Kentaro Wada

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Date of birth: 31st January 1994 • Nationality: Japan

EDUCATION

University of Tokyo, Tokyo, Japan — *April 2012 – Present*
MS in Information Science and Technology
BE in Mechano-Informatics
Advisor: Prof. Masayuki Inaba, Associate Prof. Kei Okada.

PORTFOLIO

wkentaro.com
Extensive listing of research projects.

RESEARCH EXPERIENCE

JSK Robotics Laboratory, The University of Tokyo

- Graduate Research Student, Computer Science Department — October 2016 – Present
  - Project: Study of Robotic Manipulation with Learning for Object Segmentation (Master Thesis)
  - Supervisors: Prof. Masayuki Inaba and Associate Prof. Kei Okada
  - Focus: Deep Learning, 3D Vision, Robotic Manipulation
- Research Assistant — October 2015 – March 2017
  - Project: Picking General Objects with Verification-based Vision System
  - Supervisors: Associate Prof. Kei Okada
  - Focus: Deep Learning, 3D Vision, Robotic Manipulation
- Undergraduate Research Student, Engineering Department — April 2015 – March 2016
  - Project: Learning for Picking through Experience of Verification-based Perception System (Bachelor Thesis)
  - Supervisors: Prof. Masayuki Inaba and Associate Prof. Kei Okada
  - Focus: Deep Learning, 3D Vision, Robotic Manipulation

Tanaka Kenji Laboratory, The University of Tokyo

- Research Assistant — May 2014 – March 2015
  - Project: Customer Clustering with Big Data Analysis of Purchase History
  - Supervisors: Associate Prof. Kenji Tanaka
  - Focus: Machine Learning, Data Mining

PUBLICATIONS

JOURNALS

[7] K. Wada, I. Yanokura, M. Sugiura, Y. Inagaki, K. Okada, and M. Inaba, "Pick-and-Verify: Verification-based Highly Reliable Picking System for Various Target Objects in Clutter", *Journal of Advanced Robotics*, March 2017.

INTERNATIONAL CONFERENCES

[14] K. Wada, S. Hasegawa, S. Kitagawa, Y. Uchimi, N. Yamaguchi, K. Okada, and M. Inaba, "Few-shot Learning based on Context-aware Network Expansion with Artificial Training Data for Picking in Warehouse Automation", in *Proceedings of the 2018 IEEE International Conference on Robotics and Automation (ICRA2018)*, (Under Review)

[9] K. Wada, K. Okada, and M. Inaba, "Probabilistic 3D Multilabel Real-time Mapping for Multi-object Manipulation", in *Proceedings of the 2017 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS2017)*, Vancouver, Canada. September 2017.

[8] S. Hasegawa, K. Wada, Y. Niitani, K. Okada, and M. Inaba, "A Three-Fingered Hand with a Suction Gripping System for Picking Various Objects in Cluttered Narrow Space", in *Proceedings of the 2017 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS2017)*, Vancouver, Canada. September 2017.

[6] K. Wada, M. Murooka, K. Okada, and M. Inaba, "3D Object Segmentation for Shelf Bin Picking by Humanoid with Deep Learning and Occupancy Voxel Grid Map", in *Proceedings of the 2016 IEEE-RAS International Conference on Humanoid Robotics (Humanoids 2016)*, Cancun, Mexico. November 2016.

[5] Y. Furuta, K. Wada, M. Masaki, S. Nozawa, Y. Kakichi, K. Okada and M. Inaba, "Transformable Semantic Map Based Navigation using Autonomous Deep Learning Object Segmentation", in *Proceedings of the 2016 IEEE-RAS International Conference on Humanoid Robotics (Humanoids 2016)*, Cancun, Mexico. November 2016.

DOMESTIC CONFERENCES

[10] K. Wada, K. Okada and M. Inaba, "Fully Convolutional Object Depth Prediction for 3D Segmentation from 2.5D Input", in *Annual Conference of the Japanese Society for Artificial Intelligence 2017*, Aichi, Japan. May 2017.

[11] M. Murooka, Y. Niitani, K. Wada, S. Nozawa, Y. Kakiuchi, K. Okada and M. Inaba, "Motion Prediction of Object in Image by Deep Learning for Robot Manipulation", in *Annual Conference of the Japanese Society for Artificial Intelligence 2017*, Aichi, Japan. May 2017.

