

# Margherita Calderan, Ph.D.

My research interests include computational models of cognition, Bayesian statistics, and metascience.

 [margherita.calderan@gmail.com](mailto:margherita.calderan@gmail.com)     [github.com/Mar-Cald](https://github.com/Mar-Cald)     [gitlab.pavlovia.org/mar.cald](https://gitlab.pavlovia.org/mar.cald)     [ResearchGate](https://www.researchgate.net/profile/mar-cald)     [OSF](https://osf.io/7gkqz/)

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## Current Position

### Postdoctoral Researcher

*Department of General Psychology, University of Padova, Italy*

Oct. 2024 - Present

- Tails or types? Testing the dimensional hypothesis in neurodevelopmental disorders
- Supervisor: Prof. Enrico Toffalini
- 1.5 year research grant

## Education

### Ph.D. in Psychological Sciences - cum laude

*University of Padova, Italy*

Oct. 2021 - Oct. 2024

- Thesis: Balancing stability and flexibility in cognitive control and learning: the effects of arousal
- Supervisors: Prof. Roberta Sellaro, Prof. Nicola Cellini

### Postgraduate Internship

*Psychophysiology Lab, University of Padova, Italy*

Jan. 2021 - Dec. 2021

- Investigated the role of sleep characteristics in false memory formation and emotional reactivity.
- Supervisors: Prof. Andrea Spoto, Prof. Nicola Cellini

### M.S. in Cognitive Neuroscience and Clinical Neuropsychology - 110 cum laude

*University of Padova, Italy*

Oct. 2018 - Dec. 2020

- Thesis: Sleep characteristics in adults with high functioning autism: a polysomnographic study
- Supervisor: Prof. Nicola Cellini

**Curricular Internship**

*Psychophysiology Lab, University of Padova, Italy*

Dec. 2019 - Aug. 2020

- Analyzed polysomnographic data to examine sleep architecture in young adults with high-functioning autism.
- Collaborated with the University of Trento and the University of Tübingen.
- Supervisor: Prof. Nicola Cellini

**B.S. in Cognitive Psychology and Psychobiology - 109/110**

*University of Padova, Italy*

Sept. 2015 - July 2018

- Thesis: Gender differences in the long-term consolidation of emotional memories
- Supervisor: Prof. Michela Sarlo

## **Abroad**

### **Visiting PostDoc**

*Department of Biomedical Data Sciences, Leiden University Medical Center, the Netherlands*  
1.5 months (Sept. 2025 - Oct. 2025)

- Research on Bayesian approaches to the problem of multiplicity.
- Supervisor: Prof. Jelle Goeman

### **Visiting PhD student**

*Cognitive Psychology Unit, University of Leiden, the Netherlands*  
4 months (Feb. 2024 - Jun. 2024)

- Research about the effects of mind-wandering on cognitive flexibility.
- Supervisor: Prof. Bryant Jongkees

### **Research Intern**

*Donders Sleep and Memory Lab, Donders Institute, the Netherlands*  
2 months (Jun. 2019 – Aug. 2019)

- Assisted with a project on the association between affective memory bias, medial prefrontal schema processing, and sleep in depressed patients and healthy controls.
- Assisted with a project on lucid dream induction.
- Supervisor: Prof. Martin Dresler

### **Erasmus +**

*Jaume I University, Spain*  
5 months (Feb. 2015 – July. 2015)

- Completed a semester-long academic exchange as part of my undergraduate studies.

