



Valerio Biscione

Curriculum Vitae

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Education

- 2012–present **PhD student in Psychology - Decision Making - Cognitive Modeling**,
Plymouth University, UK.
- 2012 **BSc in Psychology**,
Second University of Naples,
Thesis: *Robots with External Stores: Simulating the evolution of storing goods and its effects on human behaviour*,
110/110 (First Class).
- 2008 **Music School Diploma in Piano**,
High Music School G. Martucci, Salerno,
10/10 cum laude (First Class).
- 2007 **High School Diploma in Undergraduate Industrial Engineer, Specialized in Computer Science**,
B. Focaccia, Salerno,
97/100 (First Class).

Expertise

- Programming Languages **Experienced:** MATLAB, C, C++, Python, Common LISP, Visual Basic
Familiar With: R, Java, JavaScript, HTML
- Machine Learning Skills Working knowledge of Python Libraries for ML (Tensorflow, Scikit-learn, Theano),
Computer Vision (with OpenCV in Python/C++), MATLAB Machine Learning
Toolbox
- Tools Familiar with Emacs, E-Prime, Visual Studio, Eclipse, Qt Creator, Android Studio
- Platforms Windows, Linux: Ubuntu
- Mathematical & Statistical Skills Able to confidently apply concepts of Probabilistic Analysis, Dynamical System (in
continuous and discrete time), Stochastic Processes, Linear Algebra, Multivariable
Calculus, Bayesian Inference, Markov Chain Monte Carlo, Hypothesis Testing
- Experimental Skills Able to autonomously design, conduct and analyse the results of psychological studies

Work Experience

- January 2016 **Research Assistant - School of Psychology**, *Plymouth University, Plymouth*,
June 2016 During this project I worked on a platform to assess and measure the degree of cognitive deficit in patients with infantile nystagmus syndrome, a permanent condition causing involuntary oscillations. My work involved writing experimental software (with E-Prime and Psychtoolbox in MATLAB), running visual experiments with a normal and patient with nystagmus, and perform statistical analysis (mainly with MATLAB). I also coded and ran several computer simulations in order to investigate visual deficit in terms of the most advanced model on decision making (stochastic sequential sampling models).
- October 2012 **Scientific Collaborator at the LARAL (Laboratories of Autonomous Robotics and Artificial Intelligence)**, *National Research Council, Rome, Italy*,
August 2014 I started collaborating with the Laboratory of Autonomous Robotics and Artificial Life in 2012 for my BSc thesis under the supervision of Prof. Domenico Parisim but I kept collaborating longer after the degree. My job consisted in programming and running simulational models of evolutionary behaviours, both within a single and multi agent framework. I mainly worked with the software Evorobot (C++, Qt), designing and developing a multi-agent version of Evorobot in order to fulfil our research needs. During this experience I developed a strong background in Neural Networks (with Genetic Algorithm). I also conducted the statistical analysis and interpretation of the results. As a result of this work, I co-authored a paper with Domenico Parisi and Giancarlo Petrosino, on the evolutionary significance of external stores for the evolution of several aspects of human behaviors (see Publication Section). I also improved my experience with C++ and the Qt library.

Projects

- 2016 **Automatic Page Turner** (C++, Qt, OpenCV) I developed this software to solve a classic problem for musicians (especially pianists): turning the page while playing. This software will use head movement (tilting the head left/right) to automatically scroll or turn the page up/down (depending on the direction of the movement). It is developed with OpenCV libraries for C++ and has a GUI interface developed in Qt. <http://valeriobiscione.com/2016/03/01/head-tilting-detection/>
- 2015 **Reference Creator** (MATLAB) This software take a text file, it finds the citation (in APA format) in the text, and builds a reference list in APA style using Mendeley database.
This software has been chosen as "pick of the week" by the MATLAB staff.
<http://referencecreator.valeriobiscione.com/>
- 2014 **Diffusion Music** (MATLAB) This software generate a music based on a stochastic drift diffusion model.
<http://valeriobiscione.com/2015/05/08/diffusion-music/>
- 2013/present **Various MATLAB scripts** (MATLAB) As an active member of the MATLAB community in the top 5% contributors, I coded and distributed several MATLAB scripts for scientific research.
<https://uk.mathworks.com/matlabcentral/profile/authors/4488786-valerio-biscione>

- 2012 **Evorobot** (*C++ with Qt libraries*) During my collaboration at the LARAL in Rome, I developed a new version of Evorobot, a software for evolutionary robotics. I developed a multi-agent version with plenty of new features. My version of Evorobot is currently used at the LARAL.
- 2011 **Neural Network Library** (*Common LISP*) This is a project that I developed to improve my abilities with object oriented programming. It is a fully functioning Neural Network Library which allows the user to build its own network by putting together different neurons or groups of layers.
<http://valeriobiscione.com/2015/05/11/lisp-neural-network-library/>

Scientific Work

Publications in Journals

- 2015 **Investigating decision rules with a new experimental design: the EX-ACT paradigm**, *Frontiers in Behavioral Neuroscience*. 9:288. doi: 10.3389/fnbeh.2015.00288,
 Biscione, V., Harris, C. M..
- 2015 **External Stores: Simulating the evolution of storing goods and its effects on human behaviour**, *Interaction Studies*. Volume 16, Issue 1,
 Biscione, V., Parisi, D., Petrosino, G.
- 2015 **Continuous user authentication using multi-modal biometrics**, *Computer & Security*. 06/2015; DOI:10.1016/j.cose.2015.06.001,
 Saevanee, H., Clarke, N., Furnell, S., Biscione, V.
- 2014 **Manual choice reaction times in the rate-domain**, *Frontiers in Human Neuroscience*. June, 418,
 Harris, C. M., Waddington, J., Biscione, V., and Manzi, S.

Conference Papers

- 2015 **A New Paradigm for Investigating Human Decision Strategy**, *Proceeding of the International Psychological Applications Conference and Trends*. May. Ljubliana, Slovenia. (Poster Presentation),
 Biscione, V., Harris, C. M.
- 2015 **Connection Pieron's Law, the Foreperiod Effect and Distribution Shapes in a Simple Reaction Time Task**, *Proceeding of the International Psychological Applications Conference and Trends*. May. Ljubliana, Slovenia. (Oral Presentation),
 Biscione, V., Harris, C. M.
- 2014 **Text-Based Active Authentication for Mobile Devices.**, *IFIP Advances in Information and Communication Technology*. Volume 428, 2014, pp 99-112,
 Saevanee, H., Clarke, N., Furnell, S., Biscione, V.

Teaching Experience

- October 2014 (*Demonstrator*) SOFT336 - Cross-platform application in C++
 January 2013 (*Demonstrator*) SOFT235 - Object-Oriented Programming in C++
 November 2013/2015 (*Teaching Assistant*) AIN503 - Interactive Intelligent Systems Workshop

Grants Obtained

- May 2015 Grindley Grants for Conference Attendance from the Experimental Psychology Society
October 2012 Second University of Naples, grant for travel/research at the Institute of Cognitive Science and Technology, Rome

Summer Schools

- August 2015 **Theories and Methods in Judgment and Decision Making Research** - International Summer School 2015, Schwarzenbruck, Germany

Languages

- Italian **Mothertongue**
English **Fluent** - IELTS: 7.5 (*May 2012*)

Other

- Music I am a classically trained pianist and I played in several concerts in Italy and UK, both in a solo and group formation. I won several first prize award in piano competitions. I taught piano for several years to youngs and adults
Curiosity I am a fast typer. My record is 158 words per minute in Italian, and 153 in English