[12] S. Kitagawa, K. Wada, K. Okada and M. Inaba, "Learning-based Task Failure Prediction and Selective Execution of Dual-arm Support Motion for Stowing Task", in *Annual Conference of the Japanese Society for Artificial Intelligence 2017*, Aichi, Japan. May 2017.

[13] S. Hasegawa, K. Wada, K. Okada and M. Inaba, "Development of Suction Pinching Hand for Picking Task in Narrow Space", in *2017 JSME Conference on Robotics and Mechatronics*, Fukushima, Japan. May 2017.

[4] Y. Niitani, K. Wada, S. Hasegawa, S. Kitagawa, M. Bando, K Okada, and M Inaba, "Semantic Image Segmentation and 3D Object Outline Extraction with Deep Learning for Picking Objects from Shelf-bin", in *Annual Conference of The Robotics Society of Japan*, Yamagata, Japan. September 2016.

[3] K. Wada, K. Okada and M. Inaba, "Advanced Multi-layered Perception for Picking in Clutter with Parameter Reinforcement Learning via Experiment in Task" (in Japanese), in *The Robotics and Mechatronics Conference 2016*, Kanagawa, Japan. June 2016.

[2] K. Wada, I. Yanokura, M. Sugiura, Y. Inagaki, K. Okada and M. Inaba, "Daily Object Picking System with Visual Verification and Vacuum Gripper on Dual-arm Robot" (in Japanese), in *Annual Conference of Robotics Society Japan 2015*, Tokyo, Japan. March 2015.

[1] K. Wada, K. Kawakami, Y. Honda, K. Tanaka, "Customer Clustering with Big Data Analysis of Purchase History" (in Japanese), in *Japanese Artificial Intellicence Conference, SIG-KST 23th*, Tokyo, Japan. November 2014.

PROFESSIONAL AFFILIATIONS & ACTIVITIES

Amazon Robotics Challenge 2017, Nagoya, Japan
- K. Wada, S. Hasegawa, S. Kitagawa, Y. Uchimi, N. Yamaguchi, K. Okada and M. Inaba
- 12th/13th place in 16 teams for pick/stow tasks.
- A core member the team composed of 5 students and 2 professors.
- Especially worked for object recognition. April 2017 – July 2017

Amazon Picking Challenge 2016, Leipzig, Germany
- K. Wada, S. Hasegawa, S. Kitagawa, Y. Niitani, M. Bando, K. Okada and M. Inaba
- 5th/8th place in 16 teams for pick/stow tasks.
- A core member of the team composed of 5 students and 2 professors.
- Especially worked for object recognition. April 2016 – July 2016

Google Summer of Code 2016, Tokyo, Japan
- K. Wada, F. Proctor, S. Edwards
- Student, Passed the Final Evaluation May 2016 – August 2016

Amazon Picking Challenge 2015, Seattle, USA
- K. Wada, I. Yanokura, M. Sugiura, Y. Inagaki, K. Okada and M. Inaba
- 8th place in 28 teams.
- A core member of the team composed of 4 students and 2 professors.
- Worked for object recognition and robotic manipulation. October 2014 – May 2015

OTHER WORK EXPERIENCE

Donuts Co. Ltd., Tokyo, Japan
- Internship as a system integrator September 2013 – January 2014
  - Frontend of e-commerce site with HTML, CSS and Javascript.
  - Posting system construction with PHP.

Honda Research Institute, Tokyo, Japan
- Internship as a researcher August 2014 – September 2014
  - Road scene recognition with deep learning

LANGUAGES
- Japanese: Native language.
- English: Fluent (listening, speaking, reading, writing).
- Chinese: Basic (listening, speaking, reading, writing).

SKILLS
- Programming Languages: Python, C++, C, Bash, Zsh, HTML, CSS, Javascript, PHP, Lisp
- Frameworks: Chainer, Caffe, scikit-learn, ROS, PCL, OpenCV, scikit-image, flask

INTERESTS

Deep learning, Scene understanding, 3D reconstruction, Real-time vision system.

REFERENCES

- **Professor Masayuki Inaba**
  Professor of Mechano-Informatics Department
  The University of Tokyo
  73A1, Engineering Building NO. 2, 7-3-1, Hongo, Bunkyo-ku, Tokyo, 1138656, Japan
  inaba@jsk.imi.i.u-tokyo.ac.jp • +81 (3) 5841-7416

- **Associate Professor Kei Okada**
  Associate Professor of Mechano-Informatics Department
  The University of Tokyo
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[*CV compiled on 2017-11-28*]