## Publications

### Published

1. **Calderan, M.**, Jongkees, J.B., Gambarota, F., Pastore, M., Cellini, N., & Sellaro, R. (2025) Isolating working memory gating processes under stress. *Collabra:Psychology*. <https://doi.org/10.1525/collabra.140750> [IF: 3.1, Quartile: Q1], OSF repo: <https://osf.io/d43vs/>
2. **Calderan, M.**, Toffalini, E., Mirandola, C., & Cellini, N. (2025). Sleep does not affect false memory production on a script-based test. *Neuropsychologia*. <https://doi.org/10.1016/j.neuropsychologia.2025.109210> [IF: 2, Quartile: Q3] OSF repo: <https://osf.io/kwycq/>
3. Toffoli, L., **Calderan, M.**, Del Popolo Cristaldi, F., Duma, G. M., Calcagnì, A., Pastore, M., Tarantino, V., & Mento, G. (2025). Can I afford one more candy? How motivational contexts shape adaptive cognitive control in children. *Developmental Psychology*. <https://doi.org/10.1037/dev0001976>. [IF: 3.1, Quartile: Q2], OSF repo: <https://osf.io/shuq2/>
4. Sobol, M., Błachnio, A., **Calderan, M.**, Degasperi, G., Mioni, G., Hryhorchuk, I., Plucińska, E., Stasiniewicz, J., Kwapiński, J., Jankowski, K., & Cellini, N. (2025). Balanced time perspective as a factor mitigating the negative consequences of sleep disruptions in the perinatal period. *Chronobiology International*, 1–12. <https://doi.org/10.1080/07420528.2025.2490499> [IF: 2.2, Quartile: Q3]
5. **Calderan, M.**, & Visalli, A. (2024). Challenges of meta-learning and rational analysis in large worlds. *Behavioral and Brain Sciences*, 47, e148. <https://doi.org/10.1017/S0140525X24000128>. Target paper and commentaries: [https://cldlab.org/static/papers/Binz\\\_2024\\\_BBS.pdf](https://cldlab.org/static/papers/Binz\_2024\_BBS.pdf) [IF: 16.6, Quartile: Q1]

### Under Review

1. **Calderan, M.**, Visalli, A., Degasperi, G., Toffoli, L., Sellaro, R., & Cellini, N. Predictions under sleep restriction: The effects of partial sleep deprivation on learning and inhibitory control. Under Review in *Royal Society Open Science*. Preprint: [https://doi.org/10.31234/osf.io/x7m4z\\\_\\\_v3](https://doi.org/10.31234/osf.io/x7m4z\_\_v3).
2. Visalli, A., Calistroni, F. M., **Calderan, M.**, Donnarumma, F., Zorzi, M., & Ambrosini, E. A computational framework for integrating Predictive processes with evidence Accumulation Models (PAM). Under Review in *Behavior Research Methods*. Preprint: <https://doi.org/10.48550/arXiv.2411.13203>.
3. Toffalini, E., **Calderan, M.**, Pagan, R., Tobia, V. & Sonuga-Barke, E. A Critical Tails or Types? A Critical Systematic Review of Taxometric Studies of Neurodevelopmental Conditions. Under review in *Journal of Child Psychology and Psychiatry* <https://github.com/EnricoToffalini/Taxometrics-Neurodevelopmental-Disorders/tree/main>
4. Mazzoni, N., Kurz, E.V., Cellini, N., Cirignone, L., **Calderan, M.**, Gallitto, G., Falco, S., Venuti, P., Zinke, K., Born, J., & Caria, A., Aperiodic and periodic neural activity during sleep in autism spectrum disorders. Under Review in *BMC medicine*.

## Preregistration

1. Sirota, M., Šrol, J., Lisi, M., Juanchich, M., Guglani, K., Silverstein, P., ... **Calderan, M.**, ... Schmidt, K. (2025, January 14). Mapping and Increasing Error Correction Behaviour in a Culturally Diverse Sample. **Preprint:** <https://doi.org/10.17605/OSF.IO/WN4VX>.
2. Toffalini, E., **Calderan, M.**, Feraco, T., & Gambarota, F. Link Functions and Generalized Linear Models in Interaction Testing within Psychological Research. <https://osf.io/sjdu4>

## In Preparation

1. Barbiero, J., **Calderan, M.**, & Mioni, G., The contribution of cerebellum in time perception: A systematic review and meta-analyses. In preparation for *Wiley Interdisciplinary Reviews-Cognitive Science*
2. Toffoli, L., **Calderan, M.**, Stefanelli, G., Duma, G.M., Del Popolo Cristaldi, F., Duma, G., Pastore, M., Frisina, S., Tarantino, V., & Mento, G., I am talking to you! Engagement modulates the effects of digital contents exposure on preschoolers' adaptive cognitive control. In preparation for *Developmental Sciences*.
3. **Calderan, M.**, van Dooren, R., Sellaro, R., & Jongkees, J.B., Dynamic and contextual modulation of constraints on cognitive control. In preparation for *Journal of Experimental Psychology: Human Perception and Performance*.

