

## Curriculum Vitae

January 2021

### Personal Information

Family name, first name

**Silvetti Massimo**

ORCID ID

0000-0002-2925-0615

Nationality

Italian

Web

<https://scholar.google.it/citations?user=FwVvJNIAAAAJ&hl=it>  
[https://www.researchgate.net/profile/Massimo\\_Silvetti](https://www.researchgate.net/profile/Massimo_Silvetti)  
<https://ctnlab.it/index.php/massimo-silvetti/>



### Current position

Dates

December 2018 – Today

Occupation or position held

Researcher (tenured)

Main activities and responsibilities

Coordinator and co-founder of the Computational and Translational Neuroscience Lab (CTNLab)

Name and address of employer

Institute of Cognitive Sciences and Technology (ISTC), National Research Council (CNR), Italy

### Previous positions

Dates

May 2018 – April 2020

Occupation or position held

Marie Sklodowska-Curie IF Research fellow (grant agreement No. 795919)

Main activities and responsibilities

**P.I. of Robotics and computational neuroscience project, titled: "Robotic embodiment of a meta-learning neural model of human decision-making"**

Name and address of employer

Institute of Cognitive Sciences and Technology (ISTC), National Research Council (CNR), Italy

Dates

February 2017 – October 2017

Occupation or position held

FWO grant funded visiting researcher (grant agreement No. V409517N)

Main activities and responsibilities

**P.I. of Robotics and computational neuroscience project, titled: "Embodiment of reinforcement learning neural model for cognitive control"**

Name and address of employer

Institute of Cognitive Sciences and Technology (ISTC), National Research Council (CNR), Italy

Dates

October 2012 – April 2018

Occupation or position held

Doctor Assistant (equivalent Italian RTDA)

Main activities and responsibilities

**Main activity:** Computational neuroscience, neuroimaging, machine learning

Name and address of employer

Ghent University, Department of Experimental Psychology; Ghent University Hospital, Neuroimaging Lab (GIFMI).

Dates

October 2009 – September 2012

Occupation or position held

Postdoctoral fellow

Main activities and responsibilities

**Main activity:** Computational neuroscience, neuroimaging, machine learning

Name and address of employer

Ghent University, Department of Experimental Psychology; Ghent University Hospital, Neuroimaging Lab (GIFMI).

Dates

April 2007-September 2009

Occupation or position held

Postdoctoral fellow

Main activities and responsibilities

**Main activity:** Computational neuroscience, neuroimaging, machine learning

Name and address of employer

University of Rome "La Sapienza"; Neuroimaging Lab, Fondazione Santa Lucia (Rome).

## Licensures

Date	December 2019
Qualification awarded	<b>National scientific qualification as Associate Professor of Physiology (fascia II, BIO/09)</b>
Date	April 2017
Qualification awarded	<b>National scientific qualification as Associate Professor of Psychobiology (fascia II, M-PSI/02)</b>

## Education

Date	September 2020
Qualification awarded	Postgraduate course: "Computational Psychiatry"
Principal subjects	<b>Computational Psychiatry</b>
Organisation providing education and training	Swiss Federal Institute of Technology (ETH), Zurich, Switzerland
Date	August-September 2015
Qualification awarded	Postgraduate course: "29 <sup>th</sup> MLSS Kyoto"
Principal subjects	<b>Machine Learning</b>
Organisation providing education and training	Kyoto University, Kyoto, Japan
Date	February 2013
Qualification awarded	Postgraduate course: "Statistical Parametric Mapping (SPM)"
Principal subjects	<b>MRI data analysis</b>
Organisation providing education and training	Swiss Federal Institute of Technology (ETH), Zurich, Switzerland
Date	March 2007
Qualification awarded	<b>Ph.D. in Cognitive Neuroscience</b>
Dissertation title	<b>RBF Network for Coordinate Transformations and Correlated Noise Filtering</b>
Supervisors	Prof. Fabrizio Doricchi, Prof. Eliano Pessa
Principal topics	<b>Computational neuroscience of space representation and coordinates transformation</b>
Organisation providing education and training	Ph.D. School in Neuroscience. University of Rome "La Sapienza"
Date	July 2003
Qualification awarded	<b>Laurea V.O. (M.Sc.) Psychobiology (customized study plan, 360 ECTS)</b>
Grade	Summa cum laude
Dissertation title	<b>Neural model of horizontal space coding: Role of retinal and multi-modal factors.</b>
Supervisor	Prof. Eliano Pessa, chair of Artificial Intelligence
Principal topics	<b>Human biology (BS level, 180 ECTS)</b> <b>Experimental Psychology and Artificial Intelligence (M.Sc. level, 180 ECTS)</b>
Organisation providing education and training	Faculty of Medicine and Psychology. University of Rome "La Sapienza"

## Teaching and supervising

Dates	Academic year 2019-2020
Supervising activity	Supervisor M.Sc. thesis, candidate: Marianna Lanza
Academic organization	Faculty of Medicine and Psychology. University of Rome "Sapienza"
Dates	March 2019 – today
Teaching activity	Lecturer for the postgraduate course of "Model-based Data Analysis", Advanced School in Artificial Intelligence
Academic organization	National Research Council (CNR), Italy
Dates	Academic year 2015-2016
Supervising activity	Supervisor M.Sc. thesis, candidate: kate Ergo (first part of the thesis denominated: "Research Internship")
Academic organization	Ghent University, Departement of Experimental Psychology, Belgium
Dates	1 <sup>st</sup> semester 2012 – March 2018
Teaching activity	Co-lecturer for the postgraduate course of "Modelling of Cognitive Processes", Prof. Tom Verguts
Academic organization	Ghent University
Dates	October 2010 →September 2014
Supervising activity	Member of the guidance committee for the doctoral project "Reinforcement Learning in Higher Order Cognition"
Academic organization	Ghent University, supervisors Prof. Tom Verguts, Prof. Wim Fias; candidate: Eliana Vassena
Dates	October 2012 →September 2016
Supervising activity	Member of the guidance committee for the doctoral project "Dynamic adaptation of cognitive control"
Academic organization	Ghent University, supervisors: Prof. Tom Verguts, Dr. Filip van Opstal; candidate: Esther de Loof

