Yuki Furuta

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Nationality: **Japanese**
Date of Birth: **8/11/1990**
Place of Birth: **Tochigi, Japan**
Linkedin: **https://www.linkedin.com/in/furushchev**
GitHub: **https://github.com/furushchev**
Website: **https://furushchev.ru/**

Education

04/2016 - Present **University of Tokyo, Tokyo, Japan**
PhD. Student - Robotics, Cognitive Robot System with Long-Term Episodic Memory

04/2014 - 03/2016 **University of Tokyo, Tokyo, Japan**
MSc. in Robotics, focusing on Self-improving Robot Action Management System

04/2010 - 03/2014 **University of Tokyo, Tokyo, Japan**
BSc. in Engineering, focusing on Preemptive Robot Behavior for Home Assistant Robots

Work Experience

04/2014 - 03/2016 **Software Engineer, Fove Inc., Japan**
Software engineer for research and development of fast and accurate gaze tracking system embedded in the eye tracking head mount display

04/2014 - 03/2016 **Software Engineer, Oktal Japon Inc, Japan**
Software engineer for research and development of modules for ADAS (Advanced Driver Assistive Systems) and AFS (Adaptive Front-lighting System) using vehicle simulator environment

02/2015 - 03/2015 **Data Analytics and Research Internship, Recruit Holdings Inc, Japan**
Intern in the data analytics and research group, working on analysis and recommendations based on user preferences

10/2014- -02/2015 **Internship, Prediction.IO, California, US**
Under an internship program from Facebook Inc, I worked on development of content-based recommendation engine on the top of distributed machine learning architecture

01/2014- -12/2014 **Software Engineer, coromo Inc., Japan**
Software engineer, working on development of iOS application for intelligent customized home screen.

04/2011 - 03/2013 **Software Engineer, Unipro Inc., Japan**
Software engineer, leader in iOS mobile application development team where more than 10 apps are released. Research and deleopment of fast and high memory efficient mono-camera object recognition engine optimized for smartphones.

Research and Project Experience

05/2017 - 08/2017 **Google Summer of Code 2017 Mentor, JSK Robotics Lab., Japan**
As GSoC 2017 project, I worked the project “Knowledge and Learned Model Exchange Between Robotic Agents using openEASE” with Asil Kaan Bozcuoğlu from IAI at the University of Bremen. We tried to exchange static ontologies and transfer skills between PR2s both at our lab. and at IAI lab through experiments.

04/2016 - 02/2017 **International German-Japanese Joint Research Program on Self-reconfigurable Knowledge and Knowledge Acquisition of Daily Assistive Robots, The Institute of Artificial Intelligence at University of Bremen, Bremen**

Under supervision of Prof. Kei Okada and Prof. Michael Beetz, I worked on developing robotic system with self-reconfigurable knowledge focusing on:

- Collaboration with Germany roboticist on integrating Episodic Memory Logging System with Daily Assistive Robots
- Integration of Logging and Visualization for Self-reconfigurable Robot Knowledge
- Development of Learning-enabled Personalized Task Planning System

04/2016 - 09/2016 **Research Assistant, University of Tokyo, Japan**

Research Assistant for the following project: Research on Framework for Acquisition of Robot Task based on Attention Observation for Home Assistive Robots

04/2016 - Present **Context-aware Intelligent Physical System for Personalized Robots based on Learning of Personal Experiences from Cognitive Behaviors, University of Tokyo, Japan**

Working on development of robotic framework for personalized robot behaviors using experiences logged through early task performances

04/2015 - 03/2016 **Research and Development on Transparent Continuous System Integration of Robot Intelligent Software, University of Tokyo, Japan**

Working on development of transparent continuous integration for robotic software components using techniques of continuous testing framework and simulation

06/2015 **DARPA Robotics Challenge, University of Tokyo, Japan**

As a member of team from JSK Robotics Lab. at University of Tokyo, I participated the DARPA Robotics Challenge. I worked there on development of communication modules for robot teleoperation under low-bandwidth and unreliable environment

Skills

Languages:

Japanese: native

English: fluent

Russian: working knowledge

Robots:

PR2 (Willow Garage Inc.)

fetch (fetchrobitics Inc.)

HSR (Toyota Motors Corporation)

Pepper (Softbank Robotics Inc.)

Programming: C, C++, Python, Lisp, Objective-C, Swift, Go, C#

Publications

Yuki Furuta, Yohei Kakiuchi, Hiroyuki Mikita, Ryohei Ueda, Kei Okada, and Masayuki Inaba. **"Onsite interruptable action management system on daily assistant robot"**. In *2014 JSME Conference on Robotics and Mechatronics*, pages 1P2–Q06, may 2014.

Kanae Kochigami, Yuto Inagaki, Yuki Furuta, Ryohei Ueda, Yohei Kakiuchi, Kei Okada, and Masayuki Inaba. "具体的操作期の子供との対話を目指した視聴覚対話協調システムに関する研究". In *The 32th Annual Conference on Robotics Society of Japan*, pages 1C3–08, sep 2014.