## Published Abstract

1. **Calderan, M.**, Visalli, A., Sellaro, R., & Cellini, N. (2024). Restless Sleep, Uncertain Minds: Learning and Inhibitory Control Under Partial Sleep Deprivation. Proceedings of the Annual Meeting of the Cognitive Science Society, 46. <https://escholarship.org/uc/item/65b2f0n7>.
2. **Calderan, M.**, Visalli, A., Sellaro, R., & Cellini, N., (2024). The Effects of Partial Sleep Deprivation on Adaptive Cognitive Control. *Sleep Medicine*, <https://doi.org/10.1016/j.sleep.2023.11.156>.
3. **Calderan, M.**, Visalli, A., Sellaro, R., & Cellini, N. (2024). Expecting the unexpected: a closer look at the effect of partial sleep deprivation on learning and inhibitory control. *Journal of Sleep Research*, <https://doi.org/10.1111/jsr.14291>.
4. Baldassarri, A., Colombo, C., Bergamo, D., **Calderan, M.**, Varanini, A., Ferrentino, A., D'atri, A., & Cellini, N. (2024). Exploring the impact of oscillatory events during a nap on emotional memory consolidation. *Journal of Sleep Research*, <https://doi.org/10.1111/jsr.14291>

## Conferences

1. Stefanelli G., Toffoli L., **Calderan M.**, Del Popolo Cristaldi F., Duma G. M., Tarantino V., Visalli A., Sellaro R., Mento G. Apprendimento associativo implicito e volatilità ambientale nell'ADHD. **Video-Poster** at Giornate di aggiornamento sull'uso degli strumenti in Psicologia Clinica dello Sviluppo Bologna (Italy), February 2025.
2. Stefanelli G., Toffoli L., **Calderan M.**, Duma G. M., Del Popolo Cristaldi F., Tarantino V., Visalli A., Sellaro R. & Mento G. Super Learning Bros: Developmental trajectories of probabilistic learning in volatile environment. **Talk** at the Cognitive Science Arena, Brixen (Italy), February 2025.
3. **Calderan, M.**, Visalli, A., Degasperi, G., Calistroni, F.M., Sellaro, R., & Cellini, N. Expecting the unexpected: a closer look at the effect of partial sleep deprivation on learning and inhibitory control. **Poster** presented at Sleep Europe 2024, Seville (Spain), September 2024.
4. **Calderan, M.**, Visalli, A., Degasperi, G., Calistroni, F.M., Sellaro, R., & Cellini, N. Restless Sleep, Uncertain Minds: Learning and Inhibitory Control Under Partial Sleep Deprivation. **Poster** presented at CogSci 2024: Dynamics of Cognition, Rotterdam (Netherlands), July 2024.
5. Degasperi, G., **Calderan, M.**, Mioni, G., Meisner, M., Blachnio, A., Hryhorchuk, I., Plucinska, E., Sobol, M., & Cellini, N. The role of sleep, circadian rhythms, balanced time perspective on perinatal depression symptoms. **Poster** at the Cognitive Science Arena, Brixen (Italy), February 2024.
6. Toffoli, L., **Calderan, M.**, Duma, G. M., Frisina, S., Tarantino V., & Mento, G. I'm talking to you! Interactive digital content effects on children's adaptive cognitive control. **Talk** at the Cognitive Science Arena, Brixen (Italy), February 2024.
7. **Calderan, M.**, Visalli, A., Sellaro, R., & Cellini, N. The Effects of Partial Sleep Deprivation on Adaptive Cognitive Control. **Poster** presented at World Sleep Congress, Rio de Janeiro (Brasil), October 2023.
8. **Calderan, M.**, Visalli, A., Sellaro, R., & Cellini, N. The sleep-deprived predictive brain: modeling the effect of partial sleep deprivation on adaptive cognitive control. **Talk** at the XXIX Conference of the Italian Association of Psychology (AIP) - Experimental Psychology Section. Lucca (Italy), September 2023.
9. **Calderan, M.**, Cellini, N., Sellaro, R., Stressed Minds: Unraveling Acute-Stress Effects on Working Memory Processes. **Mini-Talk** at the Cognitive Science Arena, Brixen (Italy), February 2023.
10. Toffoli, L., **Calderan, M.**, Del Popolo Cristaldi, F., Duma, G. M., Calcagnì, A., Pastore, M., Tarantino, V., & Mento, G. Can I afford one more candy? How motivational contexts shape adaptive cognitive control in children. **Talk** at the Cognitive Science Arena, Brixen (Italy), February 2023.

