

## PERSONAL INFORMATION

## Giovanni Granato



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Sex M | Date of birth 02/10/1992 | Nationality Italian

## PROFILE

I am a **researcher in Computational Neuropsychology** at the Italian National Research Council (CNR), Institute of Cognitive Sciences and Technologies (ISTC), where I coordinate a research line within the Laboratory of Embodied Natural and Artificial Intelligence (LENAI). My training spans Cognitive Sciences, Neuroscience, Machine Learning, Computational Modelling, and Cognitive Robotics. My research integrates **theoretical, computational, and experimental approaches** to investigate the neurocognitive mechanisms underlying **higher-order cognition** (executive functions, metacognition, inner speech, and consciousness), within **original theoretical frameworks** that I have developed (Three-Components Theory, Motivated Categorical Perception Theory, and Goal-Aligning Representation Internal Manipulation Theory). My work pursues two complementary objectives: (a) the experimental **investigation of individual neuropsychological traits** supporting cognitive flexibility and metacognition across development and clinical conditions, and (b) the development and validation of **automated neuropsychological pipelines grounded in my original multi-layer neuropsychological digital-twin method** - which integrates theory-driven and neuro-inspired computational models, standardised neuropsychological tasks, and interpretable model-based profiling and prediction - to support researchers in investigations and clinicians in diagnosis and psychotherapy planning. The pipelines, validated in translational projects, are implemented and shared on the **EBRAINS-Italy platform** to promote accessibility and integration within the European research ecosystem. I currently coordinate experimental, computational, and clinical studies involving **typical, clinical, and neurodivergent populations** (e.g., autism, ADHD, specific learning disorders), in collaboration with healthcare and academic institutions. Beyond clinical applications, my work also extends to human resources (job-position profiling), human-robot interaction (human factors), and cognitive robotics (machine consciousness).

## RESEARCH POSITION/WORK EXPERIENCE

**June 2023 - Present**    **Research Scientist (fixed-term) at "Institute of Cognitive Sciences and Technologies" (ISTC) of the "National Research Council" (CNR).**

**Laboratory:** Laboratory of Embodied Natural and Artificial Intelligence (LENAI)

**Research focus:** "Coordination and supervision of experimental and clinical-computational studies involving neurotypical, neurodivergent, and clinical populations, in collaboration with healthcare and academic institutions. Development of computational and neuro-inspired models of higher-order cognition (executive functions, metacognition, consciousness, inner speech) and their integration into automated and model-based neuropsychological pipelines for translational research, clinical profiling, human-robot interaction, and EBRAINS-compatible infrastructures".

**June 2019 - May 2023**    **Research Fellow at "Institute of Cognitive Sciences and Technologies" of the "National Research Council" .**

**Laboratory:** Laboratory of Computational Embodied Neuroscience (LOCEN), Laboratory of Embodied Natural and Artificial Intelligence (LENAI)

**Research focus:** "Computational models of the brain system supporting flexible goal-directed behaviour"

**April 2019 - October 2022**

**PhD Researcher in Computational Neuropsychology at the "School of Computer Science, Electronics and Mathematics" of the "University of Plymouth" (UK)**

**Research focus:** computational models of healthy and pathological human cognition, with a focus on executive functions, metacognition, inner speech, computational psychiatry, and neuro-inspired machine learning. International doctoral research activity conducted in parallel with research appointments at ISTC-CNR (Italy).

**January 2019 - May 2019**

**Research Assistant at "Institute of Cognitive Sciences and Technologies" of the "National Research Council".**

**Laboratory:** Laboratory of Computational Embodied Neuroscience (LOCEN)

**Research focus:** "Computational models of goal-directed behaviour and cognitive flexibility"

**October 2016 - December 2017**

**Research Consultant at the Dept. of Psychology of "La Sapienza, University of Rome"**

**Laboratory:** Social and Cognitive Neuroscience Laboratory (SCNL)

**Topic:** "Virtual reality and Autism"

## PROJECTS AND ETHICS-APPROVED STUDIES

**September 2026 - 2031**

**Learning and using coNcepts: Knowledge exchAnging and enGaging in innEr and Social dynamics (LINKAGE; FIS project)**

**Role:** Research Scientist

**Activities:** Supervision of two project tasks, with a focus on theoretical formalisation, experimental paradigms, and computational modelling of inner-speech and executive functions.

