MASSIMILIANO PATACCHIOLA

Name	Massimiliano
Surname	Patacchiola
Address	PL4 7DR, Plymouth, Devon, UK
Website	http://mpatacchiola.github.io
GitHub	https://github.com/mpatacchiola
Date of birth	25 June 1985
Nationality	Italian
Sex	Male

Profile

Cognitive scientist specialised in computational modelling through machine learning techniques.
A wide background in robotics, artificial intelligence, neuroscience and experimental psychology.
Strong motivation for developing optimized code.

Education

2015-present PhD student in “Cognitive Robotics and Computational Modelling”, Plymouth University, School of Computing, Electronics and Mathematics, Plymouth (United Kingdom).
I am designing the social skills of three humanoid robots using approaches derived from Probabilistic Robotics and Machine Learning.
Project THRIVE (Trust in Human Robot Interaction) funded by AFOSR (Air Force Office of Scientific Research, USA)
Supervisors: Angelo Cangelosi, Torbjorn Dahl, Giorgio Metta
www.thrive-project.org

2009-2011 MSc in “Cognitive Neuroscience”, La Sapienza University, Rome (Italy).
Advanced preparation in: neural networks processing, cognitive models, neurobiology, neurophysiology.
Dissertation title: Artificial neural networks for body perception in simulated robots.
Supervisors: Stefano Puglisi Allegra, Gianluca Baldassarre, Domenico Parisi

2006-2009 BSc in “Experimental Cognitive Psychology”, La Sapienza University, Rome (Italy).
Advanced preparation in: scientific methodology, analysis of cognitive processes, applied statistics, neurobiology and genetics.
Dissertation title: Effects of perceptual load on visual search and visuospatial memory tasks.
Supervisor: Marta Olivetti Belardinelli

1999-2004 Secondary School, “Liceo Scientifico, Piano Nazionale di Informatica” (Scientific Course, National Plan of Computer Science), Rieti (Italy).
It gives entry to university. Main subjects: computer science, mathematics, physics, biology, English, French.

Work/Research Experience

2012-2015 Robotics specialist, Eurolink Systems group, Rome (Italy).
I was part of the software department and responsible of the internal repository. My duties involved creating algorithms and models for the control of UGV (Unmanned Ground Vehicle) and UAV (Unmanned Aerial Vehicle). I used ROS (Robotic Operating System) to implement SLAM (Simultaneous Localization And Mapping) in the Leopardo-Bee autonomous robot. I collaborated with the department of electronics and mechanics for designing the COBRA system, a micro tethered UAV which has been used by the Italian Army.
www.eurolinksystems.com

2011-2012 Internship, LARAL (Laboratory of Artificial Life and Robotics), Institute of Cognitive Sciences and Technologies, Rome (Italy).
My duties involved creating cognitive models for simulations in Evolutionary Robotics. During this period I developed libraries in C++ and Java for the implementation of Neural Networks and Genetic Algorithms. I used the iCub simulator and the Evorobot software. Part of the results achieved during this internship were published in a journal [1].
http://laral.istc.cnr.it

2008-2009 Placement, ECONA (Research Centre for Cognitive Elaboration on Natural and Artificial Systems), La Sapienza University, Rome (Italy).
Research project on visual perception and memory. My duties involved planning the project, submission of test to subjects, elaboration and interpretation of data. The result obtained was presented in the final dissertation of my Bachelor.
https://web.uniroma1.it/econa

Technical Skills

Robotics	-Libraries for the control of different humanoid robots (Aldebaran NAO, iCub, Scitos G5). -Experience with the most important software tools for Robotics: ROS, YARP, NAOqi and Choregraphe. -Experience in developing web interfaces (HTML, PHP and JavaScript) and graphical user interfaces (Qt, pyQt, Visual Studio) for remote control of robotic platforms and arms . -Experience in programming Atmel and Microchip microcontrollers. Experience in embedded programming (Raspberry Pi, Beagleboard, Pandaboard, Arduino, etc). -Hands-on experience with LIDAR, motor controllers, inertial units, encoders, accelerometer, GPS, sensors (ultrasonic, infrared, temperature, pressure, etc). -Hands-on experience in mechanical design (Solidworks), and rapid prototyping using 3D printers.
Computer Science	-Advanced knowledge of Unix OS (Shell, Bash scripting, SSH) and related tools (gcc, g++, make, vi, git, etc). -Proficiency in C/C++, especially optimization using C++11. -I have familiarity with several programming languages (C#, Python, Java, Visual

	Basic, HTML, PHP, JavaScript) and tools for debug (gdb, valgrind), software design (UML) and documentation (Doxygen). -Use of the statistical software R and Matlab for data analysis.
Machine Learning	-Experience with supervised and unsupervised learning algorithms (artificial neural networks, SVM, regression, k-means clustering, anomaly detection, genetic algorithms). -Experience with probabilistic graphical models (Bayesian networks and Markov random fields) for cognitive modelling.

Languages

Italian: native speaker
English: advanced
French: intermediate

2014 TOEFL iBT English certification. Total Score: 88

Certifications

01-2016 Machine Learning by Stanford University on Coursera.
https://www.coursera.org/account/accomplishments/records/N9AR3K66H6ZX

Talks, Conferences, Workshops

20-03-2014 (Invited Speaker) Introducing the ZEUS project, emergency management with unmanned robotic systems. AFCEA annual conference, Rome, Italy.

08-2015 (Participant) 2nd Summer School on Social Human-Robot Interaction. Aland, Finland.

20-11-2015 (Invited Speaker) How to use humanoid robots in Human-Robot Interaction Experiments. University of Messina, Messina, Italy.

Publications

[1] Paglieri F., Parisi D., Patacchiola M., Petrosino G., 2015. Investigating intertemporal choice trough experimental evolutionary robotics. *Behavioural Processes*, Vol. 115.

[2] Zanatto D., Patacchiola M., Goslin J., Cangelosi A., 2016. Priming antropomorphism: Can the credibility of humanlike robots be transferred to non-humanlike robots? *In Proceeding of the eleventh annual acm/ieee international conference on human-robot interaction extended abstract.* Christchurch, New Zeland.