## Fellowships and awards

Date	May 2018
Name of grant	H2020 Marie Skłodowska-Curie Individual Fellowship for the project: "Robotic embodiment of a meta-learning neural model of human decision-making." Grant Agreement No. 795919. By European Commission. Host: National Research Council, Rome, Italy
Date	February 2017
Name of grant	Grant for visiting researcher role, project: "Embodiment of reinforcement learning neural model for cognitive control." Grant agreement No. V409517N, by Flemish Research Foundation (FWO).
Date	May 2015
Name of grant	Training Grant for attending the Machine Learning school at Kyoto University, by Flemish Research Foundation (FWO).
Date	September 2004
Name of competition	Prize "Young Researcher", AIP congress, section of Artificial Intelligence and Connectionist Models
Date	November 2003
Name of competition	Ranked first in the competitive examination for the access to the PhD school, and awarded with 3-years national grant. University of Rome "La Sapienza"

## Reviewer activity

Neurosci. Biobehav. Rev., Cogn. Neurodyn., Cereb. Cortex, Neuroimage, Front. Psychol., CogSci Proceedings, Plos One, Curr. Neuropharmacol., Comput. Cogn. Sci., Biol. Psych.

## Publications (selected)

### Metrics

Number of journal articles: 26; Number of book chapters: 3; H-index: 16 (Scopus), 18 (G. Scholar); Total citations: 940 (Scopus), 1349 (G. Scholar).

### Selected list of publications

1. Caligiore D, Silvetti M, D'Amelio M, Puglisi-Allegra S, Baldassarre G (2020). Computational Modeling of Catecholamines Dysfunction in Alzheimer's Disease at Pre-Plaque Stage. *JOURNAL OF ALZHEIMER'S DISEASE*, vol. 77, p. 275-290, ISSN: 1387-2877, doi: 10.3233/JAD-200276
2. Silvetti M, Baldassarre G, Caligiore D (2019). A Computational Hypothesis on How Serotonin Regulates Catecholamines in the Pathogenesis of Depressive Apathy. In: *Multiscale Models of Brain Disorders*. Springer International Publishing - Springer Nature
3. Silvetti M, Vassena E, Abrahamse E, Verguts T (2018). Dorsal anterior cingulate-brainstem ensemble as a reinforcement meta-learner. *PLOS COMPUTATIONAL BIOLOGY*, ISSN: 1553-734X, doi: <https://doi.org/10.1371/journal.pcbi.1006370>
4. Silvetti M, Lasaponara S, Lecce F, Dragone A, Macaluso E, Doricchi F (2015). The response of the Left Ventral Attentional System to Invalid targets and its implication for the Spatial Neglect Syndrome. A Multivariate fMRI Investigation. *CEREBRAL CORTEX*, vol. 26, p. 4551-4562, ISSN: 1047-3211, doi: 10.1093/cercor/bhv208
5. Verguts T, Vassena E, Silvetti M (2015). Adaptive effort investment in cognitive and physical tasks: a neurocomputational model. *FRONTIERS IN BEHAVIORAL NEUROSCIENCE*, vol. 9, ISSN: 1662-5153, doi: 10.3389/fnbeh.2015.00057
6. Silvetti M, Alexander W, Verguts T, Brown J (2014). From conflict management to reward-based decision making: actors and critics in primate medial frontal cortex.. *NEUROSCIENCE AND BIOBEHAVIORAL REVIEWS*, vol. 46, p. 44-57, ISSN: 0149-7634, doi: 10.1016/j.neubiorev.2013.11.003
7. Silvetti M, Nuñez Castellar E, Roger C, Verguts T. (2013). Reward expectation and prediction error in human medial frontal cortex: An EEG study. *NEUROIMAGE*, vol. 84, p. 376-382, ISSN: 1053-8119, doi: 10.1016/j.neuroimage.2013.08.058
8. Silvetti M, Seurinck R, Verguts T (2013). Value and prediction error estimation account for volatility effects in ACC: A model-based fMRI study. *CORTEX*, vol. 49, p. 1627-1635, ISSN: 0010-9452, doi: 10.1016/j.cortex.2012.05.008
9. Silvetti M, Seurinck R, van Bochove M, Verguts T (2013). The influence of the noradrenergic system on optimal control of neural plasticity. *FRONTIERS IN BEHAVIORAL NEUROSCIENCE*, vol. 7, ISSN: 1662-5153, doi: 10.3389/fnbeh.2013.00160
10. Silvetti M, Wiersema JR, Sonuga-Barke E, Verguts T (2013). Deficient reinforcement learning in medial frontal cortex as a model of dopamine-related motivational deficits in ADHD. *NEURAL NETWORKS*, vol. 46, p. 199-209, ISSN: 0893-6080, doi: 10.1016/j.neunet.2013.05.008