**October 2025 - Present**

**Purposeful Intrinsically Motivated Lifelong Learning Autonomous Robots (PILLAR-Robots; Horizon Europe project)**

**Role:** Research Scientist

**Activities:** neuropsychological testing, data analysis, data modeling, human-robot interaction

**June 2023 - Present**

**EBRAINS-Italy (European Brain ReseArch INfrastructureS-Italy; PNRR NextGenerationEU project)**

**Role:** Research Scientist

**Activities:** management and training activities, and scientific production (“Computational models of brain and behavior, with particular reference to higher cognition, executive functions, metacognition, and consciousness”)

**September 2022 - 2025** **Terza Missione: Ascoltare la comunità autistica per migliorare la conoscenza dell'autismo, l'accessibilità degli studenti autistici all'università e la ricerca scientifica sull'autismo (institutional funds)**

**Role:** Research consultant

**Activities:** autistic research consultancy and participation in the workgroup “participatory research in Autism”

**April 2019 - April 2021** **GOAL Robots (Goal-based Open-ended Autonomous Learning Robots; EU FET project)**

**Role:** Research Fellow

**Activities:** scientific activity (“Neuro-inspired computational models of goal-directed behavior with potential applications in Robotics/Cognitive Robotics”)

## ETHICS-APPROVED SCIENTIFIC/CLINICAL STUDIES

**October 2025 - Present** **Metacognition and executive functions in typical and atypical neurodevelopment: towards a translational neuropsychology integrating theoretical frameworks, experimental methodologies and computational models**

**Role:** Scientific leader/ responsible

**Partners:** CNR-ISTC, ISS, ASL - Rome 6, AS-ETS

**Activities:** Scientific coordination, neuropsychological assessment, data analysis and modeling

**Target population:** Neurotypical, Attention Deficit Hyperactivity Disorder , Specific Learning Disorders (7-12 years)

**Status:** clinical clearance obtained, waiting for ethical committee clearance

**June 2025 - Present** **Toward a Computational Neuropsychology of metacognitive and goal-directed cognition: integrating theoretical, computational and experimental research**

**Role:** Scientific leader/ responsible

**Partners:** CNR-ISTC, La Sapienza

**Activities:** Scientific coordination, neuropsychological assessment, data analysis and modeling

**Target population:** Neurotypical and Autism Spectrum Conditions (18-50 years)

**Status:** ongoing experiments

**September 2024 - Present** **Disturbo da Deficit di Attenzione/Iperattività (ADHD): gli SNiPs del gene DAT in relazione alla presenza di patologie auto-immuni familiari**

**Role:** Scientific study supervisor

**Partners:** CNR-ISTC, ISS, AS-ETS

**Activities:** Scientific supervision, team coordination, neuropsychological assessment, data analysis and modeling

**Target population:** Neurotypical, Attention Deficit Hyperactivity Disorder, Specific Learning Disorders (7-12 years)

**Status:** ongoing experiments

**December 2022 - December 2023**

#### Computational models of Flexible Cognition and Inner Speech in Schizophrenia

**Role:** Scientific study supervisor

**Partners:** CNR-ISTC, Swinburne University of Technology (AUS), La Sapienza

**Activities:** Scientific supervision, team coordination, data analysis and modeling

**Target population:** Neurotypical and Schizophrenia spectrum disorders controls (Middle adults)

**Status:** completed

## TEACHING AND TRAINING

**November 2025 - Present**

#### Advanced course titled “Computational Neuropsychology of Higher-Order Conscious Cognition: Neuro-Inspired Computational Models of Healthy, Neurological, and Psychiatric Conditions”

**Programme:** e-DIANA - EBRAINS-Italy Digital Academy for Neuroscience and AI

**Role:** Contract Lecturer

**Target:** PhD students and postdoctoral researchers

**Activities:** Design and delivery of an advanced online course in computational neuropsychology. The course covers theoretical foundations of human cognitive flexibility and neuro-inspired computational modelling, and includes hands-on practical sessions in which participants use computational models to reproduce human behavioural data and generate novel predictions on previously untested populations.

