

Personal Information

Name Matteo Pirotta
Born in Vaprio d'Adda (MI) - Italy - 24/10/1988
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Current Position

2016–today **Postdoc in Machine Learning,**
Politecnico di Milano.
Supervisor: Marcello Restelli
My research is mainly focused on Reinforcement Learning

Education

2012–2015 **PhD in Information Technology,**
Politecnico di Milano, Ph.D. cum laude.
Topic: *"Reinforcement Learning: from Theory to Algorithms."*
Supervisors: Luca Bascetta, Marcello Restelli
Research visits:

- Intelligent Autonomous Systems, Technische Universitaet Darmstadt, Darmstadt (Germany), March-August 2015. Headed by Prof. Jan Peters.

PhD Schools:

- Online Learning Summer School, Copenhagen (Denmark), July 2015
- Machine Learning Summer School, Tübingen (Germany), August-September 2013
- Regularization Methods For High Dimensional Learning, Genova (Italy), June 2013

2010–2012 **Master of Science in Computer Engineering,**
Politecnico di Milano, 110/110 cum laude.
Thesis: *"Safe Policy Iteration: A Monotonically Improving Approximate Policy Iteration Approach."*

- Special mention from AI*IA (Associazione Italiana per l'Intelligenza Artificiale) among best Italian master thesis

2007–2010 **Bachelor of Science in Computer Engineering,**
Politecnico di Milano, 110/110 cum laude.
Thesis: *"Fitted Policy Search: Direct Policy Search using a Batch Reinforcement Learning Approach."*

2002–2007 **High-school diploma,**
Istituto Tecnico Industriale Guglielmo Marconi, Gorgonzola (MI), 100/100.

Work Experiences

2015–2016 **ICT Project Manager, Artificial Intelligence, UniCredit.**
Member of a small team applying machine learning to solve complex real problems.
November 2015 – May 2016

Teaching Experiences

2015 **Teaching assistant, Fondamenti di Informatica, Ingegneria Informatica.**
Politecnico di Milano – Prof. C. Bolchini – 38 h
October 2014 – January 2015

- 2014 **Laboratory Tutor**, *Informatica A*, Ingegneria Gestionale.
October 2013 – January 2014
Politecnico di Milano – Prof. O. Mejri – 24 h
- 2014 **Laboratory Tutor**, *Informatica B*, Ingegneria Meccanica.
October 2013 – January 2014
Politecnico di Milano – Prof. V. Zaccaria – 24 h
- 2013 **Teaching assistant**, *Robotics*, Ingegneria Informatica.
Politecnico di Milano – Prof. M. Restelli – 20 h
March 2013 – June 2013

Languages

Italian **Mother-tongue**
English **Fluent**

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Publications

Journals

- 2015 Parisi, S., **Pirotta, M.** and Restelli, M., Continuous Pareto Manifold Approximation, *Journal of Artificial Intelligence*. (*submitted*)
- 2015 Manganini, G., **Pirotta, M.**, Restelli, M., Piroddi, L., and Prandini, M., Policy search for the optimal control of Markov decision processes: a novel particle-based iterative scheme, *IEEE Transactions on Cybernetics* (*accepted, to appear*)
- 2015 **Pirotta, M.**, Restelli, M., and Bascetta, L., Policy Gradient in Lipschitz MDPs, *Machine Learning*, Machine Learning, Springer US, September 2015, Volume 100, Issue 2, p. 255-283.

Conferences (workshops are omitted)

- 2015 **Pirotta, M.**, Balloccu, S., Bascetta, L., and Restelli, M., Cutting-Plane Inverse Reinforcement Learning, *The Thirtieth AAAI Conference on Artificial Intelligence (AAAI-16)*, Phoenix, Arizona USA (*submitted*)
- 2015 **Pirotta, M.**, and Restelli, M., Inverse Reinforcement Learning through Policy Gradient Minimization, *The Thirtieth AAAI Conference on Artificial Intelligence (AAAI-16)*, Phoenix, Arizona USA (*submitted*)
- 2015 Caporale, D., Deori, L., Mura, R., Falsone, A., Vignali, R., Giulioni, L., **Pirotta, M.** and Manganini, G., Optimal Control to Reduce Emissions in Gasoline Engines: An Iterative Learning Control Approach for ECU Calibration Maps Improvement, *European Control Conference (ECC 2015)*, July 2015, Linz, Austria.
- 2015 Manganini, G., **Pirotta, M.**, Restelli, M., and Bascetta, L., Following Newton Direction in Policy Gradient with Parameter Exploration. In *Proceedings of the International Joint Conference on Neural Networks, IJCNN 2015*, July 2015, Killarney, Ireland.
- 2015 **Pirotta, M.**, Parisi, S., and Restelli, M., Multi-Objective Reinforcement Learning with Continuous Pareto Frontier Approximation. In *Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence, AAAI-15*, January 2015, Austin Texas, USA.
- 2014 **Pirotta, M.**, Manganini, G., Piroddi, L., Prandini, M., and Restelli, M., A particle-based policy for the optimal control of Markov decision processes, *The 19th World Congress of the International Federation of Automatic Control, IFAC 2014*, August 2014.
- 2014 Parisi, S., **Pirotta, M.**, Smacchia, N., Bascetta, L., and Restelli, M., Policy Gradient Approaches for Multi-Objective Sequential Decision Making, *International Joint Conference on Neural Networks, IJCNN 2014*, July 2014.
- 2013 **Pirotta, M.**, Restelli, M., and Bascetta, L., Adaptive Step-Size for Policy Gradient Methods, *Advances in Neural Information Processing Systems 25, NIPS 2013*, December 2013.
- 2013 **Pirotta, M.**, Restelli, M., Pecorino, A. and Calandriello, D., Safe Policy Iteration, In *Proceedings of the International Conference on Machine Learning, ICML '13*, July 2013.
- 2011 Migliaavacca, M., Pecorino, A., **Pirotta, M.**, Restelli, M., and Bonarini, A., Fitted Policy Search, *SSCI ADPRL - 2011 IEEE Symposium on Adaptive Dynamic Programming and Reinforcement Learning*, April 2011.

Skills

Technical Machine Learning and optimization.

O.S. Linux, Windows.

Coding C, C++, Java, PHP

Office Microsoft Office

Databases MySQL, Microsoft Access

Other MatLab/Simulink, Octave, Mathematica, Maple, IBM CPLEX, \LaTeX

Personal Interests

Highly interested in multi-cultural experiences, considering an international job.

Interested in science (applied machine learning), cooking and running.

I hereby authorise treatment of the personal information provided above pursuant to Legislative Decree 196/03