

# MARCO A. PETILLI

CURRICULUM VITAE

Web of Science Researcher ID: AAQ-3337-2020

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## CURRENT POSITION

**MARCH 2025 – PRESENT**

TENURE-TRACK RESEARCHER IN PSYCHOMETRICS (PSIC-01/C)

DEPARTMENT OF PSYCHOLOGY, UNIVERSITY OF MILANO-BICOCCA

## QUALIFICATIONS AND EDUCATION

### CERTIFICATIONS

**DECEMBER 2023**

NATIONAL SCIENTIFIC QUALIFICATION FOR ASSOCIATE PROFESSOR

Disciplinary Field: 11/E1 – General Psychology, Psychobiology, and Psychometrics

ASN 2021-2023. Validity: 12/12/2023 - 12/12/2035

**FEBRUARY 2020**

STATE EXAMINATION FOR PROFESSIONAL QUALIFICATION AS PSYCHOLOGIST

University of Milano-Bicocca

### ACADEMIC DEGREES

**FEBRUARY 2018**

PH.D. IN PSYCHOLOGY, LINGUISTICS, AND COGNITIVE NEUROSCIENCE (XXX CYCLE)

Department of Psychology, University of Milano-Bicocca

Supervisor: Professor Roberta Daini

Thesis Title: "Proactive top-down processes in visual search".

**JULY 2013**

MASTER'S DEGREE IN CLINICAL, DEVELOPMENTAL, AND NEUROPSYCHOLOGY

(110/110 cum laude)

Department of Psychology, University of Milano-Bicocca

Supervisor: Professor Roberta Daini

Thesis Title: "Dynamic assessment of drawing: spatial and temporal indicators of neuropsychological disorders"

**JULY 2010**

BACHELOR'S DEGREE IN PSYCHOLOGICAL SCIENCE AND TECHNIQUES

(110/110 cum laude)

Department of Psychology, University of Milano-Bicocca

Supervisor: Professor Roberta Daini

Thesis Title: "Visual discrimination of numerosity: No psychophysical evidence for the subitizing phenomenon"

# TEACHING EXPERIENCE

## PH.D. COURSES

**from 2017-2024**

*MATLAB (EXPERIMENT DESIGN AND DATA ANALYSIS)*

Ph.D. Program in Psychology, Linguistics, and Cognitive Neuroscience

Department of Psychology, University of Milano-Bicocca

24 hours per year

## MASTER'S DEGREE COURSES

**from 2017-2022 and 2024-2025**

*MATLAB Lab for COGNITIVE PSYCHOLOGY*

Master's Program in Applied Experimental Psychological Sciences

Department of Psychology, University of Milano-Bicocca

16 hours per year

**2020 – 2021**

*COGNITIVE AND BEHAVIORAL MEASURES*

Master's Program in Applied Experimental Psychological Sciences

Department of Psychology, University of Milano-Bicocca

32 hours

# RESEARCH EXPERIENCE

## MAIN RESEARCH INTERESTS

Vector space models for concept representations

The role of linguistic and perceptual experiences in semantic representation

The influence of linguistic experience on spatial information encoding

Computerized tools for cognitive assessment

Attentional processes across the lifespan, with a focus on sustained and selective attention

## DATA ANALYSIS TECHNIQUES

Statistical methods: t-tests, linear regression (simple and multiple), ANOVA, ANCOVA, correlations, General Linear Models (with and without random effects), Generalized Additive Models

Data reduction methods: Principal Component Analysis, Factor Analysis

Computational methods: Vector spaces, Convolutional Neural Networks (CNN), Distributional Semantic Models (DSM)

Electrophysiological data analysis: EEG, EMG, HR

## COMPUTER SKILLS

Programming and Data Analysis: MATLAB (advanced), R (advanced), Python (basic), Jamovi, SPSS, EEGLAB  
Experiment Development and Stimulus Control: Psychophysics Toolbox, Qualtrics