11. **Calderan, M.**, Cellini, N., Sellarro, R., Exploring the Influence of Stress on Working Memory Gating Mechanisms. **Mini-Talk** at the XXX Conference of the Italian Association of Psychology (AIP). Padova (Italy), September 2022.
12. **Calderan, M.**, Cellini, N., Sellarro, R., Understanding stress-induced Effects on Working Memory gating mechanisms. **Poster** presented at the 22nd meeting of the European Society for Cognitive Psychology (ESCoP), Lille (France), August 2022.

## **Invited talks**

- **From Cognitive Psychology to Bayesian Multiple Testing.** Medical Statistics Meeting, Department of Biomedical Data Sciences, Leiden University Medical Center, Leiden, The Netherlands. 23rd October 2025.
- **Bayesian Multiple Testing.** STAT-Talk Series, Methodology and Statistics Department, Institute of Psychology, Leiden University, Leiden, The Netherlands. 18th September 2025.

## **Awards and Grants**

- **Travel Grant:** European Conference on Visual Perception, Mainz (Germany).
- **Travel Grant:** qHelp international seminar on Quantitative Psychology. Arrifana (Portugal)
- **Painter Award:** Best Poster, Cognitive Science Arena, Brixen (Italy).
- **Erasmus Placement Grant (2 Months):** Donders Sleep and Memory Lab, Nijmegen (The Netherlands).
- **Erasmus Placement Grant (5 Months):** Jaume I University, Castellón de la Plana (Spain).

## **Peer Reviews**

Ad-hoc reviewer (2 reviewed papers) for:

- Frontiers in Psychology - Theoretical and Philosophical Psychology (1)
- Frontiers in Psychology - Cognition (1)

## **Teaching**

### **Lectures on contract (docenze a contratto)**

- **Test per le organizzazioni** (21 hours, 3 CFU). Scheduled for the 2nd semester of the 2025/2026 academic year. Lecturer (titolare di modulo) for the Master's Degree in Psicologia Sociale, del Lavoro e della Comunicazione, University of Padova.
- **Introduction to meta-analysis with application in R** (5 hours, 1 CFU). Scheduled for the 2nd semester of the 2025/2026 academic year. Professor for the course within the PhD program in Psychological Sciences, University of Padova.

## **Seminars**

- **Introduction to R.** An intensive R programming course offered within the ARCA (Applied Research Course Academy) courses, Department of Developmental Psychology and Socialization, University of Padova. Material: <https://github.com/arka-dpss/course-R-2425>
  - December, 2024 (20 hrs.)
  - April, 2025 (20 hrs.)
  - November, 2025 (20 hrs., *planned*)
- **Learning in Dynamic Environments: A Tentative Implementation of the Volatile Kalman Filter in STAN.** Presentation (1 hr.) on a Bayesian-based implementation of a learning algorithm for the 2023/24 Psicostat meeting series: [https://psicostat.dpss.psy.unipd.it/meetings/slides/2024-03-22\\_calderan.pdf](https://psicostat.dpss.psy.unipd.it/meetings/slides/2024-03-22_calderan.pdf)

### **Integrative teaching (Didattica integrativa)**

- **Assistance** during lectures for the course **Testing Psicologico** (Prof. Tatiana Marci), Bachelor's degree in Scienze psicologiche dello sviluppo, della personalità e delle relazioni interpersonali, University of Padova (14 hrs.). Scheduled for the 1st semester of the 2025/2026 academic year.
- Preparation and correction of **practical group exercises** and exams for the course **Experimental Research Methods in Psychology** (Prof. Roberta Sellaro), Master's degree in Developmental and Educational Psychology, University of Padova (14 hrs.).

- **Assistance** in the preparation of exercises and corrections for the course **General Psychology** (Prof. Enrico Toffalini), Bachelor's degree in Techniques and Methods in Psychological Sciences, University of Padova (15 hrs.).
- **Assistance** during lectures and preparation of **practical group exercise** for the course **General Psychology** (Prof. Giovanna Mioni), Bachelor's degree in Social and Work Psychological Sciences, University of Padova (14 hrs.).

