ANTONINO VISALLI

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Department of Biomedical, Metabolic and Neural Sciences
University of Modena and Reggio Emilia, Viale A. Allegri 9 – 42121 Reggio Emilia, Italy

Current Position

Assistant professor (tenure track) — University of Modena and Reggio Emilia, Reggio Emilia (IT). (Apr 2025 – Present)

Experience

- Post-doc fellow — Department of General Psychology, University of Padova, Padova (IT). (Mar 2024 – Mar 2025)
- Research Contract — IRCCS San Camillo Hospital, Venice (IT). (Sep 2022 – Mar 2024)
- Post-doc fellow — Department of Neuroscience, University of Padova, Padova (IT). (Mar 2021 – Aug 2022)
- Post-doc fellow — Department of Neuroscience, University of Padova, Padova (IT). (Mar 2020 – Feb 2021)
- Post-doc fellow — Department of General Psychology, University of Padova, Padova (IT). (Mar 2019 – Feb 2020)
- Research Fellow — Klinik für Neurologie, Medizinische Hochschule Hannover, Hannover (DE). (Nov 2018 – Feb 2019)

Education

- National Scientific Qualification as Associate Professor for the academic recruitment field 11/E1. (17 Jun 2026)
- 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)

Research Interests

My research investigates cognitive processes in human decision-making, focusing on **cognitive control** and **time perception**. I use behavioral methods (psychophysics) and neuroimaging techniques especially **electroencephalography (EEG)**, and use cognitive computational models to measure psychological constructs and evaluate theories empirically. My activity also involves the development of analytical and computational methods for advanced data analysis (e.g., **EEG**) and **computational modeling**.

Research Methods:

- **Computational Modeling**: Bayesian brain, Active Inference, Evidence Accumulation Models.
- **Electroencephalography (EEG)**: ERP, time-frequency analysis, source reconstruction, deconvolution, massive regression models, multivariate pattern analyses.
- **Magnetic Resonance Imaging (MRI)**: Functional MRI (fMRI), functional connectivity, lesion-symptom mapping.
- **Experimental Psychology**: Psychophysics, signal detection, mixed effects models.

Grants and Awards

- **Supporting TAlent in ReSearch @ University of Padua - STARS Grant** (Nov 2023). Principal Investigator, 30-month grant, University of Padova, 173.000 €.
- **3-year grant** (Sep 2022). Research group member, Ministerio de Ciencia e Innovación, 89.963 €.
- **HD-EEG Pilot Projects Call** (Jun 2021). Principal Investigator, Padova Neuroscience Center, 2.857 €.
- **fMRI Pilot Projects Call** (Nov 2020). Principal Investigator, Padova Neuroscience Center, 5.280 €.
- **Award for Best PhD Thesis** (Sep 2019). Italian Association of Psychology, Experimental Section.
- **The Boehringer Ingelheim Fonds Travel Grant** (May 2018). 840 €.
- **Painter Award: Best Poster at the Cognitive Science Arena** (Feb 2016). Brixen (IT).

Teaching Activities

- Methods to decode EEG - PhD Program in Neuroscience, University of Modena and Reggio Emilia (A.Y. 2025-2026)
- Clinical Psychology - Bachelor's Degree in Midwifery, Department of Medical and Surgical Sciences for Mother, Child and Adult, University of Modena and Reggio Emilia (A.Y. 2025-2026)
- General Psychology 1 - Bachelor's Degree in Nursing (MO), Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia (A.Y. 2025-2026)
- Clinical Psychology - Bachelor's Degree in Occupational Therapy, Department of Medical and Surgical Sciences for Mother, Child and Adult, University of Modena and Reggio Emilia (A.Y. 2025-2026)
- Clinical Psychology - Bachelor's Degree in Speech and Language Therapy, Department of Medical and Surgical Sciences for Mother, Child and Adult, University of Modena and Reggio Emilia (A.Y. 2025-2026)
- Neuropsychology - School of Medicine and Surgery, Degree Course in Neurophysiopathology Techniques, University of Padova (A.Y. 2020-2025)
- Member of the PhD Academic Board of the PhD Program in NEUROSCIENCE, University of Modena and Reggio Emilia (41st and 42nd cycle)

