

Yunduan Cui

Nara Institute of Science and Technology,
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EXPERIENCE

2019 March - present

Researcher

Robot Learning Laboratory

Nara Institute of Science and Technology, Japan

2017 October - 2019 March

Research Assistant Professor

Intelligent System Control Laboratory

Nara Institute of Science and Technology, Japan

2015 April - 2017 September

Research Assistant

Intelligent System Control Laboratory

Nara Institute of Science and Technology, Japan

2017 March

Visiting Scholar

University of Technology, Sydney, Australia

2015 October - 2016 January

Visiting Scholar

University of Technology, Sydney, Australia

EDUCATION

2014 October - 2017 September

Doctor in Computer Science

Nara Institute of Science and Technology, Japan

2012 October - 2014 September

Master in Computer Science

Doshisha University, Japan

2008 September - 2012 July
Bachelor in Electronic Engineering
Xidian University, China

AWARD & SCHOLARSHIP

2018 October
2018 Japanese Neural Network Society Best Paper Award

2018 March
NAIST Best Student Award

2016 November
The Best Oral Paper Award
IEEE-RAS 16th International Conference on Humanoid Robots

2016 April - 2017 September
Japanese Government Scholarship (MEXT)

PROFESSIONAL ACTIVITIES

Membership:

The Institute of Electrical and Electronic Engineers (IEEE)
The Robotics Society of Japan (RSJ)
Japanese Neural Network Society (JNNS)

Reviewer:

IEEE Robotics and Automation Letters
International Conference on Robotics and Automation (ICRA) 2017-2019
International Conference on Intelligent Robots and Systems (IROS) 2017-2019
Conference on Robot Learning (CORL) 2018
International Conference on Automation Science and Engineering (CASE)
2018-2019
International Conference on Humanoid Robots (Humanoids) 2017

Associate Editor:

International Conference on Advanced Robotics and Mechatronics (ICARM) 2019

Committee:

International Conference on Advanced Robotics and Mechatronics (ICARM) 2019

PUBLICATIONS

International Journals

1. **Yunduan Cui**, Shigeki Osaki, and Takamitsu Matsubara. “Reinforcement Learning Boat Autopilot: A Sample-efficient and Model Predictive Control-based Approach.” IEEE Robotics and Automation Letters. (Under Review)
2. James Poon, **Yunduan Cui**, Jaime Valls Miro, and Takamitsu Matsubara. “Learning from Demonstration for Locally Assistive Mobility Aids.” International Journal of Intelligent Robotics and Applications. (Conditionally Accepted)
3. Yoshihisa Tsurumine, **Yunduan Cui**, Eiji Uchibe, and Takamitsu Matsubara. “Deep reinforcement learning with smooth policy update: Application to robotic cloth manipulation.” Robotics and Autonomous Systems, 2018. (IF²⁰¹⁷: 2.638)
4. **Yunduan Cui**, James Poon, Jaime Valls Miro, Kimitoshi Yamazaki, Kenji Sugimoto, and Takamitsu Matsubara. “Environment-adaptive interaction primitives through visual context for human–robot motor skill learning.” Autonomous Robots, 2018. (IF²⁰¹⁷:2.244)
5. **Yunduan Cui**, Takamitsu Matsubara, and Kenji Sugimoto. “Kernel dynamic policy programming: Applicable reinforcement learning to robot systems with high dimensional states.” Neural Networks, 2017. (IF²⁰¹⁷: 7.197) (2018 Japanese Neural Network Society Best Paper Award)
6. **Yunduan Cui**, Takamitsu Matsubara, and Kenji Sugimoto. “Pneumatic artificial muscle-driven robot control using local update reinforcement learning.” Advanced Robotics, 2017. (IF²⁰¹⁷: 0.961)

International Conference

1. James Poon, **Yunduan Cui**, Junichiro Ooga, Akihito Ogawa, and Takamitsu Matsubara. “Probabilistic Active Filtering for Object Search in Clutter.” IEEE International Conference on Robotics and Automation (ICRA) 2019.
2. James Poon, **Yunduan Cui**, Jaime Valls Miro, Takamitsu Matsubara. “Learning Mobility Aid Assistance via Decoupled Observation Models.” International Conference on Control, Automation, Robotics and Vision (ICARCV), 2018.
3. Takamitsu Matsubara, Yu Norinaga, Yuto Ozawa, and **Yunduan Cui**. “Transferring Control Policies from Simulations to Real World by Transfer ComponentAnalysis.” 2018 SICE Annual Conference.