## **Workshops**

- **The 3Rs of Trustworthy Science: Reproducibility, Replicability, and Robustness. Theory and Applications in R.** Pre-conference Workshop - **International Biometric Society**, Seul (South Korea). 12 July 2026. Planned hands-on methodological workshop held with Dr. Filippo Gambarota.
- **Generalized Linear Models for Psychology: Understanding, Simulating, and Planning Your Analyses.** Pre-conference Workshop - **Cognitive Science Arena**, Brixen (Italy). 5 February 2026. Planned hands-on methodological workshop held with Dr. Filippo Gambarota.
- **A Practical Introduction to Evidence Accumulation Models in Visual Perception Research.** Pre-conference Workshop - **European Conference on Visual Perception**, Mainz (Germany). 24 August 2025 (2.30 hr.). Hands-on methodological workshop held with Dr. Carolina Maria Oletto. Material: <https://mar-cald.github.io/eam-workshop/eam-home.html>.
- **Introduction to Reproducible Science.** Pre-School workshop - **Replicability Crisis in Science**, Padova (Italy). 6 June 2025 (2 hrs.). Material: <https://github.com/Mar-Cald/repro-pre-school>.
- **Tempi di risposta.** Workshop on reaction time distributions, Univeristy of Padova, Padova (Italy). 10 June 2025 (1 hr.). Material: <https://mar-cald.github.io/tempi/>.

## **Other Academic Roles**

- **Representative of Research Fellows** in the Department of General Psychology, University of Padova. 02/2024 – Present
- **Co-supervision of students** for their internships and Bachelor's (2) and Master's theses (1)

## Organizational Activities

### Methodological School: Replicability Crisis in Science

Member of the **Organizing team**. The school aims to provide a broad and interdisciplinary perspective on replicability, along with tools that help participants explore aspects most relevant to their own field. Lectures cover the epistemological, philosophical, and statistical foundations of replicability and the so-called replication crisis. Students engage in guided group activities to discuss core issues and apply the course concepts to real data analysis. Padova (Italy). (<https://psicostat.github.io/replicability-psychology-unipd-phd>)

- **Lecturers:** Prof. Branden Fitelson, Prof. Giovanni Parmigiani, Dr. Filippo Gambarota

### International Winter School - The 4 Ms: Meta-research, Measurement, Multi-lab, and Multiverse data analysis in Behavioral Sciences

Member of the **Organizing team**. The Winter School aims to address the methodological challenges in behavioral sciences, which impact theory, measurement, and data analysis. Its main purpose is to introduce attendees to advancements in meta-research, providing both theoretical insights and practical tools to conduct rigorous research. Additionally, it aims to foster collaborative networks by enabling attendees to discuss their ongoing projects with teachers and peers, facilitating new collaborations and the application of the presented tools. Padova (Italy). (<https://winterschool4ms.dpg.unipd.it/>)

- **Lecturers:** Prof. Daniël Lakens, Prof. Dorothy Bishop, Prof. Jessica Flake, Prof. Lisa DeBruine, Prof. Ulrich Schimmack, Prof. Carlo Umiltà, Prof. Ettore Ambrosini, Dr. Filippo Gambarota, Dr. Giulia Calignano, Prof. Massimo Grassi, Prof. Livio Finos

## ONIRICAMENTE

Member of the **Organizing team** of the one-day workshop dedicated to public outreach on the Psychology of Sleep. Padova (Italy) (<https://sites.google.com/view/oniricamente/home-page?authuser=0>)

### Cognitive Neuroscience of Sleep Summer School

Member of the **Supporting team**. The Summer School examined methods for investigating sleep and memory in humans and animals. It also covered topics related to sleep medicine and dreaming. Nijmegen (Netherlands)

## **Third Mission (Terza Missione)**

### **Science4all**

*University of Padova, Italy*

2025

- Centra il bersaglio: tra misurazione, probabilità e incertezza. Activity organized by the Psicostat Research Group and proposed during the Science4All activity at the University of Padova (27-28th September 2025)

## **Research Groups Membership**

### **Psicostat**

*University of Padova*

2024 - Present

- I am a core team member of Psicostat, an interdisciplinary research group specializing in quantitative psychology, psychometrics, psychological testing, and statistics.
- <https://psicostat.dpss.psy.unipd.it/people.html>

### **SleePy**

*University of Padova*

2019 - Present

- I am a member of SleePy, a research group focusing on sleep psychology.

## **Collaborations**

### **Prof. Jelle Goeman**

*Leiden University Medical Center, The Netherlands*

2025 - Present

- Research on Bayesian approaches to the problem of multiplicity.

