

# CURRICULUM VITAE



## PERSONAL INFORMATION

Name: **Giulio Matteucci**, Birthday: **14/10/1991**,  
Gender: **Male**, Nationality: **Italian**, ORCID: 0000-0003-1165-9671  
Website: [www.giuliomatteucci.net](http://www.giuliomatteucci.net)

## EDUCATION

09/2022 --- **Arousal, Attention and Motivation NSAS2022 summer school**

Institution: Neuroscience School of Advanced Studies, Venice, Italy.

Organizer: Gary Aston-Jones

From 09/2016 to 02/2020 --- **Ph.D. in Cognitive Neuroscience** (cum laude)

Institution: International School for Advanced Studies (SISSA), Trieste, Italy.

Thesis title: *"Multidisciplinary investigation of shape and motion processing in the rat visual cortex"*

Supervisor: Davide Zoccolan

11/2018 --- **Artificial Intelligence and Learning QSB2018 winter school**

Institution: International Center for Theoretical Physics, Trieste, Italy.

Organizers: Antonio Celani and Davide Zoccolan

08/2018 --- Cajal Course in **Computational Neuroscience CCCN2018 summer school**

Institution: Champalimaud Center for the Unknown, Lisbon, Portugal.

Organizers: Christian Machens and Joe Paton

From 09/2013 to 12/2015 --- **M.Sc. in Physics** (110/110 summa cum laude)

Institution: University of Turin, Turin, Italy.

Thesis title: *"Neural coding in rat primary visual cortex"*

Supervisors: Mario Ferraro and Davide Zoccolan

07/2014 --- **Neuron technology SISSA summer school**

Institution: International School for Advanced Studies, Trieste, Italy.

Organizer: Vincent Torre

From 09/2010 to 07/2013 --- **B.Sc. in Physics** (110/110)

Institution: University of Turin, Turin, Italy.

Thesis title: *"Functional connectivity analysis of MEA-cultured neuronal networks"*

Supervisors: Mario Ferraro and Davide Lovisolo

## EMPLOYMENT

From 03/2020 to present --- **PostDoc researcher**

Laboratory: *"Experimental and Computational Neuroscience Laboratory"* (Sami El- Boustani)

Institution: Department of Basic Neurosciences, University of Geneva, Geneva, Switzerland.

From 12/2015 to 09/2016 --- **Graduate research intern**

Laboratory: *"Visual Neuroscience Laboratory"* (Davide Zoccolan)

Institution: Cognitive Neuroscience Sector, International School for Advanced Studies, Trieste, Italy.

From 01/2013 to 06/2013 --- **Undergraduate research intern**

Laboratory: "*Cellular Neurophysiology Laboratory*" (Davide Lovisolo)

Institution: Department of Life Sciences and System Biology, University of Turin, Turin, Italy.

## STUDENT SUPERVISION AND TEACHING EXPERIENCE

From 09/2021 to present --- **Charlie Foucher-Desombre** (co-supervised master student)

Program: Master in Neuroscience, University of Geneva, Switzerland.

Topic: "*Optogenetic dissection of visuotactile integration in associative cortical networks*"

From 09/2020 to 02/2023 --- **Lucile Favero** (master student)

Program: Master in Neuroscience, University of Geneva, Switzerland.

Topic: "*Rational design of goal-directed behavioral tasks in mice*"

From 08/2019 to 10/2019 --- **Anna Vasilevskaya** (Erasmus intern)

Program: Master in Neuroengineering, Technische Universität München, Germany.

Topic: "*Motion processing in a 3D-convolutional neural network trained for action recognition*"

From 10/2017 to 10/2018 --- **Benedetta Zattera** (master student)

Program: Master in Cognitive Science, University of Trento, Italy.

Topic: "*Visual motion integration in the rat visual cortex*"

04/2023 --- **tutorial lecture on "the role of motivation during learning and decision making"**

Program: "Chapitres choisis" lecture series, Faculty of Medicine, University of Geneva, Switzerland.

30/04/2023 --- **evaluator for neuroscience students poster fair "neuromaster day"**

Program: Master in Neuroscience, University of Geneva, Switzerland.

11/2018 --- **tutorial lectures on convolutional neuronal networks**

Program: QSB2018 winter school International Center for Theoretical Physics, Trieste, Italy.

## AWARDS AND FELLOWSHIPS

06/2023 Young Swiss Society for Neuroscience (ySSN) **travel grant 2023**

03/2021 International School for Advanced Studies (SISSA) **best Ph.D. thesis award 2021**

06/2018 Boehringer Ingelheim Fonds **travel grant 2018**

11/2016 Italian Ministry of Education, Universities and Research **Ph.D. scholarship**

01/2016 International School for Advanced Studies **pre-Ph.D fellowship**

## PEER-REVIEWING ACTIVITY

Ad-hoc **reviewer** for:

- *eNeuro*
- *Cognitive Computation*
- *Computational Brain & Behavior*
- *Scientific Reports*
- *Frontiers in Psychology*

