ANTONINO VISALLI

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Department of Biomedical, Metabolic and Neurosciences
University of Modena and Reggio Emilia, Viale A. Allegri 9 - 42121 Reggio Emilia

Research Interests

My research investigates the cognitive mechanisms underlying decision-making, with a particular emphasis on cognitive control and time perception. I study both behavioral dynamics and their neural correlates, especially using electroencephalography (EEG). By developing formal cognitive models through mathematical and computational approaches, I aim to quantify psychological constructs and rigorously test theoretical frameworks.

Employment

- **University of Modena and Reggio Emilia** — *Apr 2025 – Present*
  Assistant Professor in Tenure Track — Reggio Emilia, IT
- **University of Padova** — *Mar 2024 – Mar 2025*
  Post-doc fellow, Department of General Psychology — Padova, IT
- **IRCCS San Camillo Hospital** — *Sep 2022 – Mar 2024*
  Research Contract — Venice, IT
- **University of Padova** — *Mar 2021 – Aug 2022*
  Post-doc fellow, Department of Neuroscience — Padova, IT
- **University of Padova** — *Mar 2020 – Feb 2021*
  Post-doc fellow, Department of Neuroscience — Padova, IT
- **University of Padova** — *Mar 2019 – Feb 2020*
  Post-doc fellow, Department of General Psychology — Padova, IT
- **Klinik für Neurologie, Medizinische Hochschule Hannover** — *Nov 2018 – Feb 2019*
  Research Fellow — Hannover, DE

Education and Training

- **PhD in Psychological Sciences**
  University of Padova (IT) — 28 Mar 2019
- **Master's Degree in "Cognitive Neuroscience and Clinical Neuropsychology" (cum laude)**
  University of Padova (IT) — 24 Sep 2015

Fellowships and Awards

- **Award for Best PhD Thesis** (Sep 2019)
  - Italian Association of Psychology, Experimental Section.
- **The Boehringer Ingelheim Fonds awards Travel Grant** (840 €) (May 2018)
- **"Painter Award": Award for Best Poster at the Cognitive Science Arena** (Feb 2016)
  - Brixen (IT)
- **Erasmus+ mobility scholarship for traineeship** (2150 €) (Apr 2015 – Sep 2015)
  - Department of General Experimental Psychology, Johannes Gutenberg- Universität, Mainz (DE)

Research Grants

- **"Supporting TAlent in ReSearch @ University of Padua - STARS Grant"** (Nov 2023)
  - 30-month grant (173000 €) from the University of Padova (Principal Investigator)
- **3-year grant** (89963 €) (Sep 2022)
  - Ministerio de Ciencia e Innovación, research group member
- **3-year PRIN grant** (709308 €) (Jun 2022)
  - Ministry of University and Research, Project Creator and research group member
- **HD-EEG Pilot Projects Call** (2857 €) (Jun 2021)
  - Padova Neuroscience Center (Principal Investigator)
- **fMRI Pilot Projects Call** (5280 €) (Nov 2020)
  - Padova Neuroscience Center (Principal Investigator)

Teaching activities

- **Adjunct Professor: Human Physiology and Psychology** (2 CFU M-PSI/01) (2020 – 2025)
  - School of Medicine and Surgery, Degree Course: NEUROPHYSIOPATHOLOGY TECHNIQUES, University of Padova (IT)
  - Average student evaluation (2021-2024): Satisfaction 9/10; Teaching 9.08/10; Organization 9.45/10
- **Teaching Assistant: New Concepts in Cognitive Psychology** (1 CFU M-PSI/01) (2024 – 2025)
  - School of Psychology, Master's Degree Course: COGNITIVE NEUROSCIENCE AND CLINICAL NEUROPSYCHOLOGY, University of Padova (IT)
- **Member of Bachelor's Degree Committees** (2021 – 2024)
  - University of Padova (IT), 10 committees
- **Subject Expert: Principles of Cognitive Neuroscience and Neuroimaging** (2019 – 2020)
  - School of Psychology, University of Padova (IT)
- **Thesis Co-supervisor** (2019 – 2023)
  - University of Padova (IT), 5 Master's students and 4 Bachelor's students

Research Methods

- Computational modeling
- Psychophysics and experimental psychology methods
- Electroencephalography (EEG): ERP, spectral analysis, time-frequency analysis, distributed source reconstruction, deconvolution and regression-based MASS analysis
- Magnetic Resonance Imaging (MRI): functional MRI, functional connectivity, lesion-symptom mapping.