### **Prof. Aldo Solari**

*Ca' Foscari University of Venice, Italy*

2025 - Present

- Research on Bayesian approaches to the problem of multiplicity.

### **Prof. Giovanni Parmigiani**

*Harvard University*

2025 - Present

- Research on Bayesian approaches to the problem of multiplicity.

### **Dr. Bryant Jongkees**

*University of Leiden, The Netherlands*

2024 - Present

- Research on the stability and flexibility dilemma in cognitive control.

### **Dr. Antonino Visalli**

*University of Modena-Reggio Emilia, Italy*

2023 - Present

- Research on computational models of learning and control.

## **Involvement in Research Groups**

### **National Project on Malpractice in Psychological Research**

Collaborative initiative aimed at identifying and addressing **methodological malpractice** in psychological science, with Enrico Toffalini (University of Padova), Filippo Gambarota (University of Padova) and Tommaso Feraco (University of Padova). My contributions include:

- Toffalini, E., **Calderan, M.**, Feraco, T., & Gambarota, F. Link Functions and Generalized Linear Models in Interaction Testing within Psychological Research. <https://osf.io/sjdu4>
- Toffalini, E., **Calderan, M.**, Pagan, R., Tobia, V. & Sonuga-Barke, E. A Critical Tails or Types? A Critical Systematic Review of Taxometric Studies of Neurodevelopmental Conditions. Under review in *Journal of Child Psychology and Psychiatry* <https://github.com/EnricoToffalini/Taxometrics-Neurodevelopmental-Disorders/tree/main>

### **National Project on Adaptive Cognitive Control in Children**

Part of a national research group focused on investigating adaptive cognitive control in typical, at-risk, and atypical populations within a Neuroconstructivist framework, with Giovanni Mento (University of Padova), Fiorella Del Popolo Cristaldi (University of Padova), Lisa Toffoli (University of Padova), Giulia Stefanelli (University of Padova), Gian Marco Duma (Epilepsy and Clinical Neurophysiology Unit, IRCCS E. Medea). The group has contributed to multiple peer-reviewed publications, conference presentations, and posters. My contributions specifically focused on the application of **Bayesian methods**, including **generalized multilevel models** and **survival analysis** techniques, in the following selected works:

- Toffoli, L., **Calderan, M.**, Del Popolo Cristaldi, F., Duma, G. M., Calcagnì, A., Pastore, M., Tarantino, V., & Mento, G. (2025). Can I afford one more candy? How motivational contexts shape adaptive cognitive control in children. *Developmental Psychology*. Advance online publication. <https://doi.org/10.1037/dev0001976>.

- Stefanelli G., Toffoli L., **Calderan M.**, Del Popolo Cristaldi F., Duma G. M., Tarantino V., Visalli A., Sellaro R., Mento G. Apprendimento associativo implicito e volatilità ambientale nell'ADHD. **Video-Poster** at Giornate di aggiornamento sull'uso degli strumenti in Psicologia Clinica dello Sviluppo Bologna (Italy), February 2025.
- Stefanelli G., Toffoli L., **Calderan M.**, Duma G. M., Del Popolo Cristaldi F., Tarantino V., Visalli A., Sellaro R. & Mento G. Super Learning Bros: Developmental trajectories of probabilistic learning in volatile environment. **Talk** at the Cognitive Science Arena, Brixen (Italy), February 2025.
- Toffoli, L., **Calderan, M.**, Duma, G. M., Frisina, S., Tarantino V., & Mento, G. I'm talking to you! Interactive digital content effects on children's adaptive cognitive control. **Talk** at the Cognitive Science Arena, Brixen (Italy), February 2024.
- Toffoli, L., **Calderan, M.**, Del Popolo Cristaldi, F., Duma, G. M., Calcagnì, A., Pastore, M., Tarantino, V., & Mento, G. Can I afford one more candy? How motivational contexts shape adaptive cognitive control in children. **Talk** at the Cognitive Science Arena, Brixen (Italy), February 2023.

