(SHORT) CURRICULUM VITAE - November 2020
Massimiliano Patacchiola, PhD

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

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

2018-Present — Postdoctoral Researcher. University of Edinburgh, Schoolf 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]