Membership in Scientific Societies

- **Research Network "Psychological Science Accelerator"** 2023 - Present
- **Research Network "Timing Research Forum"** 2023 – Present
- **Research Network "Italian Reproducibility Network"** 2022 – Present
- **Italian Association of Psychology** 2022 – Present

Open Science Activities

- **OSF Score: 1423** (10 public projects)
- **Accuracy in Parameter Estimation and Simulation Approaches for Sample Size Planning with Multiple Stimuli**
  - https://osf.io/preprints/osf/e3afx
- **Multi100 project**
  - osf.io/7snkz
- **EEGManyPipelines**
  - eegmanypipelines.github.io

Peer-Reviewed Journal Articles

Antonioni, A., Raho, E. M., Capizzi, M., Gozzi, A., Antenucci, P., Casadei, E., Romeo, Z., Visalli, A., Gragnaniello, D., Mioni, G., & Pugliatti, M. (2025). Time perception in cerebellar and basal ganglia stroke patients. *Scientific Reports*, *15*(1). https://doi.org/10.1038/s41598-025-89311-7

Forte, V., Sartori, L., Visalli, A., Yildirim, M., Galati, G., Vidale, M., Faresin, E., & Vallesi, A. (2025). Neural plasticity in early potters: Shape analysis and tms-eeg co-registration trace the rise of a new motor skill [All Open Access, Gold Open Access]. *PLoS ONE*, *20*(1). https://doi.org/10.1371/journal.pone.0316545

Hellweg, A., Schwarz, M., Walther, K., Hamer, H., Visalli, A., & Mioni, G. (2025). Explicit and implicit timing in mesial temporal lobe epilepsy patients. *Epilepsy and Behavior*, *168*. https://doi.org/10.1016/j.yebeh.2025.110358

Montefinese, M., Visalli, A., Angrilli, A., & Ambrosini, E. (2025). Fine-grained concreteness effects on word processing and representation across three tasks: An erp study. *Psychophysiology*, *62*(5). https://doi.org/10.1111/psyp.70074

Visalli, A., Maldonado, N., Dadak, M., Lanfermann, H., Weißenborn, K., & Kopp, B. (2025). Post-stroke lesion correlates of errors in verbal and spatial production tasks. *Frontiers in Psychology*, *16*. https://doi.org/10.3389/fpsyg.2025.1517876

Ambrosini, E., Benavides-Varela, S., Visalli, A., Viviani, G., & Montefinese, M. (2024). Evaluating semantic control with transcranial magnetic stimulation: A systematic review with meta-analysis [All Open Access, Gold Open Access]. *Frontiers in Psychology*, *15*. https://doi.org/10.3389/fpsyg.2024.1435338

Calderan, M., & Visalli, A. (2024). Challenges of meta-learning and rational analysis in large worlds. *The Behavioral and brain sciences*, *47*, e148. https://doi.org/10.1017/S0140525X24000128

Fornaro, S., Visalli, A., Viviani, G., Ambrosini, E., & Vallesi, A. (2024). Proactive control for conflict resolution is intact in subclinical obsessive-compulsive individuals. *Frontiers in Psychology*, *15*. https://doi.org/10.3389/fpsyg.2024.1490147

Vallesi, A., Porcaro, C., Visalli, A., Fasolato, D., Rossato, F., Bussè, C., & Cagnin, A. (2024). Resting-state eeg spectral and fractal features in dementia with lewy bodies with and without visual hallucinations [All Open Access, Hybrid Gold Open Access]. *Clinical Neurophysiology*, *168*, 43–51. https://doi.org/10.1016/j.clinph.2024.10.004

Visalli, A., Capizzi, M., & Mioni, G. (2024). Explicit and implicit timing across the adult lifespan. *Psychology and Aging*, *40*(2), 137–146. https://doi.org/10.1037/pag0000866