Ryohei Ueda, Masaki Murooka, Yu Ohara, Iori Kumagai, Ryo Terasawa, Yuki Furuta, Kunio Kojima, Tatsuhi Karasawa, Fumihito Sugai, Satoshi Iwaishi, Shunichi Nozawa, Yohei Kakiuchi, Kei Okada, and Masayuki Inaba. **"Humanoid integrated ui system for supervised autonomy with massive data visualization over narrow and unreliable network communication for drc competition"**. In *Proceedings of the 2015 IEEE-RAS International Conference on Humanoid Robots (Humanoids 2015)*, pages 797–804, November 2015.

Satoshi Otsubo, Yuki Furuta, Yuto Inagaki, Kazuhiro Sasabuchi, Masaki Murooka, Yohei Kakiuchi, Kei Okada, and Masayuki Inaba. "動力学シミュレータを用いたホームアシスタントロボットによる家事支援タスク遂行". In *The 33th Annual Conference on Robotics Society of Japan*, pages 1J3–06, sep 2015.

Hitoshi Kamada, Yuki Furuta, Yohei Kakiuchi, Kei Okada, and Masayuki Inaba. **"Realization of concurrent robot motion from motion phase shift based on covariance of recognition results under home robots"**. In *2015 JSME Conference on Robotics and Mechatronics*, pages 1P2–T10, may 2015.

Hitoshi Kamada, Yuki Furuta, Ryohei Ueda, Yohei Kakiuchi, Kei Okada, and Masayuki Inaba. **"Realization of parallel execution of robot motions by motion controlling based on reliability of recognition results**

under home robots". In *Proceedings of the 16th SICE System Integration Division Annual Conference*, pages 2625–2630, Dec 2015.

Yuki Furuta, Kentaro Wada, Masaki Murooka, Shunichi Nozawa, Yohei Kakiuchi, Kei Okada, and Masayuki Inaba. **"Transformable semantic map based navigation using autonomous deep learning object segmentation"**. In *Proceedings of the 2016 IEEE-RAS International Conference on Humanoid Robots (Humanoids 2016)*, pages 614–620, November 2016.

Yuki Furuta, Yuto Inagaki, Kei Okada, and Masayuki Inaba. **"Self-improving robot action management system with probabilistic graphical model based on task related memories"**. In *Proceedings of the 14th International Conference on Intelligent Autonomous Systems*, pages 811–823, 5 2016.

Hitoshi Kamada, Yuki Furuta, Yohei Kakiuchi, Kei Okada, and Masayuki Inaba. **"Realization of concurrent robot motion from motion phase shift based on covariance of recognition results under home robots"**. JSME Fellow Award for Outstanding Young Engineers, ROBOMEC2015, 2016.06.09.

Yuki Furuta, Kazuhiro Sasabuchi, Yusuke Niitani, Kotaro Nagahama, Hiroaki Yaguchi, Kei Okada, and Masayuki Inaba. **"Bring me manju from the drawer: Task acquisition framework under incompleteness and ambiguity using interaction and semantic knowledge-enabled perception"**. In *2017 IEEE/RSJ IROS Workshop Machine Learning Methods for High-Level Cognitive Capabilities in Robotics*, 2017.

Yuki Furuta, Kazuhiro Sasabuchi, Yusuke Niitani, Kotaro Nagahama, Hiroaki Yaguchi, Kei Okada, and Masayuki Inaba. **"Bring me manju from the drawer: Task acquisition framework under incompleteness and ambiguity using interaction and semantic knowledge-enabled perception"**. 2018.

Muku Takeda, Yuki Furuta, Kotaro Nagahama, Hiroaki Yaguchi, and Masayuki Inaba. **"**生活支援ロボットにおける類似物探索による日用品収納行動に関する研究**"**. In *The 35th Annual Conference on Robotics Society of Japan*, pages 1I2–02, sep 2017.

Muku Takeda, Yusuke Niitani, Yuki Furuta, Kotaro Nagahama, Hiroaki Yaguchi, Kei Okada, and Masayuki Inaba. **"Tiding up a shelf by recognition of storage organizing method at home environment"**. In *Proceedings of the 18th SICE System Integration Division Annual Conference*, Dec 2017.

Asil Kaan Bozcuoglu, Gayane Kazhoyan, Yuki Furuta, Simon Stelter, Michael Beetz, Kei Okada, and Masayuki Inaba. **"The exchange of knowledge using cloud robotics"**. *IEEE Robotics and Automation Letters*, 2018.

Awards

04/2017 - 03/2019 **JSPS Research Fellow**, *Japan Student Services Organization*

03/2018 **Best Achievement Award**, *HSR User Meeting 2018*

07/2016 **NEC Future AI Scholarship**, *NEC / University of Tokyo*

03/2016 **Repayment Exemption for Students with Excellent Grades**, *Japan Student Services Organization*

12/2014 **Company Award**, *JPHACKS Competition 2014*