## LANGUAGES

Italian: Native  
English: Fluent

## RESEARCH APPOINTMENTS

### MARCH 2021 – FEBRUARY 2025

Post-Doctoral Research Fellow,

Department of Psychology, University of Milano-Bicocca

Duration: 24+24 months

Supervisor: Prof. Marco Marelli

Project: "Proactive control processes for distractor filtering in the laboratory and real life"

### SEPTEMBER 2020 – FEBRUARY 2021

Post-Doctoral Research Fellow,

Department of Psychology, University of Milano-Bicocca

Duration: 24 months (interrupted early due to new appointment)

Supervisor: Prof. Roberta Daini

Project: "The time of remote lessons: Identifying factors affecting students' sustained attention in online classes"

### APRIL 2018 – JULY 2019

Post-Doctoral Research Fellow

Department of Psychology, University of Milano-Bicocca

Duration: 16 months

Supervisor: Prof. Marco Marelli

Project: "Development of a distributed multimodal model of the conceptual system"

### FEBRUARY 2020 – MAY 2020

Research Fellowship

Department of Psychology, University of Milano-Bicocca

Duration: 4 months

Supervisor: Prof. Marco Marelli

Project: "Computer vision and linguistic processing".

### SEPTEMBER 2019 – DECEMBER 2019

Research Fellowship

Department of Psychology, University of Milano-Bicocca

Duration: 4 months

Supervisor: Prof. Emanuela Bricolo

Project: "A new paradigm for studying attention across the lifespan using virtual reality"

### FEBRUARY 2014 – DECEMBER 2014

Research Collaboration

IRCCS Don Carlo Gnocchi Foundation, Milan

Contract Duration: 10 months

Supervisor: Dr. Marco Rovaris

Project: "Evaluation of the effectiveness of a new drug on neurodegeneration and cognitive disorders in multiple sclerosis patients"

## RESEARCH STAYS

**OCTOBER 2016 – OCTOBER 2017**

**VISITING PHD STUDENT**

SWARTZ CENTER FOR COMPUTATIONAL NEUROSCIENCE, UNIVERSITY OF CALIFORNIA SAN DIEGO, CALIFORNIA (USA)

Research Topic: Studying expectations and attention in visual search using electrophysiological techniques.

Duration: 12 months

Supervisor: Prof. Scott Makeig

## RECOGNITIONS

### RESEARCH FUNDING

**2022 – PRESENT**

**FUNDING FOR PROJECTS OF NATIONAL INTEREST (PRIN)**

PROJECT GRANT: “THE WORLD IN WORDS: MOVING BEYOND A SPATIOCENTRIC VIEW OF THE HUMAN MIND”

PRIN – BANDO 2022 PROT. 2022TE3XMT

Role: Co-investigator, Principal Investigator: Prof. Luca Rinaldi

**2020-2022**

**GERMAN RESEARCH FOUNDATION (DEUTSCHE FORSCHUNGSGEMEINSCHAFT)**

PROJECT GRANT: “SYSTEMATICALLY EVALUATING THE PSYCHOLOGICAL VALIDITY OF COMPUTER-VISION MODELS FOR VISION-BASED CONCEPTUAL REPRESENTATIONS”

DFG – 2020 Call, Prot. 452322374

Role: Co-investigator, Principal Investigator: Dr. Fritz Günther

## AWARDS

**2023**

**Best Poster Presentation, Bicocca Research Day 2023**

University of Milano-Bicocca (€500)

Title: "Visual search and stimulus similarity in the era of deep learning: an empirical investigation using real image stimuli"

**2023**

**3° Place, Vittorio Girotto Award for Best AISC 2022 Paper**

Article published in 2024, "Sistemi Intelligenti", Il Mulino

Authors: Rodio F., Petilli M.A., Gatti D., Rinaldi L., & Marelli M.