## PEER-REVIEWED PUBLICATIONS

- 1) **Matteucci G**, Bellacosa Marotti R, Riggi M, Rosselli FB, Zoccolan DF (2019), *Nonlinear processing of shape information in rat lateral extrastriate cortex*, **Journal of Neuroscience**
- 2) **Matteucci G**, Zoccolan DF (2020), *Unsupervised experience with temporal continuity of the visual environment is causally involved in the development of V1 complex cells*, **Science Advances**
- 3) \***Matteucci G**, \*Riggi M, Zoccolan DF (2020), *A template-matching algorithm for laminar identification of cortical recording sites from evoked response potentials*, **Journal of Neurophysiology**
- 4) \***Matteucci G**, \*†Zattera B, Bellacosa Marotti R, Zoccolan DF (2021), *Rats spontaneously perceive global motion direction of drifting plaids*, **PLoS Computational Biology**
- 5) **Matteucci G**, Guyoton M, Auffret M, Foustoukos G, Mayrhofer J, Petersen C, El-Boustani S (2022), *Cortical sensory processing across motivational states during goal-directed behavior*, **Neuron**
- 6) **Matteucci G**, Bellacosa Marotti R, †Zattera B, Zoccolan DF (2023), *Truly pattern: Nonlinear integration of motion signals is required to account for the responses of pattern cells in rat visual cortex*, **Science Advances**
- 7) **Matteucci G**, Piasini E, Zoccolan DF (2024), *Unsupervised learning of mid-level visual representations*, **Current Opinion in Neurobiology**
- 8) \*Guyoton M, \***Matteucci G**, †Foucher C, El-Boustani S (2024), *Cortical circuits for goal-directed cross-modal transfer learning*, **bioRxiv pre-print**
- 9) Roig-Puiggros S, Guyoton M, Suchkov D, Fortoul A, Fièvre S, **Matteucci G**, Maino E, †Foucher C, Fuciec D, Klingler E, Cappello S, Francis F, Watrin F, Minlebaev M, El-Boustani S, Manent J, Jabaudon D (2024), *Emergence of cortical function in self-organizing heterotopic neurons*, **bioRxiv pre-print**
- 10) \***Matteucci G**, \*†Favero L, Guyoton M, El-Boustani S (2024), *A theoretical framework for studying sensorimotor learning during goal-directed tasks in water-restricted mice*, **in preparation**

\* equal contribution †supervised student

## SKILLS AND COMPETENCES

Linguistic competences:

- **English** (excellent knowledge certified B2 level)
- **Italian** (mother tongue)
- **French** (good knowledge, certified B2 level)
- **German** (basic knowledge, certified B1 level)
- **Chinese** (elementary)

Programming skills:

- **MATLAB** (excellent knowledge)
- **Python** (good knowledge)
- **C++** (basic knowledge)

Laboratory skills:

- ***In vivo two-photon calcium imaging*** (in head-fixed mice)
- ***Widefield calcium and intrinsic imaging*** (in head-fixed mice)
- ***Acute in vivo extracellular recordings*** (silicon probes, in anesthetized rats)
- ***Chronic in vivo extracellular recordings*** (wire electrodes, in freely moving rats)
- ***Optogenetics in vivo*** (in head-fixed behaving mice)
- ***Rodent behavioral training***
- ***Rodent surgery and care***
- ***Rodent brain perfusion and fixation***

Graphic skills:

- ***Adobe Illustrator*** (good knowledge)
- ***Adobe Photoshop*** (basic knowledge)

## CERTIFIED ONLINE COURSES

08/2022	<i>“Reinforcement Learning Specialization”</i> (by Adam and Martha White - Coursera)
08/2018	<i>“Neuronal Dynamics of Cognition”</i> (by Wulfram Gerstner - EdX)
03/2018	<i>“Deep Learning Specialization”</i> (by Andrew Ng - Coursera)
03/2016	<i>“Cellular Mechanisms of Brain Function”</i> (by Carl Petersen - EdX)
07/2017	<i>“Introduction to Psychology”</i> (by Steve Joordens - Coursera)
06/2017	<i>“Neural Networks for Machine Learning”</i> (by Geoffrey Hinton - Coursera)
03/2017	<i>“Machine Learning”</i> (by Andrew Ng - Coursera)
03/2013	<i>“Synapses, Neurons and Brains”</i> (by Idan Segev - Coursera)

## POSTER PRESENTATIONS AND TALKS

01/2024	--- <i>Swisskors Meeting 2024</i> ( <b>talk</b> ), Zurich, Switzerland
11/2023	--- <i>SFN Meeting 2023</i> ( <b>poster</b> ), Washington DC, USA
10/2023	--- <i>FENS Structuring Knowledge for Flexible Behaviour</i> ( <b>poster</b> ), Rungsted Kyst, Denmark
07/2023	--- <i>SSN-ySSN Meeting 2023</i> ( <b>poster</b> and <b>short talk</b> ), Lugano, Switzerland
07/2022	--- <i>FENS Forum 2022</i> ( <b>poster</b> ), Paris, France
07/2022	--- <i>Barrel Meeting 2022</i> ( <b>poster</b> ), Lausanne, Switzerland
09/2021	--- <i>Giessbach Meeting 2021</i> ( <b>poster</b> and <b>talk</b> ), Brienz, Switzerland
01/2021	--- <i>Swisskors Meeting 2022</i> ( <b>talk</b> ), Virtual
04/2019	--- <i>COSYNE 2019</i> ( <b>poster</b> ), Lisbon, Portugal
08/2018	--- <i>European Conference on Visual Perception 2018</i> ( <b>poster</b> ), Trieste, Italy
10/2017	--- <i>International Conference on Computer Vision 2017</i> , Venice, Italy
09/2017	--- <i>Cortical Dynamics HBP Workshop</i> , Rovereto, Italy
09/2016	--- <i>Bernstein Conference 2016</i> ( <b>poster</b> ), Berlin, Germany