

Curriculum Vitae

Alessandro Thomas Gifford
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Department of Education and Psychology
Neural Dynamics of Visual Cognition Group
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Education

- 2021 **Ethics of Neuroscience and AI – Winter School**
Bernstein Center for Computational Neuroscience, Berlin, Germany
- 2020 - 2021 **Machine Intelligence I course**
Technische Universität Berlin, course number 0434 L 866
- 2020 - 2021 **Single Variable Calculus online course**
MIT open courseware, course number 18.01
- 2019 - 2020 **Linear Algebra online course**
MIT open courseware, course number 18.06
- 2017 - 2019 **Master Degree in Cognitive Neuroscience**
CIMeC, University of Trento, Rovereto, Italy
Supervision: Daniel Kaiser, Radoslaw Martin Cichy, Scott Laurence Fairhall
I graduated with a score of 110/110 (with Honor). My thesis focused on scene positional regularities and their cortical representations.
- 2016 - 2017 **Philosophy Exchange Student**
University of John Paul II, Kraków, Poland
Supervision: Jakub Synowiec
I spent a semester at the University of John Paul II as an exchange student with the program *Erasmus+*. I passed all the exams with maximum grades.
- 2014 - 2017 **Bachelor Degree in Philosophy**
University of Trento, Trento, Italy
Supervision: Carlo Brentari, Paola Giacomoni
I graduated with a score of 110/110 (with Honor). My thesis focused on the ‘nature vs. nurture’ debate, with a special focus on human behavior.

Work in Research and Internships

- 2021 **Lab rotation**
Clinical Neurotechnology Lab, Charité, Berlin, Germany
Supervision: Surjo Soekadar
In this lab rotation I worked on the development of Brain Machine Interface (BMI) technology which exploits deep convolutional neural networks to decode mental imagery conditions in real time.
- 2020 - now **Researcher in international PhD program**
Einstein Center for Neuroscience (ECN), Charité, Berlin, Germany

2019 - now

PhD student in visual computational cognitive neuroscience

Neural Dynamics of Visual Cognition Group, Freie Universität, Berlin, Germany
Supervision: Radoslaw Martin Cichy, Hauke Heekeren

My research focuses in creating encoding models which predicts, in the form of EEG data, neural activity deriving from the viewing of objects: for this I use deep convolutional neural networks and machine learning. Due to the amount of data required for the training of these models, I use rapid-image-presentation EEG paradigms.

2018 - 2019

Internship in visual computational cognitive neuroscience

Neural Dynamics of Visual Cognition Group, Freie Universität, Berlin, Germany
Supervision: Daniel Kaiser, Radoslaw Martin Cichy

I conducted an EEG project which investigated how positional regularities influence the cortical processing of visual scenes. The analyses involved the use of Representational Similarity Analysis (RSA), Multivariate Pattern Analysis (MVPA) and deep neural networks. We found that positional regularities rapidly reorganize the cortical processing of visual scenes, and that this effect is mostly conveyed by high/spatial frequencies.

2018

EEG data collection in visual cognitive neuroscience

Mechanisms of Active Perception Group, CIMeC, Rovereto, Italy
Supervision: Christoph Huber-Huber

During this internship, I learned the different steps of EEG data collection, from subject recruitment to data recording.

2017 - 2018

University Tutor

University of Trento, Trento, Italy

I helped students in studying for exams preparation, and also in the handling of administrative issues. Furthermore, I organized and did English courses to improve students' language skills.

Funding

2020 - now

Einstein Center for Neuroscience (ECN) scholarship
Charité, Berlin, Germany

PhD scholarship awarded by the Einstein Center for Neuroscience, Berlin, Germany.

Computational and Analytical Skills

- Programming (Python, Matlab, Bash)
- HPC cluster computing (slurm)
- Deep Learning (PyTorch)
- Machine learning (scikit-learn)
- BCI analyses (Braindecode)
- M/EEG and fMRI multivariate analysis (RSA, MVPA)
- Linear algebra
- Calculus

Academic References

Radoslaw Martin Cichy

Professor

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Daniel Kaiser

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Department of Psychology
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Spoken languages

English (native), **Italian** (native), **French** (good), **German** (beginner).