**March 2025**

#### Team-building based on Educational Robotics

**Institution:** Italiacamp srl

**Role:** Instructor

**Target:** adults (managers)

**Activities:** Team-building with educational robotics in group problem solving

**November 2022**

#### Teaching/training in Educational Robotics

**Institution:** Italiacamp srl

**Role:** Instructor

**Target:** adults

**Topic:** elements of cognitive science and autonomous robotics and their social impact

**October 2022**

#### Teaching/training in Educational Robotics

**Institution:** Italiacamp srl

**Role:** Instructor

**Target:** teenagers

**Topic:** basic elements of cognitive science, coding and robotics

**June 2022 - July 2022**    **Teaching/training in Educational Robotics**

**Institution:** Italiacamp srl

**Role:** Instructor

**Target:** children and teenagers

**Topic:** cognitive science, coding and robotics

## SCIENTIFIC LEADERSHIP, EDITORIAL SERVICE & ACADEMIC RESPONSIBILITIES

**October 2025 - Present**    **Scientific lead/responsible (ethics-approved study)**

**Roles:** Coordinator and scientific director of the clinical-computational experimental study "Metacognition and executive functions in typical and atypical neurodevelopment: towards a translational neuropsychology integrating theoretical frameworks, experimental methodologies and computational models" (CNR-ISTC, ISS, ASL - Rome 6, AS-ETS).

**March 2025 - Present**    **Scientific supervisor (ethics-approved study)**

**Roles:** scientific supervisor of the clinical-computational study "Metacognition and executive functions in typical and atypical neurodevelopment: towards a translational neuropsychology" (CNR-ISTC, ISS, AS-ETS).

**24 July 2025 - Present**    **Scientific lead/responsible (ethics-approved study)**

**Roles:** scientific responsible for the ethics-approved clinical-computational study "Toward a Computational Neuropsychology of metacognitive and goal-directed cognition: integrating theoretical, computational and experimental research" (CNR-ISTC, La Sapienza).

**5 May 2025 - Present**    **Guest Editor (Frontiers in Psychology)**

**Roles:** topic coordinator in a special issue on "Bridging Language and Consciousness: Insights from Brains, Minds, and Machines" (Research Topic)

**December 2024 - Present**    **Officina Ricerca Partecipativa Autismo (ORPA)**

**Roles:** permanent member of the group

**March 2024 - Present**    **"EBRAINS-Italy Training and Innovation Committee (ETICo)"**

**Roles:** member of ETICo, supporting the definition of the ETIC training offer, management of the training and technological transfer activities

