

CURRICULUM VITÆ

PERSONAL INFORMATIONS

GIULIO MATTEUCCI

Born in Turin, Italy, 14/10/1991

Nationality: Italian

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EMPLOYMENT

03/2020 --- **Postdoctoral researcher** in Neuroscience

at the “*Experimental and Computational Neuroscience Laboratory*”.

Department of Basic Neurosciences, Faculty of Medicine,

University of Geneva, **Geneva**, Switzerland.

principal investigator: Prof. Sami El- Boustani

EDUCATION

02/2020 --- **PhD in Cognitive Neuroscience**

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

awarded **cum laude**.

thesis title: “*Multidisciplinary investigation of shape and motion processing in the rat visual cortex*”

supervisor: Prof. Davide Zoccolan

external examiners: Prof. Laurentz Wiskott, Prof. Paolo Medini

internal examiners: Prof. Matthew Diamond, Prof. Domenica Buetti

12/2015 --- **M.S. in Physics** (laurea magistrale in fisica)

University of Turin, **Turin**, Italy.

grade: **110/110 summa cum laude** (lode e menzione d’onore).

thesis title: “*Neural coding in rat primary visual cortex*”

supervisors: Prof. Mario Ferraro, Prof. Davide Zoccolan, Dott. Federica Rosselli

07/2013 --- **B.S. in Physics** (laurea triennale in fisica)

University of Turin, **Turin**, Italy.

grade: **110/110**

thesis title: *“Functional connectivity analysis of MEA-cultured neuronal networks”*

supervisors: Prof. Mario Ferraro, Prof. Davide Lovisolo

07/2010 --- **High school degree** (maturità linguistica)

Liceo Classico “V. Gioberti”, **Turin**, Italy.

grade: **98/100**

TRAINING – SCHOOLS

12 to 28/11/2018 ---- **“Artificial Intelligence and Learning”** QSB2018 winter school

International Center for Theoretical Physics, **Trieste**, Italy.

Organized by Prof. Antonio Celani and Prof. Davide Zoccolan.

13 to 31/08/2018 ---- **“Cajal Course in Computational Neuroscience”** CCCN2018 summer school

Champalimaud Center for the Unknown, **Lisbon**, Portugal.

Organized by Prof. Christian Machens and Prof. Joe Paton.

14 to 25/07/2014 ---- **“Neuron Technology”** 4th neurobiology SISSA summer school

International School for Advanced Studies, **Trieste**, Italy.

Organized by Prof. Vincent Torre.

TRAINING – COURSES

Master courses attended: *“Biophysics”* (30L/30), *“Systems and Computational Biology”* (30L/30), *“Molecular Biology”* (30L/30), *“Neural Networks”* (30L/30), *“Solid State Physics”* (30/30), *“Solid State Physics Laboratory”* (30/30), *“Microelectronics”* (30/30), *“Microelectronics Laboratory”* (30L/30), *“Optoelectronics”* (30L/30).

Doctoral courses attended: “*From Neuron to Brain*”, “*Language Reading and the Brain*”, “*Introduction to Computational Neuroscience*”, “*Introduction to Systems Neuroscience*”, “*Cognitive Neuroscience*”, “*Arduino and Microcontrollers*”.

Online courses attended: “*Deep Learning Specialization*” (by Andrew Ng - Coursera), “*Neuronal Dynamics of Cognition*” (by Wulfram Gerstner, École Polytechnique de l'Université de Lausanne - EdX), “*Cellular Mechanisms of Brain Function*” (by Carl Petersen, École Polytechnique de l'Université de Lausanne - EdX), “*Introduction to Psychology*” (Steve Joordens, Toronto University - Coursera), “*Neural Networks for Machine Learning*” (by Geoffrey Hinton, Toronto University - Coursera), “*Machine Learning*” (by Andrew Ng, Stanford University - Coursera).

SKILLS AND COMPETENCES

Linguistic competences:

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

Programming skills:

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

Laboratory skills:

- **Acute in vivo extracellular recordings** (multichannel silicon probes)
- **Chronic in vivo extracellular recordings** (wire electrodes)
- **Rodent behavioral training** (psychophysics)
- **Rodent surgery**
- **Rodent care and handling**
- **Rodent brain perfusion and fixation**

Graphic skills:

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

INTERNSHIPS

01/01 to 01/12/2016 --- **Pre-doctoral internship** at the “*Visual Neuroscience Laboratory*”

Working on the **rat visual cortex** in vivo, under the supervision of Prof. D. Zoccolan.
Cognitive Neuroscience Sector, International School for Advanced Studies, Trieste, Italy.