## **Training**

### **Model-based Neuroscience Summer School**

*University of Amsterdam, the Netherlands*

29/07/2024 - 02/08/2024

- Hands-on experience in both cognitive modeling using evidence-accumulation models and cognitive neuroscience methods. Three-day introduction to evidence-accumulation modeling using Bayesian inference. Two days focused on how to use the evidence-accumulation framework to formalize performance in complex experimental paradigms, how to construct joint models of multiple tasks using techniques such as hierarchical factor models, and how to combine evidence-accumulation and reinforcement-learning models.
- Lecturers: Prof. Andrew Heathcote, Prof. Dora Matzke, Dr. Michael Nunez, Dr. Steven Miletic, and Dr. Niek Stevenson

### **qHelp international seminar on Quantitative Psychology**

*Arrifana, Portugal*

26/03/2023 - 02/04/2023

- A one-week intensive seminar covering Shiny and R Markdown for interactive data reporting, Copula theory and its applications in dependence modeling, numerical methods, and optimization techniques for computational analysis.
- Lecturers: Julian Mollenhauer, Ana Lourenço, Prof. Luciano Stefanutti, Prof. Hans Colonius, Prof. Francis Tuerlinckx, and Prof. Sérgio Moreira

### **Statistical Rethinking**

*Online Course*

06/01/2023 - 10/03/2023

- Pre-recorded lectures and weekly meetings to discuss the material. This course teaches data analysis, focusing on scientific models: conceptual and causal models. Bayesian data analysis to connect scientific models to evidence.
- Lecturers: Prof. Richard McElreath

### **Fundamentals and Applications of Pupilometry**

*University of Padova, Italy*

20 hours

- This course offers an introduction to the use of pupilometry in cognitive science, combining practical exercises in data processing with free software tools: OpenSesame for implementing classic cognitive psychology tasks and R for analyzing and visualizing continuous pupil diameter changes. Covering key topics such as noise sources, experimental design, data processing options, and the cognitive interpretation of pupillometric measures.
- Professor: Dr. Giulia Calignano

### **EEGLAB: analysis of electroencephalographic data**

*University of Padova, Italy*

20 hours

- The EEGLAB and ERPLAB toolboxes, which operate within MATLAB, facilitate the analysis of electroencephalographic (EEG) data. This course offers foundational skills in data analysis and theoretical knowledge through practical examples, covering key topics such as data pre-processing and event-related potential (ERP) computation.
- Professor: Dr. Mattia Doro

### **Introduction to R**

*University of Padova, Italy*

20 hours

- This course introduces the fundamentals of the open-source programming language R, teaching core programming concepts, data structures, and function creation through practical exercises to build versatile skills applicable across academic and professional settings.
- Professor: Dr. Filippo Gambarota

### **PsychoPy3: experimental programming**

*University of Padova, Italy*

20 hours

- This course introduces participants to PsychoPy, an open-source Python-based software for designing and running behavioral science experiments, teaching them how to create, test, deploy, and manage experiments using its flexible and user-friendly graphical interface.
- Professor: Dr. Thomas Quettier

## **Scientific Societies Membership**

**Cognitive Science Society**

*2024 - Present*

**Italian Reproducibility Network**

*2023 - Present*

**European Sleep Research Society**

*2023 - Present*

**AIP, Sezione Sperimentale**

*2022 - Present*

**Society for the Improvement of Psychological Science**

*2022 - 2023*

**European Society for Cognitive Psychology**

*2021 - 2023*

## **Languages**

**Italian**

*Mother Tongue*

**English**

*Proficient*

**Spanish**

*Beginner*

## **Programming Languages**

**R/R Studio**

*Proficient*

**STAN**

*Intermediate*

**JAGS**

*Basic*

**Python**

*Basic*

**MatLab**

*Basic*

## **Research and Project Management Skills**

### **PsychoPy/Pavlovia and OpenSesame/OSWeb**

*Intermediate*

- Task development for behavioral research.

### **GitHub and GitLab**

*Intermediate*

- Version control and collaboration.

### **Docker**

*Basic*

- Development and deployment of containers.

### **Google Suite, Office Suite**

*Intermediate*

- Gmail, Calendar, Drive, Meet, Docs, Forms, Sheets.

## **Operating Systems**

### **macOS**

*Intermediate*

### **Windows**

*Intermediate*

### **Linux**

*Intermediate*

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I authorize the processing of personal data included in my CV in accordance with Legislative Decree 2018/101 and the GDPR (Regulation EU 2016/679). I hereby declare that the information and details provided in this Curriculum Vitae are true and accurate to the best of my knowledge, acknowledging the legal and criminal consequences of providing false statements as per Article 76 of Presidential Decree 445/2000.

*Last update: 2025-12-05*