**November 2023 - Present**    **"Italiacamp association"**

**Roles:** Teaching and dissemination in cognitive science, AI, and Robotics

**August/September 2026**    **ISTC-CNR, selection procedure for a research fellowship**

**Roles:** Responsible Officer (RUP)

**2 April 2026**    **ISTC-CNR, selection committee for a research contract**

**Roles:** secretary of the commission

**4 August 2025**    **ISTC-CNR, selection committee for a research grant**

|                                      |                                                                                                                                                                                                                           |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | <b>Roles:</b> member of the commission                                                                                                                                                                                    |
| <b>2 May 2025</b>                    | <b>ISTC-CNR, selection committee for a research grant</b>                                                                                                                                                                 |
|                                      | <b>Roles:</b> member of the commission                                                                                                                                                                                    |
| <b>12 February 2025</b>              | <b>ISTC-CNR, selection committee for a senior research fellow grant</b>                                                                                                                                                   |
|                                      | <b>Roles:</b> member of the commission                                                                                                                                                                                    |
| <b>20 May 2024</b>                   | <b>ISTC-CNR, selection committee for a senior research fellow grant</b>                                                                                                                                                   |
|                                      | <b>Roles:</b> secretary of the commission                                                                                                                                                                                 |
| <b>20 July 2023</b>                  | <b>University of Rome "La Sapienza" ("Cognitive Neuroscience"), MA graduation commission</b>                                                                                                                              |
|                                      | <b>Roles:</b> Member of the graduation committee (Supervisor of a MA student)                                                                                                                                             |
| <b>December 2022 - December 2023</b> | <b>Scientific supervisor (ethics-approved study)</b>                                                                                                                                                                      |
|                                      | <b>Roles:</b> scientific supervisor of the clinical-computational study "Computational models of Flexible Cognition and Inner Speech in Schizophrenia" (CNR-ISTC, Swinburne University of Technology - AUS, La Sapienza). |

## EDUCATION AND ADVANCED TRAINING

|                                  |                                                                                                                                                                                     |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>September 2025</b>            | <b>EBRAINS-Italy Scientific Academy – BRAiN Dynamics academyY (Oristano, Italy)</b>                                                                                                 |
|                                  | <b>Topics:</b> Advanced training on neuroscience research, from molecular to cellular and systems neuroscience, and embracing multiple methodological approaches.                   |
| <b>April 2019 - October 2022</b> | <b>PhD in "Computer science" ("Computational Neuropsychology") at "School of Computer Science, Electronics and Mathematics", University of Plymouth, United Kingdom</b>             |
|                                  | <b>Project title:</b> "Flexible goal-directed manipulation of representations: computational models of healthy and pathological human cognition"                                    |
|                                  | <b>Topics:</b> Machine learning, Deep learning, Generative models, Artificial neural networks, Clinical Neuropsychology, Computational Neuroscience/Neuropsychology, Neuro-robotics |
| <b>October 2018 - April 2019</b> | <b>Advanced School in Artificial Intelligence at "CNR-ISTC"</b>                                                                                                                     |
|                                  | <b>Project title:</b> "Flexible goal-directed behavior and internal attention: building blocks for consciousness "                                                                  |
|                                  | <b>Topics:</b> Machine learning, Artificial neural networks, Agent-based models, Computational Neuroscience/Neuropsychology                                                         |
| <b>October 2015 - July 2018</b>  | <b>Master's degree in "Cognitive Neuroscience and Psychological Rehabilitation" at University of Rome "La Sapienza", Dept. of Medicine and Psychology, Faculty of Psychology</b>    |
|                                  | <b>Thesis title:</b> "Consciousness and Goal-directed Behavior: from theoretical neuroscience to computational models"                                                              |
|                                  | <b>Topics:</b> Cognitive Neuroscience, Neuropsychology, Systemic Neuroscience, Neurobiology, Computational Neuroscience/Neuropsychology                                             |
| <b>October 2012 - July 2015</b>  | <b>Bachelor's Degree in "Psychological Sciences and Techniques" (curriculum: "Cognitive Processes") at "University of Florence", Faculty of Psychology</b>                          |

**Thesis title:** "Emergence of a consciousness from a hyper-connected neuronal system: neurobiological models and hypotheses "

**Topics:** General psychology, Psychobiology, Developmental psychology, Work psychology, Psychodynamics, Psychometrics, Physiological psychology, Research methodology, Developmental psychobiology, Cognitive neuropsychology

## RESEARCH CONTRIBUTIONS

### Software and tools

- **Digital-Twin Neuropsychology Pipeline**
  - **Author:** Giovanni Granato
  - **Co-authors:** Jordy Di Giulio, Giulia Manzi
  - **Type:** research tool
  - **Platform:** EBRAINS-Italy
  - **Link:** <https://www.ebrains-italy.eu/resources/analysis-tools/9>
  - **Description:** An automated and model-based pipeline, validated on human experimental clinical data, that supports the task administration and the interpretation/prediction of data collected with gold-standard neuropsychological tests of executive functions and metacognition (e.g. WCST, meta-WCST).
- **Online repository of computational models**
  - **Author:** Giovanni Granato
  - **Type:** online repository
  - **Platform:** Git-hub
  - **Link:** <https://github.com/GiovanniGranato>
  - **Description:** Online repository that stores and shares several computational models of higher-order cognition