01/03 to 01/12/2015 --- **Undergraduate internship** at the “*Visual Neuroscience Laboratory*”

Working on the **rat visual cortex** in vivo, under the supervision of Prof. D. Zoccolan.
Cognitive Neuroscience Sector, International School for Advanced Studies, Trieste, Italy.

10/01 to 10/06/2013 --- **Internship** at the “*Cellular Neurophysiology Laboratory*”

Working on immortalized **GnRH neurons** in vitro, under the supervision of Prof. D. Lovisolo.
Department of Life Sciences and System Biology, University of Turin, Turin, Italy.

AWARDS AND FELLOWSHIPS

28/06/2018 --- Boehringer Ingelheim Fonds travel grant

01/11/2016 --- Italian Ministry of Education, Universities and Research PhD scholarship

01/01/2016 --- International School for Advanced Studies pre-doctoral fellowship

CONFERENCES AND WORKSHOPS ATTENDANCES

04/2019 --- **Computational and Systems Neuroscience 2019**, Lisbon, Portugal

10/2017 --- **International Conference on Computer Vision**, Venice, Italy

09/2017 --- **Cortical Dynamics HBP Workshop**, Rovereto, Italy

09/2016 --- **Bernstein Conference on Computational Neuroscience**, Berlin, Germany

STUDENT SUPERVISION

12/08/2019 to 12/10/2019 --- *Anna Vasilevskaya*

Erasmus intern, master in Neuroengineering, Technische Universität München, Munich, Germany.

12/10/2017 to 12/10/2018 --- *Benedetta Zattera*

Master student, master in Cognitive Science, CIMEC, University of Trento, Trento, Italy.

TEACHING EXPERIENCE

11/2018 --- Hands-on **tutorial lectures on Convolutional Neuronal Networks**

“Artificial Intelligence and Learning” QSB2018 winter school International Center for Theoretical Physics, Trieste, Italy.

SCIENCE OUTREACH EXPERIENCE

09/04/2019 --- **Live interview** at RADAR **radio** show (RAI Friuli-Venezia Giulia)

web podcast: <http://www.rai.it/dl/portali/site/articolo/ContentItem-7270551c-a2e6-40d3-8f20-e6c93d865a25.html>

CONFERENCE ABSTRACTS

1. **Matteucci G**, Zoccolan DF (2019) ***The causal role of unsupervised temporal learning in the development of complex cells in primary visual cortex***. Computational and Systems Neuroscience (CoSyNe) 2019, Lisbon.
2. **Matteucci G**, Bellacosa Marotti R, Zattera B, Zoccolan DF (2018) ***Linear receptive field structure does not account for pattern motion responses in rat visual cortex***. European Conference on Visual Perception 2018, Trieste.
3. Grion N, Montano I, **Matteucci G**, Zoccolan DF (2018) ***Dark-reared rats develop higher visual acuity than controls in an orientation discrimination task***. European Conference on Visual Perception 2018, Trieste.
4. *Rosselli FB, ***Matteucci G**, Bellacosa Marotti R, Zoccolan DF (2016) ***Receptive field structure of visually selective neurons in rat visual cortex***. Bernstein Conference 2016, Berlin (<https://doi.org/10.12751/nncn.bc2016.0142>). *contributed equally

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, 1938-18 (<https://doi.org/10.1523/JNEUROSCI.1938-18.2018>).
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***, bioRxiv, 756668 (<https://doi.org/10.1101/756668>) – accepted for publication in 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***, bioRxiv, 749069 (<https://doi.org/10.1101/749069>) – submitted to Journal of Neurophysiology. **contributed equally*
4. Zattera B*, **Matteucci G***, Bellacosa Marotti R, Zoccolan DF (2020) ***Behavioral evidence of spontaneous motion integration in rats*** – in preparation. **contributed equally*
5. **Matteucci G**, Zattera B, Bellacosa Marotti R, Zoccolan DF (2020) ***Linear receptive field structure does not account for pattern motion responses in rat visual cortex*** – in preparation.
6. **Matteucci G***, Zattera B*, Zoccolan DF (2020) ***Neural substrate of motion priming in rat V1*** – in preparation. **contributed equally*

REVIEWER ACTIVITY

Ad-hoc reviewer for: eNeuro, Computational Brain & Behavior, Scientific Reports.