Open Science Activities

- **OSF Profile.** https://osf.io/z4fbr/
- **Accuracy in Parameter Estimation and Simulation Approaches for Sample Size Planning with Multiple Stimuli.** https://osf.io/preprints/osf/e3afx
- **Multi100 project.** https://osf.io/7snkz
- **EEGManyPipelines.** https://eegmanypipelines.github.io
- **EEGManyAnalysts.** https://www.coscience-personality.com/manyanalysts

Peer-Reviewed Journal Articles

Aczel, B., Szaszi, B., Clelland, H. T., Kovacs, M., Holzmeister, F., van Ravenzwaaij, D., Schulz-Kümpel, H., Hoffmann, S., Nilsonne, G., Kosa, L., Torma, Z. A., Abdelfatah, Y., Aberson, C. L., Acar, O. A., Acem, E., Adamkovic, M., Adamovich, T., Adiasto, K., Ahnström, L., ... Nosek, B. A. (2026). Investigating the analytical robustness of the social and behavioural sciences. *Nature*, *652*(8108), 135–142. https://doi.org/10.1038/s41586-025-09844-9

Bergamo, D., Visalli, A., Baldassarri, A., & Cellini, N. (2026). Differential nap-to-nap stability of sleep spindles, slow waves, and their temporal coupling: An exploratory study. *Journal of Sleep Research*, *35*(3). https://doi.org/10.1111/jsr.70253

Buchanan, E. M., Elsherif, M. M., Geller, J., Aberson, C. L., Gurkan, N., Ambrosini, E., Heyman, T., Montefinese, M., Vanpaemel, W., Barzykowski, K., Batres, C., Fellnhofer, K., Huang, G., McFall, J., Ribeiro, G., Röer, J. P., Ulloa, J. L., Roettger, T. B., Valentine, K., ... Lewis, S. C. (2026). Accuracy in parameter estimation and simulation approaches for sample-size planning accounting for item effects. *Behavior Research Methods*, *58*(2). https://doi.org/10.3758/s13428-025-02860-7

Visalli, A. (2026). A promising new foundation for conflict and control: Bridging the gap to verification. comment on "active inference and cognitive control: Balancing deliberation and habits through precision optimization" by riccardo proietti, thomas parr, alessia tessari, karl friston, and giovanni pezzulo. *Physics of Life Reviews*, *56*, 61–63. https://doi.org/10.1016/j.plrev.2025.11.008

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. *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. *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. *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. *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. *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. *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. *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. *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. *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. *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. *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. *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? *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. *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. *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. *Frontiers in Psychology*, *9*(FEB). https://doi.org/10.3389/fpsyg.2018.00145

Conference Publications and Presentations (Selected)

- 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".*

- 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).*
- Visalli, A. **Temporal Representations in the Predictive Brain: Inferring the Internal Format of Duration**. Invited talk. Sensing Time: Second Time Research Forum Summer School, Padova, Italy, 2026.
- 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)**. Oral presentation. European Mathematical Psychology Group Meeting, Padova, Italy, 2025.
- 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), 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, 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), 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, 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), 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), 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), 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), 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), 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), 2016.

Outreach Activities

- European Researchers' Night, Reggio Emilia (IT), 2025.

- Seminar on general psychology and neurosciences for high school students, as part of the 'Transversal Skills and Orientation Paths' (PCTO) internship program, Reggio Emilia (IT), Jun 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.
- Science outreach articles: "Be ready for your toast! A lifespan perspective on implicit and explicit timing" (2025) and "Be ready for your toast! Implicit timing tasks can help understand better how older adults process time" (2022), Autori: Capizzi, M., Visalli, A., Mioni, G. - Pubblicati su Ciencia Cognitiva (Vol. 16:3 e 19:2). https://www.cienciacognitiva.org/?p=2535 | https://www.cienciacognitiva.org/?p=2279.

Developed Software and Tools

- **PAM (Predictive Accumulation Models).** Computational framework and tutorial to investigate inferential processes in decision-making. https://github.com/antovis86/PAM-PredictiveAccumulationModels
- **lmeEEG.** Package and statistical pipeline for mass linear mixed-effects modeling of M-EEG data with crossed random effects. https://github.com/antovis86/lmeEEG

Reggio Emilia, 10 July 2026

Antonino Visalli