### Publications

#### IN PREPARATION, SUBMITTED, UNDER REVIEW, ACCEPTED, IN PRESS

- Mattera A., Alfieri V., **Granato G.**, Mannella F., Baldassarre G. (2026). **Oscillations, but not chaos, confer stochastic-like properties to a deterministic neural network.** *In preparation.*
- Alfieri V., Mattera A., **Granato G.**, Baldassarre G. (2026). **Chaos Regulation by Temporal Difference Error for Exploration–Exploitation Trade-off in Recurrent Neural Networks.** *Neurocomputing (Elsevier). Under review.*
- **Granato G.**, Di Giulio J., Manzi G., Puzzo C., Mattera, A., Giocondo F., Adriani W., Capobianco M., Baldassarre G. (2026). **An automated pipeline for lifespan neuropsychological assessment of executive functions and metacognition based on multi-layer neuropsychological digital twins.** *Scientific Reports (Nature Publishing Group). Under Review.* Pre-print: [https://doi.org/10.31234/osf.io/xu9j8\\_v1](https://doi.org/10.31234/osf.io/xu9j8_v1)

#### PUBLISHED

- **Granato, G.**, Mattera, A., Cartoni, E. & Baldassarre, G. (2026) **Modeling metacognition and executive functions in the metacognitive wisconsin card sorting test using the neuropsychological digital-twin method.** *Scientific Reports*, 16, 7145
- **Granato, G.**, Manzi, G., Di Giulio, J., Puzzo, C., Mattera, A., Adriani, W., Baldassarre,

- G., & Capobianco, M. (2025). **Assessing executive functions and metacognition: Translational potential of the Metacognitive Wisconsin Card Sorting Test for developmental neuropsychology**. *Front. Behav. Neurosci.* 19:1655310.
- Bartolomei, G., Ozcan, B., **Granato, G.**, Baldassarre, G., & Sperati, V. (2025). **A proposal for an AI-based toy to encourage and assess symbolic play in autistic children**. *Behaviour & Information Technology*, 1-14.
  - Bartolomei, G., **Granato, G.**, Baldassarre, G., Ozcan, B., & Sperati, V. (2025). **A Proposal for a Multimodal Interactive Platform for Data Collection in Autism Play-Based Therapy Sessions**. Poster presented at "ISWC 2025 and UbiComp".
  - Bartolomei, G., Ozcan, B., **Granato, G.**, Baldassarre, G., & Sperati, V. (2025). **Echo: an AI-based toy to encourage symbolic play in children with Autism Spectrum Conditions**. In *Proceedings of the Nineteenth International Conference on Tangible, Embedded, and Embodied Interaction* (pp. 1-6).
  - **Granato, G.**, Costanzo, R., Borghi, A., Mattera, A., Carruthers, S., Rossell, S., & Baldassarre, G. (2025). **An experimental and computational investigation of executive functions and inner speech in schizophrenia spectrum disorders**. *Scientific Reports*, 15(1), 5185.
  - Mattera, A., Alfieri, V., **Granato, G.**, & Baldassarre, G. (2024). **Chaotic recurrent neural networks for brain modelling: A review**. *Neural Networks*, 107079.
  - **Granato, G.**, & Baldassarre, G. (2024). **Bridging flexible goal-directed cognition and consciousness: The Goal-Aligning Representation Internal Manipulation theory**. *Neural Networks*, 106292.
  - Cavallo A., Mattera A., **Granato G.**, Baldassarre G. (2023). **Emergence of neuronal ensembles in a chaotic corticostriatal circuit**. In *2023 Conference on Cognitive Computational Neuroscience*.
  - **Granato, G.** (2022). **Flexible goal-directed manipulation of representations: computational models of healthy and pathological human cognition** (Doctoral dissertation, University of Plymouth).
  - **Granato, G.**, Borghi, A. M., Mattera, A., & Baldassarre, G. (2022). **A computational model of inner speech supporting flexible goal-directed behaviour in Autism**. *Scientific reports*, 12(1), 1-15.
  - **Granato G.**, Cartoni E, Da Rold F, Mattera A, Baldassarre G (2022) **Integrating unsupervised and reinforcement learning in human categorical perception: A computational model**. *PLoS ONE* 17(5): e0267838.
  - Mattera, A., Cavallo, A., **Granato, G.**, Baldassarre, G., & Pagani, M. (2022). **A Biologically Inspired Neural Network Model to Gain Insight Into the Mechanisms of Post-Traumatic Stress Disorder and Eye Movement Desensitization and Reprocessing Therapy**. *Frontiers in Psychology*, 3681.
  - **Granato G.**, Baldassarre G. (2022). **Manipulation of internal representations**