Title: "Predicting false memories with a convolutional neural network: The effect of visual similarity in a DRM paradigm with visual stimuli"

**2022**

**Best Poster Presentation, Bicocca Research Day 2022**

University of Milano-Bicocca (€500)

Title: "The Vision Space (ViSpa) project: Vision-based concept representations induced from computer vision models"

**2021**

**Best Poster Presentation, Bicocca Research Day 2021**

University of Milano-Bicocca (€250)

Title: "Tablet-based Rey Figure Copy task differentiates constructional, organizational, and motor abilities"

# SCIENTIFIC OUTPUT

## JOURNAL ARTICLES (\* corresponding author; <sup>1</sup> first co-authorship)

1. Gatti, D., **Petilli**, M.A., Marchetti, M., Vecchi, T., Mazzoni, G., Rinaldi, L., & Marelli, M. (2025). False memories from nowhere: Humans falsely recognize words that are not attested in their vocabulary. *Psychonomic Bulletin & Review*, 1-10.  
<https://doi.org/10.3758/s13423-025-02677-7>
2. de Varda, A.\*, **Petilli**, M. A., & Marelli, M. (2025). SemanticScape: A Distributional Model of Concepts Grounded in Distance Patterns between Objects. *Journal of Memory and Language*, 142, 104624.  
<https://doi.org/10.1016/j.jml.2025.104624>
3. **Petilli**, M. A.\*, & Günther, F. (2024). Vision Spaces (ViSpa) in Language Sciences. In *Reference Module in Social Sciences*. Elsevier.  
<https://doi.org/https://doi.org/10.1016/B978-0-323-95504-1.00221-0>
4. **Petilli**, M. A.\*, Marelli, M., Mazzoni, G., Marchetti, M., Rinaldi, L., & Gatti, D. (2024) From Vector Spaces to DRM lists: False Memory Generator, a software for automated generation of lists of stimuli inducing false memories  
*Behavior Research Methods*  
<https://doi.org/10.3758/s13428-024-02425-0>
5. **Petilli**, M. A.\*, Rodio, F., Guenther, F., & Marelli, M. (2024). Visual search and real-image similarity: an empirical assessment of the search surface through the lens of deep learning.  
*Psychonomic Bulletin and Review*, 1-17.  
<https://doi.org/10.3758/s13423-024-02583-4>
6. **Petilli**, M. A.\*, & Marelli, M. (2024) Visual intuitions in the absence of visual experience: The role of direct experience in concreteness and imageability judgements.  
*Journal of Cognition*, 7(1)  
<https://doi.org/10.5334/joc.328>
7. Günther, F.\*, Marelli, M., & **Petilli**, M.A. (2024). Improved classification accuracy in deep vision models does not come with better predictions of perceptual similarity.  
In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 46).  
[https://escholarship.org/content/qt5rq7811b/qt5rq7811b\\_noSplash\\_0fccd918b2a0d65d55f51c22e3abd2e9.pdf?t=sgrig2](https://escholarship.org/content/qt5rq7811b/qt5rq7811b_noSplash_0fccd918b2a0d65d55f51c22e3abd2e9.pdf?t=sgrig2)
8. Rodio, F.\*, **Petilli**, M. A., Gatti, D., Rinaldi, L., & Marelli, M. (2024). Predicting false memories with convolutional neural networks: the effect of visual similarity in a DRM paradigm with pictorial stimuli.  
*Sistemi intelligenti*, 36(1), 73-96  
<https://www.rivisteweb.it/doi/10.1422/112960>
9. Fontana, S., Massironi, A., **Petilli**, M. A., Lega, C. Bricolo, E. (2024) A protocol to evaluate the impact of visual distractors on driving attention using a virtual reality simulator. *CEUR Workshop Proceedings*, 2024, 3903, pp. 8–16  
[https://ceur-ws.org/Vol-3903/AIxHMI2024\\_paper2.pdf](https://ceur-ws.org/Vol-3903/AIxHMI2024_paper2.pdf)

