

Haruya Ishikawa

CONTACT INFORMATION 3-8-25 Hiyoshi haruyaishikawa@keio.jp
Yokohama, Kanagawa, Japan 223-0061 [Github](#) [LinkedIn](#)

RESEARCH INTERESTS Embodied Agents, Reinforcement Learning, Object Tracking, Semantic Segmentation

EDUCATION **Keio University**, Yokohama, Japan
Ph.D. in Computer Science (Integrated Design Engineering) April 2020 -
• Supervised by Prof. Yoshimitsu Aoki (Aoki Media Lab)

Keio University, Yokohama, Japan
M.A. in Computer Science (Integrated Design Engineering) April 2018 - March 2020
• Supervised by Prof. Yoshimitsu Aoki (Aoki Media Lab)
• Thesis: *“Active Neural SLAM: Deep Reinforcement Learning for Visual SLAM”*

Keio University, Yokohama, Japan
B.A. in Electrical Engineering and Informatics, GPA: 3.72/4.00 April 2014 - March 2018
• Supervised by Prof. Yukitoshi Sanada (Sanada Lab)
• Thesis: *“Effect of Joint Detection on System Throughput in Distributed Antenna Network”*
• Started “Keio Hackers”, a club for web programming and mentored motivated undergraduate students.

RESEARCH EXPERIENCE **Aoki Media Lab**, **Keio University**, Yokohama, Japan
Research Member April 2018 - present
Member of the research group lead by Professor Yoshimitsu Aoki
• In charge of the server infrastructure team: implemented efficient and robust server stack which is used by the members for research.
• Consulted and researched remote sensing and in-vehicle semantic segmentation models for Asahi Aero.
• Research with Honda R&D to develop methods of gathering object-human relationship through RGB and depth sensors for action recognition.

Artificial Intelligence Research Center, **AIST**, Yokohama, Japan
Computer Vision Research Assistant July 2018 - March 2020
Supervised by Ken Sakurada (Ph.D.) and Shinichi Maeda (Ph.D.)
• Developed methods for robust initialization and tracking of Visual SLAM for “look-around” agents using reinforcement learning.
• Organized and presented for the 3DCV organization.

Sanada Laboratory, **Keio University**, Yokohama, Japan
Research Member April 2017 - Mar 2018
Supervised by Professor Yukitoshi Sanada
• Research network scheduling for Distributed Antenna Systems used in 5th generation wireless communication protocol.

PUBLICATIONS (INTERNATIONAL) **Haruya Ishikawa**, Masaki Hayashi, Trong Phan, Kazuma Yamamoto, Makoto Masuda, Yoshimitsu Aoki, “Analysis of Recent Re-Identification Architectures for Tracking-by-Detection Paradigm in Multi-Object Tracking,” *16th International Conference on Computer Vision Theory and Applications*, 2021.

Haruya Ishikawa, Yuchi Ishikawa, Shuichi Akizuki, Yoshimitsu Aoki, "Human-Object Maps for Daily Activity Recognition," *16th International Conference on Machine Vision Applications*, 2019. (Oral)

Haruya Ishikawa, Yukitoshi Sanada, "Effect of Joint Detection on System Throughput in Distributed Antenna Network," *IEICE Trans. on Communications*, Vol. E102-B, NO. 3, pp. 641-647, 2019.

Haruya Ishikawa, Yukitoshi Sanada, "System Throughput Analysis on Using Joint Detection in Distributed Antenna System," *IEEE 88th Vehicular Technology Conference 2018 Fall*, 2018.

RECOGNITIONS	Research Fellowship for Young Scientists DC1 Japan Society for Promotion of Science (JSPS)	2020 - 2023
	JEES Mitsui Corporation Science and Technology Scholarship, Keio University	2022 - 2023
	JGC-S Scholarship, Keio University	2019 - 2020
	Keio University Scholarship, Keio University	2019 - 2020
	Young Researchers' Encouragement Award, IEEE VTS Japan Chapter 2018	2018

WORK EXPERIENCE **NVIDIA**, Tokyo Japan

Deep Learning Hands-on Teaching Assistant October 2016 - September 2018

- Teaching assistant for the GTC events hosted by NVIDIA and supported by MEXT (Ministry of Education, Culture Sports, Science and Technology).
- Became a certified CUDA developer.

Graffiti Inc., Tokyo Japan

iOS Developer August 2017 - June 2018

- Developed iOS application called "**GRAFFITY**" which lets users create and share AR experiences. The app made top 15 on the Apple App Store and was reviewed on famous news outlets such as Zip! and Trendy.
- One of my main responsibilities were designing and implementing AR UI/UX for the camera using ARKit and Vision frameworks.
- 0 to 1 development for rapid hypothesis testing in the market.
- Worked on techniques for fast and robust re-localization for seamless user experience.

Intel Corporation Japan, Tokyo Japan

Computer Vision Internship March 2017 - August 2017

- Developed object tracking application using Intel's Computer Vision SDK.
- Developed and created documentation for classic object and face detection algorithms using C++ to be included in the SDK.
- Published documentation for Japanese clients and users for the SDK.

DIP Corporation, Tokyo Japan

AI Internship February 2017 - May 2017

- Implemented scholarly paper search using arxiv API called "Scholar.AI" which was the first AI related scholarly paper search engine in Japan.
- Developed a system classify papers based on text using NLP.

Recruit Holdings Co., Ltd, Tokyo Japan

- Was part of the Brain Portal (Dept. of Media Technology Laboratory) team which specializes in supporting hardware startups around the world.
- My responsibilities were to develop software to gather and analyze possible clients and manufacturers by automating the search process using web crawlers.
- Gathered and analyzed more than 8,000 hardware startups and 15,000 manufacturers.
- Utilized Python for data mining and data analysis.
- Developed applications to support the customer success team by visualizing the gathered data to Google Sheets API.

ABEJA, inc., Tokyo Japan

UI/UX Engineer Internship

July 2016 - September 2016

- My main responsibilities were to design client application aimed at fashion industries to visualize sales and to develop a prototype using Vue.js framework.

PROJECTS

Equilib [\[Code\]](#)

Equirectangular (360/panoramic) image processing library for Python (Pytorch and numpy) with minimal dependencies. Implemented various grid sampling techniques.

PyEdgeEval [\[Web\]](#)

Edge detection benchmark and toolkit. Prior benchmark code for BSDS500 requires MATLAB and the codebase is not extensible for other datasets and tasks. This libraries solves this issue by using only FOSS dependencies while running more efficient.

GRAFFITY [\[Review\]](#)

AR social media application that lets user share AR experience with people around the world. iOS application created with Swift and ReactNative.

TECHNICAL SKILLS

- **Programming Language:** Python, C/C++, CUDA, Javascript, Swift, C#, MATLAB
- **Machine Learning Frameworks:** PyTorch, Numpy, Pandas, Scikit-Learn
- **Development Environment:** Linux (ubuntu), macOS, Windows
- **Development Tools:** (neo)vim, vscode, docker, unity, ROS
- **Applications:** Blender, Photoshop, Illustrator, MS Office