**underlying flexible human goal-directed behaviour: supporting Computational Psychiatry and towards Machine Consciousness.** Poster session presented at "The symposium: from cortical microcircuits to consciousness (CORTICON)"

- **Granato, G., & Baldassarre, G. (2021). Internal manipulation of perceptual representations in human flexible cognition: A computational model.** Neural Networks, 143, 572-594.
- **Granato, G., Borghi, A. M., & Baldassarre, G. (2020). A computational model of language functions in flexible goal-directed behaviour.** Scientific reports, 10(1), 1-13.
- **Baldassarre, G., & Granato, G. (2020). Goal-Directed Manipulation of Internal Representations Is the Core of General-Domain Intelligence.** Journal of Artificial General Intelligence, 11(2), 19-23.
- **Granato, G., & Baldassarre, G. (2019). Goal-directed top-down control of perceptual representations: A computational model of the Wisconsin Card Sorting Test.** In 2019 Conference on Cognitive Computational Neuroscience (pp. 2019-1168).
- **Baldassarre, G., Lord, W., Granato, G., & Santucci, V. G. (2019). An embodied agent learning affordances with intrinsic motivations and solving extrinsic tasks with attention and one-step planning.** Frontiers in neurorobotics, 13, 45.
- **Granato G., Baldassarre G. (2018). Goal-directed imagination and cognitive flexibility: A computational model of the Wisconsin Sorting Card Test.** Poster session presented at "The Eighth International Symposium on Biology of Decision Making (SBDM)"

#### Selected scientific talks

- **Italian Symposium for Health Professionals in Rheumatology - SIR 2026** (27/11/2026; Rimini, Italy)

**Speaker presentation:** "Neuropsychological Digital Twins in Rheumatology: Understanding Patients' Cognition to Improve Assessment, Treatment Adherence and Self-Monitoring"

- **Behavioural Neuroscience Conference 2025** (2/10/2025; Agropoli, Italy)

**Speaker presentation:** "Towards automated and model-based digital-twin pipelines for neuropsychological assessment and intervention selection"

- **Research Infrastructure EBRAINS-Italy, workshop on "The EBRAINS-Italy Research Infrastructure for Neuroscience challenges"** (04/12/2025; Naples, Italy)

**Speaker presentation:** "An automated toolbox for modeling flexible goal-directed cognition: advancements and achievements"

- **Research Infrastructure EBRAINS-Italy, workshop on "The**

## EBRAINS-Italy Research Infrastructure for Neuroscience challenges" (26/09/2023; Palermo, Italy)

**Speaker presentation:** "Modeling Flexible goal-directed cognition: an automated research toolbox."

## SCIENCE COMMUNICATION, OUTREACH & INNOVATION

### June 2026 Invited guest - No Tie No Frills Podcast

**Activities:** invited interview discussing the translation of Computational Neuropsychology research into innovation and entrepreneurship through the BrAlnBridge initiative, including AI-based cognitive profiling, neuropsychological digital twins, and potential applications in Human Resources and organisational development

### May 2026 ClearSkyScience research feature

**Recognition:** the paper "Modeling metacognition and executive functions in the metacognitive Wisconsin Card Sorting Test using the neuropsychological digital-twin method" (Scientific Reports) was selected and featured in a public science communication article aimed at making frontier research accessible to broader audiences.