10. Giraud, M., Zapparoli, L., Basso, G., **Petilli**, M. A., Paulesu, E., Nava, E. (2024)  
Mapping the Emotional Homunculus with fMRI  
*iScience*, 27(6).  
<https://doi.org/10.1016/j.isci.2024.109985>
11. Gregorini, C., De Carli, P., Parolin, L. A. L., **Petilli** M. A., Konvalinka, I., & Preti, E. (2024)  
Stable asynchrony? Association between borderline personality traits and interpersonal asynchrony.  
*Personality Disorders: Theory, Research, and Treatment*  
<https://doi.org/10.1037/per0000684>
12. Günther, F.\*, Marelli, M., Tureski, S., & **Petilli**, M. A. (2023)  
ViSpa (Vision Spaces): A computer-vision-based representation system for individual images and concept prototypes, with large-scale evaluation.  
*Psychological Review*, 130(4), 896  
<https://doi.org/10.1037/rev0000392>
13. Pancani, L.\*, **Petilli**, M. A., Riva, P., & Rusconi, P. (2023)  
I can't live without you: delay discounting in smartphone usage.  
*Journal of Cognitive Psychology*, 35(4), 441-455.  
<https://doi.org/10.1080/20445911.2023.2195031>
14. **Petilli**, M. A.\*, Günther, F., & Marelli, M. (2022)  
The Flickr frequency norms: What 17 years of images tagged online tell us about lexical processing.  
*Behavior Research Methods*, 56(1), 126-147  
<https://doi.org/10.3758/s13428-022-02031-y>
15. Günther, F.\*, **Petilli**, M. A., Vergallito, A., & Marelli, M. (2022)  
Images of the unseen: Extrapolating visual representations for abstract and concrete words in a data-driven computational model.  
*Psychological Research*, 86(8), 2512-2532  
<https://doi.org/10.1007/s00426-020-01429-7>
16. **Petilli**, M. A.\*, Daini, R., Saibene, F. L., & Rabuffetti, M. (2021)  
Automated scoring for a Tablet-based Rey Figure copy task differentiates constructional, organisational, and motor abilities.  
*Scientific Reports*, 11(1), 14895  
<https://doi.org/10.1038/s41598-021-94247-9>
17. **Petilli**, M. A.\*, Günther, F., Vergallito, A., Ciapparelli, M., & Marelli, M. (2021)  
Data-driven computational models reveal perceptual simulation in word processing.  
*Journal of Memory and Language*, 117, 104194  
<https://doi.org/10.1016/j.jml.2020.104194>
18. **Petilli**, M. A.\*, Marini, F., & Daini, R. (2020)  
Distractor context manipulation in visual search: How expectations modulate proactive control.  
*Cognition*, 196, 104129  
<https://doi.org/10.1016/j.cognition.2019.104129>
19. **Petilli**, M. A., Rinaldi, L., Trisolini, D. C., Girelli, L., Vecchio, L. P., & Daini, R.\* (2020)  
How difficult is it for adolescents to maintain attention? The differential effects of video games and sports.  
*Quarterly Journal of Experimental Psychology*, 73(6), 968-982  
<https://doi.org/10.1177/1747021820908499>
20. Günther, F.\*, **Petilli**, M. A., & Marelli, M. (2020)  
Semantic transparency is not invisibility: A computational model of perceptually-grounded conceptual combination in word processing.  
*Journal of Memory and Language*, 112, 104104  
<https://doi.org/10.1016/j.jml.2020.104104>

21. Vergallito, A. \*, **Petilli**, M. A., & Marelli, M. (2020)  
Perceptual modality norms for 1,121 Italian words: A comparison with concreteness and imageability scores and an analysis of their impact in word processing tasks.  
*Behavior Research Methods*, 52(4), 1599-1616  
<https://doi.org/10.3758/s13428-019-01337-8>
22. Vergallito, A. <sup>1\*</sup>, **Petilli**, M. A. <sup>1</sup>, Cattaneo, L., & Marelli, M. (2019)  
Somatic and visceral effects of word valence, arousal and concreteness in a continuum lexical space.  
*Scientific Reports*, 9(1), 20254  
<https://doi.org/10.1038/s41598-019-56382-2>
23. **Petilli**, M. A. \*, Trisolini, D. C., & Daini, R. (2018)  
Sustained-paced finger tapping: A novel approach to measure internal sustained attention.  
*Frontiers in Psychology*, 9, 292606  
<https://doi.org/10.3389/fpsyg.2018.00881>
24. Trisolini, D. C., **Petilli**, M. A., & Daini, R. \* (2018)  
Is action video gaming related to sustained attention of adolescents?  
*Quarterly Journal of Experimental Psychology*, 71(5), 1033-1039  
<https://doi.org/10.1080/17470218.2017.1310912>
25. Feldmann-Wüstefeld, T. \*, Miyakoshi, M., **Petilli**, M. A., Schubö, A., & Makeig, S. (2017)  
Reduced visual attention in heterogeneous textures is reflected in occipital alpha and theta band activity.  
*PLOS One*, 12(12), e0187763  
<https://doi.org/10.1371/journal.pone.0187763>
- 26.

