

Samuele Tosatto

Ernst-Ludwig-Strasse 25 • Darmstadt 64283, Germany • Email: samuele.tosatto@gmail.com

Ph.D. Student

RESEARCH INTERESTS

Reinforcement Learning: (approximate) dynamic programming; policy gradient techniques; model based; exploration/exploitation tradeoff; risk awareness (in MDPs); optimal control;

Machine Learning: linear models; deep models; mixture models; kernel methods; boosting; dimensionality reduction;

Robotics: Human-robot interaction, movement primitives, robot-learning.

EDUCATION

2017-2021 Technische Universität Darmstadt, Germany, **Ph.D. Student** (Graduation expected in May 2021)

2016 ERASMUS Johannes Kepler Universität, Linz, Austria

2013-2017 Polytechnic University of Milan, Italy, **Master in Software Engineering** (110/110)

2009-2012 Polytechnic University of Milan, Italy, **Bachelor in Software Engineering** (96/110)

ADDITIONAL EXPERIENCE

2017 SPP 1527 Summer School on Robotics & Autonomous Learning

PROGRAMMING SKILLS

Programming Languages: Python; Java; C#;

Libraries/Frameworks/Revision Controls: Numpy; Tensorflow; PyTorch; Scipy; Scikit-Learn; CVXPY; Cython; V-REP/Coppelia; ROS (and PyROS); Git.

NATURAL LANGUAGES

Italian (Mother tongue), English (C1), German (B1).

STUDENT SUPERVISION

2020 Bachelor Thesis Dimensionality Reduction of Movement Primitives in Parameter Space
Stadtmüller, J.; Tosatto, S.; Peters, J.

2019 Master Thesis A Nonparametric Off-Policy Policy Gradient
Carvalho, J.; Tosatto, S.; Peters, J.

2019 Master Thesis Improving Sample-Efficiency with a Model-Based Deterministic Policy Gradient
Saoud, H.; Tosatto, S.; Peters, J.

2018 Master Thesis Boosted Deep Q-Network
Tschirner, J.; Tosatto, S.; Peters, J.

REVIEWING

2020 International Conference of Machine Learning (ICML)

2019, 2020 IEEE Robotics and Automation Letters (RA-L)

2018 IEEE International Conference on Humanoid Robots (HUMANOIDS)

2018 International Conference on Intelligent Robots and Systems (IROS)

PUBLICATION LIST

Tosatto, S.; Pirotta, M.; D'Eramo, C; Restelli, M. (2017). Boosted Fitted Q-Iteration, *Proceedings of the International Conference of Machine Learning (ICML)*.

Rueckert, E.; Nakatenus, M.; **Tosatto, S.;** Peters, J. (2017). Learning Inverse Dynamics Models in O(n) time with LSTM networks, *Proceedings of the IEEE International Conference on Humanoid Robots (HUMANOIDS)*.

Tosatto, S.; D'Eramo, C.; Pajarinen, J.; Restelli, M.; Peters, J. (2019). Exploration Driven By an Optimistic Bellman Equation, *Proceedings of the International Joint Conference on Neural Networks (IJCNN)*.

Tosatto, S.; Carvalho, J.; Abdulsamad, H.; Peters, J. (2020). A Sample Efficient Nonparametric Off-Policy Policy Gradient, *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS)*.

Tosatto, S.; Carvalho, J.; Peters, J. (Under Review). Batch Reinforcement Learning with a Nonparametric Off-Policy Policy Gradient, *Transaction of Pattern Analysis and Machine Intelligence (TPAMI)*.

Tosatto, S.; Chalvatzaki, G.; Peters, J. (Under Review). Contextual Latent-Movements Off-Policy Optimization for Robotic Manipulation Skills *IEEE Robotics and Automation Letters (RA-L)*.

Tosatto, S.; Stadtmüller J.; Peters, J. (In Preparation). Dimensionality Reduction of Movement Primitives in Parameter Space, *Frontiers in Robotics and AI*.

REFERENCES

Prof. Jan Peters, TU Darmstadt and Max Planck Institute for Machine Intelligence, mail@jan-peters.net, +49 6151-16-25374

Prof. Marcello Restelli, Polytechnic University of Milan, marcello.restelli@polimi.it, +39 02-2399-4015

Prof. Joni Pajarinen, Aalto University, joni.pajarinen@aalto.fi, +35 850 3094771

Prof. Elmar Rückert, Universität zu Lübeck, rueckert@rob.uni-luebeck.de, +49 451 31015209