### December 2025 - March 2026 "BoostYourIdeas" Programme - Lazio Innova (Regional Innovation Agency)

**Programme:** highly selective innovation and entrepreneurship training programme.

**Activities:** development of one innovative project, a software platform integrating computational neuropsychology and AI for cognitive profiling and neuropsychological digital-twin generation in clinical and organisational settings; training in business modelling, product validation, prototyping, IP and technology transfer.

### March 2024 Talk in the online workshop "Autismo e Ricerca Partecipativa" (La Sapienza; project "Terza Missione: Ascoltare la comunità autistica per...")

**Focus:** the Italian autism participatory research working group

### July 2023 Talk in the company seminar "Transizioni di vita, disabilità e vulnerabilità nell'organizzazione come comunità" (Poste Italiane S.p.A)

**Focus:** the experience of Asperger people in organizations

### June 2019 Talk in the workshop "Vagone FMD. da 01 a 100: aperitivo con l'innovazione" ("Fondazione Mondo Digitale")

**Focus:** new computational methods to investigate individual differences in higher-order cognition (attention, language, etc).

## REVIEWING ACTIVITY

### Project evaluations (competitive funding)

- **Reviewer (invited)**, French National Research Agency - ANR (2026) Evaluation of a research proposal within the AAPG Generic Call (CE28 panel).
- **Reviewer (invited)**, Sapienza University of Rome (2023). Evaluation of a research proposal within a competitive institutional funding call for medium and large-scale research infrastructures.

### Community roles

- **Community Reviewer**, Frontiers in Psychiatry - Computational Psychiatry Section.

### Invited peer reviewer

- **International journals:**
  - **"Neural Networks"** (Elsevier; topic: neuro-inspired Machine Learning)
  - **"Scientific Reports"** (Nature Publishing Group; topic: Neuro-robotics, Neuroscience)
  - **"Frontiers in Artificial Intelligence"** (Frontiers Media SA; topic: linguistics, computational modeling)
  - **"Frontiers in Psychiatry"** (Frontiers Media SA; topic: executive functioning, computational modeling)
  - **"Journal of Cognitive Psychology"** (Taylor & Francis; topic: experimental psychology, inner-speech, theory of mind, emotion recognition)
  - **"Intelligenza Artificiale"** (SAGE Publications; topic: machine learning applied to clinical diagnosis)
- **International conferences:**
  - **"The Annual Meeting of The Cognitive Science Society" (COGSCI, 2026)** (topic: higher-order cognition and neuro-divergence)
  - **"International Conference on Social Robotics + AI 2025 (ICSR, 2025)"** (topic: Social developmental robotics)
  - **"Cognitive Computational Neuroscience conference (CCNC, 2023)"** (topics: Various)
  - **"Cognitive Computational Neuroscience conference (CCNC, 2019)"** (topics: Various)

## COLLABORATION AND SUPERVISIONS

### Collaborations

- **ASL (Roma 6)**

**Country:** Italy  
**Referent:** Miriam Troianello  
**Topic:** "Executive functions and metacognition in clinical and control conditions of childhood"
- **Italian National Institute of Health**

**Country:** Italy  
**Referent:** Walter Adriani  
**Topic:** "Executive functions and metacognition in clinical and control conditions of childhood"
- **ETS "Bimbo al centro"** (Private clinics)

**Country:** Italy

**Referent:** Micaela Capobianco

**Topic:** "Executive functions and metacognition in clinical and control conditions of childhood"

- **Centre for Mental Health** (Swinburne University of Technology)