## DOCTORAL THESIS

**Petilli**, M. A. (2018). Proactive top-down processes in visual search. (PhD Thesis).

## MAIN PRESENTATIONS

### INVITED TALKS

#### **Vector space models for concept representation: exploring the role of visual and linguistic experience in our memory**

Presented as part of the Applied Psycholinguistics course, University of Milano-Bicocca, invited by Dr. Simona Amenta, April 18, 2024, Milan

#### **Understanding the factors that guide visual search through computational models**

Presented at the “Words as Pseudo-Worlds” workshop, invited by Prof. Luca Rinaldi, University of Pavia, February 7, 2024, Pavia

#### **Exploring the role of visual and linguistic representations in cognition: insights from Convolutional Neural Networks and Distributional Semantic Models**

Talk at “Cognition and Computation Distinguished Seminars,” invited by Prof. Marco Zorzi and Dr. Alberto Testolin, University of Padua, December 21, 2023, Padua

#### **Predicting false memories with computational models: the effect of visual and semantic similarity in a DRM paradigm with pictorial stimuli**

Presented at the “Workshop on Computational Models in Psycholinguistics,” invited by Dr. Fritz Günther, Humboldt University, Berlin, February 13, 2023

## SELECTED CONFERENCE PRESENTATIONS

Petilli, M.A., Marelli, M., Mazzoni, G., Marchetti, M., Rinaldi, L., & Gatti, D.

False Memory Generator: Software for the Automatic Generation of DRM Stimulus Lists from Vector Spaces.  
*Psychonomic Society 65th Annual Meeting*, November 21-24, 2024 – New York City, New York, **USA**. Poster presentation.

Petilli, M.A., Rodio, F., Günther, F. & Marelli, M.

Visual Search and Stimulus Similarity: An Empirical Study with Real Images and Convolutional Neural Networks.  
*46th European Conference on Visual Perception (ECVP)*, August 25-29, 2024 – Aberdeen, UK. Oral presentation.

Petilli, M.A., Günther, F. & Marelli, M.

Improved Classification Accuracy in Deep Vision Models Does Not Come with Better Predictions of Perceptual Similarity.

*45th Annual Meeting of the Cognitive Science Society (CogSci)*, July 24-27, 2024 – Rotterdam, Netherlands. Oral presentation.

Petilli, M.A., Marelli, M., Mazzoni, G., Marchetti, M., Rinaldi, L., & Gatti, D.

False Memory Generator: Leveraging Vector Spaces to Generate Word Lists that Induce False Memories.  
*International Word Processing Conference (WoProc 2024)*, July 4-6, 2024 – Faculty of Philosophy, University of Belgrade, Belgrade, Serbia. Oral presentation.

Petilli, M.A., Rodio, F., Günther, F. & Marelli, M.

Visual Search and Stimulus Similarity Revisited in the Era of Deep Learning: An Empirical Investigation using Real Image Stimuli.

*29th Conference of the Italian Association of Psychology (AIP) – Experimental Section*, September 18-20, 2023 – Lucca, Italy. Oral presentation.

Petilli, M.A., Rodio, F., Gatti D., Rinaldi, L. & Marelli, M.

Predicting False Memories with Data-Driven Computational Models: The Role of Visual and Linguistic Similarity in the DRM Paradigm.

*23rd Conference of the European Society for Cognitive Psychology (ESCoP)*, September 6-9, 2023 – Porto, Portugal. Oral presentation.

Petilli, M.A. & Marelli, M.

