5-person team in 2016 Imagenet Large Scale Visual Recognition Challenge (ILSVRC) of European Conference on Computer Vision; wrote code using Caffe for object detection; 8th (of 20+ teams) in Task 1a

Boston University

Visiting Student, Vision & Language Group, Dept. of Computer Science

Boston, USA

July-September 2017

- Organized 2.5-month research trip to work with Professor Kate Saenko on Domain Adaptation
- Participated in research to transfer knowledge from source to target domain using domain adaptation; proposed, designed, and performed experiments on image recognition, results outperformed existing methods in terms of accuracy; authored paper on findings (publication 6)
- Currently collaborating with team from Boston University on domain adaptation for image recognition

Bachelor Engineering (focused on Computer Vision)

March 2016

- GPA: 3.47; Thesis: *Semi-supervised Bayesian Canonical Correlation Analysis*
- Selected for competitive 4-month Deep Learning Seminar; met weekly to learn code for deep learning
- Member of Kendo club; practiced daily for 2 hours; won first prize in inter-university contest (2014)

RESEARCH ACTIVITIES

Domain Adaptation (DA)

DA is a branch of transfer learning. The goal is to transfer the knowledge of a label-rich domain to a label-poor domain. I especially focused on domain adaptation for visual recognition

- Authored 5 papers on domain adaptation as first author for leading conferences and online journals (publications 2, 3, 5, 6, and 7)
- Experienced in proposing new, effective methods to improve recognition accuracy in domain adaptation
- Proficient in Python, Tensorflow, and Pytorch

Visual Question Answering (VQA)

VQA is a research on multimodal learning. Given an image and question related to the image, we aim to construct a model which can provide correct answer

- Won first prize at VQA challenge (see Education)
- Proficient in Torch
- Authored paper as first author, published in ICME (publication 1)

Multimodal Retrieval

The goal of Multimodal Retrieval is to search for one modality given another modality (e.g., Given text query, retrieving image corresponding to the query)

- Key member of 4-person team constructing dataset to retrieve video of person given language query; contributed to construction of dataset and design and implementation of baseline algorithm; co-authored paper on findings (publication 4)
- Gained experience in dealing with different modalities related to image and video retrieval
- Performed research on improving algorithm for multimodal retrieval as part of undergraduate thesis

PUBLICATIONS AND PRESENTATIONS

Publications

- [1] “DualNet: Domain-Invariant Network for Visual Question Answering”, **Kuniaki Saito**, Andrew Shin, Yoshitaka Ushiku, and Tatsuya Harada, ICME, 2017
- [2] “DeMIAN: Deep Modality Invariant Adversarial Network”, **Kuniaki Saito**, Yusuke Yukuta, Yoshitaka Ushiku, and Tatsuya Harada, TASKCV Workshop at ICCV 2017
- [3] “Asymmetric Tri-training for Unsupervised Domain Adaptation”, **Kuniaki Saito**, Yoshitaka Ushiku, and Tatsuya Harada, **ICML 2017**
- [4] “Spatio-temporal Person Retrieval via Natural Language Queries”, Masataka Yamaguchi, **Kuniaki Saito**, Yoshitaka Ushiku and Tatsuya Harada, **ICCV 2017**
- [5] “Maximum Classifier Discrepancy for Domain Adaptation”, **Kuniaki Saito**, Kohei Watanabe, Yoshitaka Ushiku and Tatsuya Harada, **CVPR 2018 (oral)**
- [6] “Adversarial Regularization for Domain Adaptation”, **Kuniaki Saito**, Yoshitaka Ushiku, Tatsuya Harada and Kate Saenko, **ICLR 2018**
- [7] “Open Set Domain Adaptation by Backpropagation”, **Kuniaki Saito**, Shohei Yamamoto, Yoshitaka Ushiku and Tatsuya Harada, **ECCV 2018**
- [8] “Strong-Weak Distribution Alignment for Adaptive Object Detection”, **Kuniaki Saito**, Yoshitaka Ushiku, Tatsuya Harada and Kate Saenko, Under Review
- [9] “TWINS: Two Weighted Inconsistency-Reduced Network for Partial Domain Adaptation”, **Kuniaki Saito***, Toshihiko Matsuura* and Tatsuya Harada, Under Review

Presentations

- [1] Invited to present “Asymmetric tri-training for Unsupervised Domain Adaptation” at MIRU 2017 (Domestic Conference on Computer Vision) (assigned to senior due to schedule conflict)
- [2] Invited to present “Asymmetric tri-training for Unsupervised Domain Adaptation” at IBIS 2017 (Domestic Conference on Machine Learning) (in English)
- [3] Invited to present “Maximum Classifier Discrepancy for Unsupervised Domain Adaptation” at MIRU 2018 (Domestic Conference on Computer Vision)

AWARD AND SCHOLARSHIP

- NVIDIA Pioneering Research Awards at ICML 2017 (see Publications [3])
- UTokyo-TOYOTA Study Abroad Scholarship 2017

ADDITIONAL

- Japanese (native), English (fluent)
- Kendo enthusiast for over 14 years; reached 4-dan level (level required to be able to teach)