

(SHORT) CURRICULUM VITAE - March 2021
Massimiliano Patacchiola, PhD

Name	Massimiliano
Surname	Patacchiola
Address	Cambridge, United Kingdom
Scholar	https://scholar.google.com/citations?user=L4GcSrsAAAAJ
GitHub	https://github.com/mpatacchiola

Profile

Researcher working on efficient deep learning, with “efficient” meaning: less data, less supervision, less computation. *Research interests:* deep learning (few-shot, self-supervised, and continual learning), Bayesian inference (Gaussian Processes), reinforcement learning and robotics.

Work/Research Experience

- 2021-Present Postdoctoral Researcher. University of Cambridge, Department of Engineering.
Member of the “[Machine Learning Group](#)”. Part of the EPSRC grant “Machine Learning for Tomorrow” (in collaboration with Microsoft Research).
Supervisor: [Richard Turner](#)
- 2018-2021 Postdoctoral Researcher. University of Edinburgh, School of Informatics.
Member of the “[Bayesian and Neural Systems](#)” group. Research project on efficient few-shot learning via Bayesian methods and self-supervised learning (in collaboration with Huawei). (www.anc.ed.ac.uk/machine-learning)
Supervisor: [Amos Storkey](#)
- 2018 Intern. Snapchat. London, United Kingdom.
Member of the “*Camera Platform*” team. Research project on the disentanglement of latent representations in deep autoencoders for applications such as style transfer and face-attributes generation (www.snapchat.com)
Supervisors: Patrick-Fox Roberts, [Edward Rosten](#)
- 2012-2015 Robotics Engineer. Eurolink Systems group, Rome, Italy. Development of models for the control of UGV (Unmanned Ground Vehicle) and UAV (Unmanned Aerial Vehicle) in critical applications such as search-and-rescue and bomb disposal (www.eurolinksystems.com)
- 2011-2012 Intern. Institute of Cognitive Sciences and Technologies, Rome, Italy.
Member of the “*Laboratory of Artificial Life and Robotics (LARAL)*”. Working on evolutionary robotics, neural networks, and multi-agent systems (<http://laral.istc.cnr.it>)

2008-2009 Placement. La Sapienza University, Rome, Italy.
Member of the “*Research Centre for Cognitive Elaboration on Natural and Artificial Systems (ECONA)*”. Research project on visual perception and memory (<https://web.uniroma1.it/econa>)

Education

2015-2018 PhD in “*Machine Learning and Robotics*”. Plymouth University, School of Computing, Electronics and Mathematics. United Kingdom. Research project on effective machine learning methods for human-robot interaction. This work has been cited >110 times, the [repository](#) has 1400 stars and 400 forks on GitHub.
Supervisors: [Angelo Cangelosi](#), Torbjorn Dahl, [Giorgio Metta](#)

2009-2011 MSc in “*Neuroscience*”. La Sapienza University. Rome, Italy.
Supervisors: [Stefano Puglisi Allegra](#), [Gianluca Baldassarre](#), [Domenico Parisi](#)

2006-2009 BSc in “*Experimental Cognitive Psychology*”. La Sapienza University. Rome, Italy.
Supervisor: [Marta Olivetti Belardinelli](#)

1999-2004 Secondary School. Scientific Course: National Plan of Computer Science. Rieti, Italy. It gives entry to university. Main subjects: computer science, mathematics (linear algebra, pre-calculus, calculus), physics, biology, English, French.

Technical Skills

Machine Learning -Programming experience (~2 years) with PyTorch and TensorFlow for deep learning applications and scientific publications.
-Experience with Artificial Neural Networks and the most recent Deep Learning architectures (e.g ResNet, ResNeXt, WideResNet, DenseNet, GAN, VAE, etc).
-Experience with supervised, unsupervised learning algorithms, reinforcement learning (DQN, Double DQN, MC, SARSA, etc), and Bayesian methods (Gaussian Processes, Bayesian networks).

Robotics Developement of highlevel and low-level code for the control of humanoid robots, drones, and autonomous ground rover.
-Experience with the most important software tools for Robotics and Computer Vision (e.g. ROS, YARP, NAOqi, OpenAI Gym, OpenCV).

IT -Proficiency in Python (~5 years, primary language).
-Past exposure to several programming languages such as C/C++, C#, Visual Basic, HTML, PHP, JavaScript.
-Daily usage of Unix OS (~10 years) and related tools (Shell, Bash scripting, SSH).

Languages

Italian (native speaker), English (advanced), French (basic-intermediate)

Awards, Fellowships and Scholarships

- 06-2020 Distinguished Service Award as an Outstanding Reviewer for the IEEE Robotics and Automation Letters (RA-L). Announced at ICRA 2020 award ceremony.
- 2018-present Associate Fellowship, Higher Education Academy (HEA). Programme that supports early career researchers who have responsibility for teaching and learning.
- 03-2016 Academic Hardware Grant, NVIDIA corporation. Received a Tesla K40 GPU in support of a project on head pose estimation via convolutional neural networks.
- 2012-present Member, Mensa International. Society for people with high intelligence quotient.

Recent Talks, Workshops, Media, etc

- 29-09-2020 (Invited Speaker) “Bayesian meta-learning for the few-shot setting”. Huawei Russian Research Institute. Workshop on Deep/Machine Learning for Computer Vision.
- 08-05-2020 (Invited Speaker) “Benchmarking Continual Few-Shot Learning”. Presentation at the [ContinualAI](#) group [\[YouTube\]](#)
- 10-01-2020 (Organizer) University of Edinburgh, Informatics workshop (~40 participants).
- 2015-present Reviewer for conferences and journals: NeurIPS (Meta-Reviewr at MetaLearn workshop), AISTATS (International Conference on Artificial Intelligence and Statistics), ICRA (International Conference on Robotics and Automation), IROS (International Conference on Intelligent Robots and Systems).

Selected Publications [\[scholar\]](#)

Patacchiola, M., Storkey, A. (2020). “Self-Supervised Relational Reasoning for Representation Learning”. *Advances in Neural Information Processing Systems (NeurIPS)*. **Spotlight (top 3%)**. [\[arXiv\]](#) [\[GitHub\]](#)

Patacchiola, M., Turner, J., Crowley, E. J., M. O’Boyle, Storkey, A. (2020). “Bayesian Meta-Learning for the Few-Shot Setting via Deep Kernels”. *Advances in Neural Information Processing Systems (NeurIPS)*. **Spotlight (top 3%)**. [\[arXiv\]](#) [\[GitHub\]](#)

Antoniou, A., **Patacchiola, M.**, Ochal, M., & Storkey, A. (2020). “Defining Benchmarks for Continual Few-Shot Learning”. *Advances in Neural Information Processing Systems (NeurIPS)*, *Workshop on Meta-Learning*. [\[arXiv\]](#) [\[YouTube\]](#)

Polvara*, R., **Patacchiola*, M.**, Hanheide, M., & Neumann, G. (2020). Sim-to-Real Quadrotor Landing via Sequential Deep Q-Networks and Domain Randomization. *Robotics*, 9(1), 8. *Co-first authors. [\[PDF\]](#)

Thabet, M., **Patacchiola, M.**, & Cangelosi, A. (2019). “Sample-efficient Deep Reinforcement Learning with Imaginary Rollouts for Human-Robot Interaction”. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. [\[arXiv\]](#)