Visual Intuitions in Blind People: The Role of Direct Sensory Experience on Concreteness and Imageability Ratings.

*20th edition of Psycholinguistics in Flanders (PiF)*, May 29-31, 2023 – Ghent, Belgium. Poster presentation.

Petilli, M.A., Rodio, F., Gatti D., Rinaldi, L., & Marelli, M.

Predicting False Memories with Convolutional Neural Networks: The Effect of Visual Similarity in a DRM Paradigm with Pictorial Stimuli.

*18th Conference of the Italian Association of Cognitive Science (AISC)*, December 15-17, 2022 – Rovereto, Trento, Italy. Oral presentation.

Petilli, M.A. & Marelli, M.

Imageability and Concreteness Ratings in Blind People: The Role of Direct Experience in Perceptual Judgments.  
*30th Conference of the Italian Association of Psychology (AIP) – All Sections*, September 27-30, 2021 – Padua, Italy. Oral presentation.

Petilli, M.A. & Marelli, M.

Visual Intuitions in Blind People: The Role of Direct Experience in Perceptual Judgments.

*European Workshop on Cognitive Neuropsychology (EWCN)*, January 24-28, 2022 – Online Conference. Oral presentation.

Petilli, M.A., Günther, F., & Marelli, M.

Objective Visual Frequency Norms: What 15 Years of Images Uploaded on Flickr.com Tell Us About Lexical Processing.



27th Conference of the Italian Association of Psychology (AIP) – Experimental Section, September 8-10, 2021 – Lecce, Italy. Oral presentation.

Petilli, M.A., Marini, F., & Daini, R.

Proactive Attentional Mechanisms in Visual Search.

Rovereto Attention Workshop (RAW) 2019, October 24-26, 2019 – Rovereto, Italy. Poster presentation.

Petilli, M.A., Ciapparelli, M., Günther, F., Vergallito, A., & Marelli, M.

Does Understanding Words Require Visual Simulation? Study of Lexical Priming with Data-Driven Computational Models.

25th Conference of the Italian Association of Psychology (AIP) – Experimental Section, September 18-20, 2019 – Milan, Italy. Oral presentation.

Petilli, M.A., Günther, F., Vergallito, A., Ciapparelli, M., & Marelli, M.

Does Word Processing Involve Perceptual Simulations? An Experiment with Semantic Priming and Vision-Based Distributional Models.

European Workshop on Cognitive Neuropsychology (EWCN), January 21-25, 2019 – Bressanone, Italy. Oral presentation.

Petilli, M.A., Trisolini, D., Daini, R.

Sustained-Paced Finger Tapping: A New Approach to Measuring Sustained Attention.

27th Conference of the Italian Association for Research and Intervention in Learning Psychopathology (AIRIPA), September 28-29, 2018 – Arezzo, Italy. Oral presentation.

Petilli, M.A., Marini, F., Daini, R.

Proactive Control Mechanisms for Distractor Expectation in Visual Search.

European Conference on Visual Perception (ECVP), August 26-30, 2018 – Trieste, Italy. Poster presentation.

Petilli, M.A., Marini, F., Daini, R.

Distractor Expectation Modulates Proactive Control Mechanisms in Visual Search.

1st Joint Congress SEPEX, SEPNECA, AIP, July 3-6, 2018 – Madrid, Spain. Oral presentation.

Petilli, M.A., Marini, F., Daini, R.

Distractor Expectation Modulates Proactive Control in Visual Search.

Society for Neuroscience (SfN), November 12-16, 2016 – San Diego, California, USA. Poster presentation.

Petilli, M.A., Marini, F., & Daini, R.

Proactive Control Processes in Serial and Parallel Visual Search Tasks.

22nd Conference of the Italian Association of Psychology (AIP) – Experimental Section, September 20-22, 2016 – Rome, Italy. Oral presentation.

Petilli, M.A., Marini, F., Daini, R.

Proactive Attentional Mechanisms in Visual Search.

Rovereto Attention Workshop (RAW), November 5-8, 2015 – Rovereto, Italy. Poster presentation.