Visalli, A., Montefinese, M., Viviani, G., Finos, L., Vallesi, A., & Ambrosini, E. (2024). Lmeeeg: Mass linear mixed-effects modeling of eeg data with crossed random effects [All Open Access, Green Open Access]. *Journal of Neuroscience Methods*, *401*. https://doi.org/10.1016/j.jneumeth.2023.109991

Viviani, G., Visalli, A., Finos, L., Vallesi, A., & Ambrosini, E. (2024). A comparison between different variants of the spatial stroop task: The influence of analytic flexibility on stroop effect estimates and reliability [All Open Access, Green Open Access, Hybrid Gold Open Access]. *Behavior Research Methods*, *56*(2), 934–951. https://doi.org/10.3758/s13428-023-02091-8

Viviani, G., Visalli, A., Montefinese, M., Vallesi, A., & Ambrosini, E. (2024a). The stroop legacy: A cautionary tale on methodological issues and a proposed spatial solution. *Behavior Research Methods*, *56*(5), 4758–4785. https://doi.org/10.3758/s13428-023-02215-0

Viviani, G., Visalli, A., Montefinese, M., Vallesi, A., & Ambrosini, E. (2024b). Tango of control: The interplay between proactive and reactive control. *Journal of Experimental Psychology: General*, *153*(6), 1644–1670. https://doi.org/10.1037/xge0001585

Capizzi, M., Visalli, A., Wiener, M., & Mioni, G. (2023). The contribution of the supplementary motor area to explicit and implicit timing: A high-definition transcranial random noise stimulation (hd-trns) study [All Open Access, Green Open Access, Hybrid Gold Open Access]. *Behavioural Brain Research*, *445*. https://doi.org/10.1016/j.bbr.2023.114383

Visalli, A., Ambrosini, E., Viviani, G., Sambataro, F., Tenconi, E., & Vallesi, A. (2023). On the relationship between emotions and cognitive control: Evidence from an observational study on emotional priming stroop task. *PLoS ONE*, *18*(11 November). https://doi.org/10.1371/journal.pone.0294957

Visalli, A., Begliomini, C., & Mioni, G. (2023). The effect of emotion intensity on time perception: A study with transcranial random noise stimulation [All Open Access, Green Open Access, Hybrid Gold Open Access]. *Experimental Brain Research*, *241*(8), 2179–2190. https://doi.org/10.1007/s00221-023-06668-9

Visalli, A., Capizzi, M., Ambrosini, E., Kopp, B., & Vallesi, A. (2023). P3-like signatures of temporal predictions: A computational eeg study [All Open Access, Green Open Access]. *Experimental Brain Research*, *241*(7), 1919–1930. https://doi.org/10.1007/s00221-023-06656-z

Capizzi, M., Lovato, A., Visalli, A., De Filippis, C., & Vallesi, A. (2022). Cognitive control strategies in hearing impairment: A study with the ax–cpt. *Hearing, Balance and Communication*, *20*(4), 222–229. https://doi.org/10.1080/21695717.2022.2041299

Capizzi, M., Visalli, A., Faralli, A., & Mioni, G. (2022). Explicit and implicit timing in older adults: Dissociable associations with age and cognitive decline [All Open Access, Gold Open Access, Green Open Access]. *PLoS ONE*, *17*(3 March). https://doi.org/10.1371/journal.pone.0264999

Tarantino, V., Visalli, A., Facchini, S., Rossato, C., Bertoldo, A., Silvestri, E., Cecchin, D., Capizzi, M., Anglani, M., Baro, V., Denaro, L., Della Puppa, A., D'Avella, D., Corbetta, M., & Vallesi, A. (2022). Impaired cognitive control in patients with brain tumors. *Neuropsychologia*, *169*. https://doi.org/10.1016/j.neuropsychologia.2022.108187

Vallesi, A., Visalli, A., Gracia-Tabuenca, Z., Tarantino, V., Capizzi, M., Alcauter, S., Mantini, D., & Pini, L. (2022). Fronto-parietal homotopy in resting-state functional connectivity predicts task-switching performance [All Open Access, Green Open Access, Hybrid Gold Open Access]. *Brain Structure and Function*, *227*(2), 655–672. https://doi.org/10.1007/s00429-021-02312-w

