Shun Iwase

Master · School of Computer Science, Robotics

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Education

Tokyo Institute of Technology — *Tokyo, Japan*

Bachelor of Engineering, Electrical Engineering — *Apr. 2014 - Mar. 2018*

- GPA: 3.55 / 4.00
- Exchange Student at Georgia Tech, Mar. 2017

Tokyo Institute of Technology — *Tokyo, Japan*

Master of Computer Science — *Apr. 2018 -*

- GPA: 4.00 / 4.00
- Master Thesis: Epipolar-Guided Deep Object Matching for Scene Change Detection
- Exchange Student at Carnegie Mellon University, Oct 2019. - Mar. 2020
- Graduated top of the computer science course

Carnegie Mellon University — *Pittsburgh, USA*

Master of Computer Science, Robotics — *Aug. 2020 -*

- Research interest: 3D Object Detection, 3D Human Pose Estimation, Reinforcement Learning, Imitation Learning, Inverse Reinforcement Learning

Work Experience

Techouse, Inc. — *Tokyo, Japan*

Engineering Intern — *Aug. 2014 - Aug. 2015*

- Developed an internship recruiting media (JEEK) with Ruby on Rails

SORACOM, inc. — *Tokyo, Japan*

Engineering Intern — *Sep. 2015 - Aug. 2017*

- Developed a data analysis system
- Developed a web console of SORACOM Air with AngularJS
- Developed a sandbox environment of backend infrastructures to automate all internal tests

Axon, Inc. — *Tokyo, Japan*

Founder / CEO — *Jun. 2016 - Aug. 2020*

- Developed a game title prediction system using screen shots - Mirrativ, inc.
- Developed a paper analysis system (Fukan System) - Sakata Mori Laboratory at The University of Tokyo
- Developed a frontend and backend of a video web media with ReactJS and Go - Babel, inc.
- Developed a smartphone application (SIZLY) with ReactNative - Aisaac, inc.
- Developed Go-lang based backend infrastructures for LIPS (https://lipscosme.com)
- Developed a glasses try-on application without taking off glasses (Megane on Megane) for JINS, inc.

AIST AIRC — *Tokyo, Japan*

Research Assistant — *Oct. 2018 - Oct. 2019*

- Researched change detection of street city images

Telexistence, inc. — *Tokyo, Japan*

R&D Intern — *Apr. 2019 - Oct. 2019*

- Created a large-scale synthetic 3D object detection dataset with Unreal Engine 4
- Researched and developed a 3D object detection network which can be trained only with synthetic data

Fixstars, inc. — *Tokyo, Japan*

Engineering Intern — *Aug. 2019*

- Researched deep learning based model compression

Projects & Research Experience

TITAMAS, Tokyo Institute of Technology *Tokyo, Japan*

Lead Engineer *Apr. 2018 - Mar. 2020*

- Developed a smart white cane for visually impaired people which can detect obstacles and its distance in real-time
- Link to an introduction video: https://www.youtube.com/watch?v=IPwSHgdlTRA
- Microsoft Imagine Cup Japan 2017 Grand Prize (1%), Mar 2017
- Microsoft Imagine Cup World 2017 BEST 32, Aug 2017
- JPHacks 2016 (one of the largest hackathon in Japan), a Grand Prize and collected an array of awards, the AbemaTV Award, Softbank Award, Mitsubishi UFJ Morgan Stanley Securities Award (1st out of 89 teams), Oct 2016
- Mashup Awards 2016 Student Division 1st prize, Dec 2016

Tokyo Institute of Technology, Rio Yokota Lab; AIST AIRC *Tokyo, Japan*

Research Assistant *Apr. 2018 - Mar. 2020*

- Developed a web-based object-level change annotation tool with ReactJS
- Created the first large-scale synthetic change detection dataset with Unreal Engine 4
- Developed a hyper-parameter optimization library for a distributed GPU cluster (https://polaris.readthedocs.io)

Carnegie Mellon University, Kris Kitani Lab *Pittsburgh, USA*

Visiting Researcher *Oct. 2019 - Mar. 2020*

- Researched 3D object detection using a monocular/stereo RGB image
- Researched 3D human pose estimation

Publications

Shun Iwase, Xingyu Liu, Rawal Khirodkar, Rio Yokota, Kris Kitani
RePOSE: Iterative Rendering and Refinement for 6D Object Pose Estimation, ICCV 2021

Xingyu Liu, Shun Iwase, Kris Kitani
StereOBJ-2M: Large-scale Stereo Image Dataset for 6D Object Pose Estimation, ICCV 2021

Xingyu Liu, Shun Iwase, Kris Kitani
KDFNet: Learning Keypoint Distance Field for 6D Object Pose Estimation, IROS 2021

Zhengyi Luo, Ryo Hachiuma, Ye Yuan, Shun Iwase, Kris M. Kitani
Kinematics-Guided Reinforcement Learning for Object-Aware 3D Ego-Pose Estimation, Arxiv Preprint 2020

Kento Doi, Ryuhei Hamaguchi, Shun Iwase, Rio Yokota, Yutaka Matsuo, Ken Sakurada
Epipolar-Guided Deep Object Matching for Scene Change Detection, Arxiv Preprint 2020

Hiroki Naganuma, Shun Iwase, Rio Yokota
Verification of the Reducing the Number of Iterations in Large Mini-Batch Training by Applying Mixup, xSig 2019

Shun Iwase, Ken Sakurada
Object-based Scene Change Detection Considering Change Categories, MIRU 2019 (Oral)

Hiroki Naganuma, Shun Iwase, Linsho Kaku, Hikaru Nakata, Rio Yokota
Hyperparameter Optimization of Large Scale Parallel Deep Learning using Natural Gradient Approximation Method, FIT 2018

Honors and Awards

2020-2022 **Fellowship**, Yoshida Scholarship Foundation Graduate Research Fellowship
Oct. 2017 **Award**, Tokyo Tech Award for Student Leadership (less than 1%, 5 out of about 4000 students)
Mar. 2017 **Award**, Incentive Award of the Dean of the School of Computing at Tokyo Institute of Technology
2017 - 2018 **Scholarship**, Kuma Scholarship Foundation
Aug. 2016 **Internship**, DeNA summer business intern 1st prize (1st out of 12 teams)

Skills

Programming Python (6 years), C++ (2 years), CUDA(2 years), Javascript (4 years), Go (2 years), Ruby (2 years), SQL
DevOps Docker, AWS, GCP, Github
Softwares Vim, Unreal Engine 4, Blender, Maya, MATLAB, Adobe Illustrator