Petilli, M.A., Saibene, F., Rabuffetti, M., Baglio, F., Nemni, R., Daini, R.

Spatial and Temporal Indicators of Neuropsychological Disorders in Drawing.

33rd European Workshop on Cognitive Neuropsychology (EWCN), January 25-30, 2015 – Bressanone, Italy. Poster presentation.

## ONLINE RESOURCES

### WEBSITES

#### ViSpa (Vision Spaces Website)

Description: A web interface to explore similarity relations and download estimates of visual similarity among images and among prototype-based visual representations for nearly 8,000 concepts.

<https://vectorswebtool.eu.pythonanywhere.com>

Related Article: <https://doi.org/10.1037/rev0000392>

## SOFTWARE

### FMG (False Memory Generator)

Description: Software to automatically generate DRM lists for studying false memories. Originally developed in MATLAB, also available in a standalone version with a user-friendly GUI.

Availability: Open Science Framework OSF. License: CC-BY 4.0

Link: <https://osf.io/gsrfu/>

Related Article: <https://doi.org/10.3758/s13428-024-02425-0>

### FLICKR PHOTOS EXPLORER

Description: Software for quickly exploring and downloading image datasets grouped by tag from Flickr.com (via the Flickr.photos.search API). Useful for training visual models or building visual vector spaces. Developed in MATLAB, also available in a standalone version with a GUI.

Availability: OSF. License: CC-BY 4.0

Link: <https://osf.io/2zfs3/>

### T-RCF (Tablet-Based Rey Figure Copy Task)

Description: MATLAB application for automated analysis of drawings from the Rey Figure Copy task acquired with a graphics tablet. Useful for extracting visuospatial, procedural, and motor performance indicators.

Availability: OSF. License: CC-BY 4.0 Link: <https://osf.io/rt4hp/>

Related Article: <https://www.nature.com/articles/s41598-021-94247-9>

### VISPA CALCULATOR (in progress)

Standalone software with an intuitive graphical interface. Converts individual or batches of images into “visual” vector representations (the internal vectors generated by CNN-based visual models trained to recognize objects), constructing visual spaces (ViSpa, short for Vision Spaces). The software computes similarity automatically among uploaded images or among prototypes of the objects represented therein.

Availability: Beta version on OSF: [https://osf.io/vze67/?view\\_only=006193bfc862427f80f1d0dc8c929160](https://osf.io/vze67/?view_only=006193bfc862427f80f1d0dc8c929160)

## LEXICAL NORMS

### PERCEPTUAL MODALITY NORMS

Perceptual strength estimates for the five senses for 1,121 Italian words, usable as control or research variables for investigating the role of perceptual experience associated with word referents. These norms have been shown to predict human behavior in lexical tasks such as lexical decision and picture naming.

Availability: OSF

License: CC-BY 4.0

Link: <https://osf.io/zdg59/>

Related Article: <https://doi.org/10.3758/s13428-019-01337-8>

### FLICKR FREQUENCY NORMS

Description: Frequency norms for words derived from an extralinguistic corpus: specifically, words used as image tags on social media. Drawn from the Flickr photo-sharing platform, which contains billions of tagged photos, these norms represent a hybrid measure of linguistic and visual experience, capturing aspects of language usage not seen in standard frequency measures.

Availability: OSF

License: CC-BY 4.0 Link: : <https://osf.io/2zfs3/>

Related Article: <https://doi.org/10.3758/s13428-022-02031-y>

## EDITORIAL ACTIVITIES AND OTHER PROFESSIONAL SERVICE

Reviewer Editor: Perception Science Section of Frontiers in Psychology and Frontiers in Neuroscience

Ad Hoc Reviewer for Behavior Research Methods, Scientific Reports, Journal of Memory and Language, The Quarterly Journal of Experimental Psychology, Journal of Experimental Psychology: Learning, Memory, and Cognition, Journal of Cognitive Psychology

### Memberships (current and past):

- Italian Association of Psychology (AIP)
- European Society for Cognitive Psychology (ESCP)
- Society for Neuroscience (SfN)
- Italian Association of Cognitive Science (AISC)