Visalli, A., Capizzi, M., Ambrosini, E., Kopp, B., & Vallesi, A. (2021). Electroencephalographic correlates of temporal bayesian belief updating and surprise [All Open Access, Gold Open Access, Green Open Access]. *NeuroImage*, *231*. https://doi.org/10.1016/j.neuroimage.2021.117867

Kopp, B., Steinke, A., & Visalli, A. (2020). Cognitive flexibility and n2/p3 event-related brain potentials [All Open Access, Gold Open Access, Green Open Access]. *Scientific Reports*, *10*(1). https://doi.org/10.1038/s41598-020-66781-5

Montefinese, M., Ambrosini, E., Visalli, A., & Vinson, D. (2020). Catching the intangible: A role for emotion? [All Open Access, Green Open Access]. *The Behavioral and brain sciences*, *43*, e138. https://doi.org/10.1017/S0140525X19002978

Visalli, A., & Cellini, N. (2020). The role of sleep in the formation and updating of abstract mental representations [All Open Access, Green Open Access]. *The Behavioral and brain sciences*, *43*, e151. https://doi.org/10.1017/S0140525X19003005

Visalli, A., Capizzi, M., Ambrosini, E., Mazzonetto, I., & Vallesi, A. (2019). Bayesian modeling of temporal expectations in the human brain [All Open Access, Green Open Access]. *NeuroImage*, *202*. https://doi.org/10.1016/j.neuroimage.2019.116097

Visalli, A., & Vallesi, A. (2018). Monitoring processes in visual search enhanced by professional experience: The case of orange quality-control workers [All Open Access, Gold Open Access,

Green Open Access]. *Frontiers in Psychology*, *9*(FEB). https://doi.org/10.3389/fpsyg.2018.00145

Publications in Conference Proceedings

- Mioni, G., Capizzi, M., Visalli, A. (2024). **Explicit and implicit timing in healthy and pathological aging**. *Timing & Time Perception, 12*.
- 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*.
- Visalli, A., Donnarumma, F., Di Pietro, I., Vallesi, A., Ambrosini, E. (2022). **Bayesian inference in perceptual decision making: a novel random dot motion paradigm**. *Book of Abstract "30° Congress of the Italian Association of Psychology"*. ISBN: 978-88-6938-316-8.
- Visalli, A., Bergamo, D., Cellini, N. (2020). **Inter-and intra-subject variability of N2 sleep spindles during daytime naps**. *Journal of sleep research, 29*.
- Visalli, A., Capizzi, M., Ambrosini, E., Kopp, B., Vallesi, A. (2019). **Electroencephalographic correlates of temporal Bayesian belief updating and surprise**. Paper of the Conference on Cognitive Computational Neuroscience, Berlin (DE).
- Visalli, A., Capizzi, M., Mazzonetto, I., Vallesi, A. (2017). **Neural representations of model updating of temporal expectations: an fMRI study**. *Proceedings of the International Conference on Cognitive Neuroscience of Executive Functions, Padova (IT)*.

Talks and Posters (Selected)