**Country:** Australia

**Referent:** Sean Carruthers

**Topic:** "Computational models of flexible cognition in Schizophrenia"

- **Consciousness, Cognition, and Computation Group (CO3)**

**Country:** Belgium

**Referent:** Axel Cleeremans

**Topic:** "Metacognition and flexible goal-directed behavior"

- **ItaliaCamp, srl**

**Country:** Italy

**Referent:** Riccardo Santilli

**Topic:** "Educational Robotics"

- **Social and Cognitive Neuroscience Laboratory (SCNL, La Sapienza)**

**Country:** Italy

**Referent:** Ilaria Minio Paluello

**Topic:** "Participatory research in Autism"

- **Body Action Language Lab (BALLAB, La Sapienza)**

**Country:** Italy

**Referent:** Anna Borghi

**Topic:** "Inner speech and Flexible goal-directed Behaviour in healthy, pathological and divergent conditions".

## Supervisions

- Di Giulio J. (2024/2025). **Post-lauream internship** at "Laboratory of Natural and Artificial Intelligence" (ISTC-CNR).

**Topics:** "Experimental and computational neuropsychology of higher-order cognition: development of experimental protocols and neuropsychological tests to probe Executive Functions and Metacognition".

- Manzi G. (2024/2025). **Pre-lauream internship** at "Laboratory of Natural and Artificial Intelligence" (ISTC-CNR) **and MA thesis** at "University of Rome La Sapienza, Department of Medicine and Psychology"

**Topics:** "Experimental and computational neuropsychology of higher-order cognition: development of experimental protocols and neuropsychological tests to probe Executive Functions and Metacognition".

- Costanzo R. (2022/2023). **MA thesis** at "University of Rome La Sapienza, Department of Medicine and Psychology".

**Topics:** "Models of Executive Functions and Inner-Speech in Computational Psychiatry".

- Tortora L., De Bei F., Biris I. (2020). **Advanced research project** at "Advance School of Artificial Intelligence" (ASAI).

**Topics:** "ML applications in Computational Psychiatry (DNN supporting clinical diagnosis of Autism)".

- Fabrizio Carlo (2020). **Advanced research project** at "Advance School of Artificial Intelligence" (ASAI).

**Topics:** "Models human working memory with ML methods (LSTM)".

- Buttinelli Alessandro (2019). **Advanced research project** at "Advance School of Artificial Intelligence" (ASAI).

**Topics:** "Models of Inner-Speech in human flexible cognition"

- Muratore Paolo (2019). **Advanced research project** at "Advance School of Artificial Intelligence" (ASAI).

**Topics:** "Development of Neuro-inspired algorithms in Machine Learning"

## PERSONAL SKILLS

**Mother tongue** Italian

### Other languages

|                                                                                                                                                       | COMPARED  |         | PARLATO     |            | WRITTEN PRODUCTION |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------|-------------|------------|--------------------|
|                                                                                                                                                       | Listening | Reading | Interaction | Production |                    |
| English                                                                                                                                               | B 2       | C 1     | B 2         | B 2        | C 1                |
| Levels: A1 / A2: Basic user - B1 / B2: Intermediate user - C1 / C2: Advanced user<br><a href="#">Common European Framework Reference of Languages</a> |           |         |             |            |                    |

### Computer skills

- General:
  - European Computer Driving License ECDL "Advanced" level
  - PC Assembly
- Operating systems used:
  - Windows
  - Linux
- Programming languages used:
  - Python
  - Scratch for Educational Robotics

- MatLab
- C ++
- R
- Latex
- PHP
- SQL
- VBA

**Personal interests**

- Consciousness
- Humans interactions
- Neuropsychology/Psychiatry
- Technology:
  - Applied Sciences
  - Robotics
  - Domotics
- Videogames (Real Time Strategy, RTS)
- PC Assembling

**Personal data**

I authorize the processing of my personal data pursuant to the Legislative Decree June 30, 2003, n. 196 "Code regarding the protection of personal data".