4. **Yunduan Cui**, Lingwei Zhu, Morihiro Fujisaki, Hiroaki Kanokogi, and Takamitsu Matsubara. “Factorial Kernel Dynamic Policy Programming for Vinyl Acetate Monomer Plant Model Control.” IEEE International Conference on Automation Science and Engineering (CASE) 2018.
5. Takamitsu Matsubara, Yu Norinaga, Yuto Ozawa, and **Yunduan Cui**. “Policy Transfer from Simulations to Real World by Transfer Component Analysis.” IEEE International Conference on Automation Science and Engineering (CASE) 2018.
6. Yoshihisa Tsurumine, **Yunduan Cui**, Eiji Uchibe, and Takamitsu Matsubara. “Deep Dynamic Policy Programming for Robot Control with Raw Images.” IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2017.
7. James Poon, **Yunduan Cui**, Jaime Valls Miro, Takamitsu Matsubara, and Kenji Sugimoto. “Local Driving Assistance from Demonstration for Mobility Aids.” IEEE International Conference on Robotics and Automation (ICRA) 2017.
8. **Yunduan Cui**, James Poon, Takamitsu Matsubara, Jaime Valls Miro, Kenji Sugimoto, and Kimitoshi Yamazaki. “Environment-adaptive Interaction Primitives for Human-Robot Motor Skill Learning.” IEEE-RAS International Conference on Humanoid Robots (Humanoids) 2016.
9. **Yunduan Cui**, Takamitsu Matsubara, and Kenji Sugimoto. “Kernel Dynamic Policy Programming: Practical Reinforcement Learning for High-dimensional Robots.” IEEE-RAS International Conference on Humanoid Robots (Humanoids) 2016. (Best Oral Paper Award)
10. **Yunduan Cui**, Takamitsu Matsubara, and Kenji Sugimoto. “Local Update Dynamic Policy Programming in reinforcement learning of pneumatic artificial muscle-driven humanoid hand control.” IEEE-RAS International Conference on Humanoid Robots (Humanoids) 2015.
11. **Yunduan Cui**, Takamitsu Matsubara and Kenji Sugimoto. “An Empirical Comparison of Approximate Dynamic Policy Programming and LSPI for Simple Robot Motor Control Problems.” 2015 SICE Annual Conference.
12. **Yunduan Cui**, Kazuhiko Takahashi, and Masafumi Hashimoto. “Remarks on quaternion neural network based controller with application to an inverted pendulum.” 2014 SICE Annual Conference.
13. Kazuhiko Takahashi, Sae Takahashi, **Yunduan Cui** and Masafumi Hashimoto. “Remarks on computational facial expression recognition from HOG features using quaternion multi-layer neural network.” 2014 International Conference on Engineering Applications of Neural Networks.
14. **Yunduan Cui**, Kazuhiko Takahashi, and Masafumi Hashimoto. “Remarks on robot controller application of Clifford multi-layer neural networks.” 2014 IEEE 13th International Workshop on Advanced Motion Control (AMC).

15. **Yunduan Cui**, Kazuhiko Takahashi, and Masafumi Hashimoto. “Design of control systems using quaternion neural network and its application to inverse kinematics of robot manipulator.” 2013 IEEE/SICE International Symposium on System Integration (SII).

16. **Yunduan Cui**, Kazuhiko Takahashi, and Masafumi Hashimoto. “Remarks on quaternion neural networks with application to robot control.” 2013 SICE Annual Conference.