- Visalli, A., Calistroni, F.M., Calderan, M., Donnarumma, F., Zorzi, M., Ambrosini, E. **Extensions of the Hierarchical Gaussian Filter to Wiener diffusion processes**. Poster and oral presentation. "The Fifth International Convention on the Mathematics of Neuroscience and AI". Rome (IT), 28-31 May 2024.
- Visalli, A., Montefinese, M., Viviani, G., Finos, L., Vallesi, A., Ambrosini, E. **lmeEEG: Mass linear mixed-effects modeling of EEG data with crossed random effects**. Oral presentation. XXXI National Congress of the Italian Association of Psychology - Experimental Section, Lucca, 18-20 September 2023.
- Visalli, A., Montefinese, m., Vallesi, A., Ambrosini, E. **Permutation strategy for mass crossed mixed-effects modeling of M-EEG data**. Poster. Forty-first European Workshop on Cognitive Neuropsychology, Brixen (IT), 22-27 January 2023.
- Visalli, A., Donnarumma, F., Di Pietro, I., Vallesi, A., Ambrosini E. **Bayesian inference in perceptual decision making: a novel random dot motion paradigm**. Oral presentation. XXX National Congress of the Italian Association of Psychology - Experimental Section, Padova, 27-30 September 2022.
- Visalli, A., Capizzi, M., Ambrosini, E., Kopp, B., Vallesi, A. **Electroencephalographic correlates of temporal Bayesian belief updating and surprise**. Poster. 7th International Symposium on Motivational and Cognitive Control, Berlin (DE), 16-18 September 2019.
- Visalli, A., Vallesi, A. **EEG correlates of the Tower of London task: evidence of distinct cognitive processes in planning**. Poster. Thirty-sixth European Workshop on Cognitive Neuropsychology, Brixen (IT), 22-26 January 2018.
- Visalli, A., Capizzi, M., Mazzonetto, I., Vallesi, A. **Bayesian brain: Dynamic changes of expectancy in the temporal preparation**. Invited talk. XXV Congress of the Italian Society of Psychophysiology and Cognitive Neuroscience, Rome (IT), 16-18 November 2017. https://sipf.wildapricat.org/Programma-2017.
- Visalli, A., Capizzi, M., Mazzonetto, I., Vallesi, A. **Neural representations of model updating and surprise of temporal expectations: an fMRI study**. Poster presentation. XX Conference of the European Society For Cognitive Psychology, Potsdam (DE), 3-6 September 2017.
- Visalli, A., Vallesi A. **Monitoring processes in visual search enhanced by professional experience: the case of orange quality-control workers**. Poster. First ESCoP Satellite on Cognitive Enhancement, Potsdam (DE), 3 September 2017.
- Visalli, A., Grassi, M., Oberfeld, D. **Timing to contact? Investigating the involvement of the internal clock in a prediction-motion task**. Best poster presentation. Cognitive Science Arena, Brixen (IT), 19-20 February 2016. http://cogsci.altervista.org/prizes.html.

Editorial Activity

- **Ad-hoc reviewer:** Communications Biology, PLOS Computational Biology, PLoS one, NeuroImage, Brain Topography, Psychonomic Bulletin & Review, Cortex, Frontiers Psychology, Journal of Cognitive Neuroscience, Biological Psychology, Biological cybernetics.
- **Conference Review:** Conference on Cognitive Computational Neuroscience (2019), Berlin (DE). International Conference on Cognitive Neuroscience of Executive Functions (2017), Padova (IT)

Outreach Activities

- **Seminar on general psychology and neurosciences for high school students, as part of the "Transversal Skills and Orientation Paths" (PCTO) internship program. (2025)**
- **"Penne amiche della scienza". Science outreach project aimed at fourth and fifth-grade primary school classes and first and second-grade middle school classes through a letter exchange. (2023)** https://sites.google.com/view/penne-amiche-della-scienza
- **Capizzi, M., Mioni, G., Visalli, A. (2025). "Be ready for your toast! A lifespan perspective on implicit and explicit timing".***Ciencia Cognitiva, 19:2, 41-43.* Science outreach article. https://www.cienciacognitiva.org/?p=2535
- **Capizzi, M., Visalli, A., Mioni, G. (2022). "Be ready for your toast! Implicit timing tasks can help understand better how older adults process time".***Ciencia Cognitiva, 16:3, 80-83.* Science outreach article. https://www.cienciacognitiva.org/?p=2279

Developed software and tools

- **PAM: Predictive Evidence Accumulation models.** github.com/antovis86/PAM—Predictive-Accumulator-Models
- **lmeEEG: Mass linear mixed-effects modeling of EEG data with crossed random effects.** github.com/antovis86/lmeEEG
- **Bayesian computational models of temporal expectations (I).** osf.io/ckqa5/
- **Bayesian computational models of implicit temporal expectations (II).** osf.io/sdy8j/
- **EEG preprocessing pipeline.** osf.io/az983

Reggio Emilia, 8 July 2025

Antonino Visalli