DAVIDE CORTINOVIS

Email: davide.cortinovis@unitn.it   Homepage: davidecortinovis-droid.github.io   Google Scholar

EDUCATION

Center for Brain/Mind Sciences, University of Trento — Rovereto, Italy
PhD in Cognitive and Brain Sciences — 2021 - Nov 2025 (expected)

My research is at the intersection of cognitive and computational neuroscience, focusing on two topics:

- Spatial organization of object dimensions in human high-level visual cortex: I collect and analyse fMRI data to study how functional selective areas are organized in the occipitotemporal cortex, especially focusing on the larger scale principles (animacy, real-world size, action) that drive their location and computations.

- Topographic models: I explore models that simulate the spatial and functional organization of the brain, aiming to test their convergence and divergence with visual cortex.

- My contribution to the field is the discovery of a large scale principle based on the action-related properties of objects that explains the arrangement of category-selective areas. I also highlighted gaps in the ability of state-of-the-art neural networks to explain this action-based organization.

Justus Liebig University Giessen — Giessen, Germany
Visiting PhD — 2024

I spent three months in Martin Hebart's lab as a visiting PhD student, where I analysed an fMRI dataset, compared it with a series of topographic artificial neural networks, and ran a series of encoding modelling analyses to test category selectivity in visual cortex.

Center for Brain/Mind Sciences, University of Trento — Rovereto, Italy
Master in Cognitive Neuroscience. Final grade: 110 with honors — 2019 - 2021

University of Leeds — Leeds, United Kingdom
Erasmus exchange — 2018-2019

University of Bergamo — Bergamo, Italy
Bachelor of Psychology. Final grade: 110 with honors — 2016 - 2019

PUBLICATIONS

1. **Cortinovis, D**, Truong, N., Op de Beeck, H., & Bracci, S. (2025) Investigating action topography in visual cortex and artificial neural networks *preprint at bioarxiv.* [paper]

2. **Cortinovis, D**, Peelen, M. V., & Bracci, S. (2025). Tool representations in human visual cortex. *Journal of Cognitive Neuroscience*, 37(3), 515-531. [paper]

CONFERENCE ABSTRACTS

1. **Cortinovis, D.**, Hebart, M., & Bracci, S. (2025). Comparing Object Selectivity in Visual Cortex and Topographic Deep Artificial Neural Networks. *Conference on Cognitive Computational Neuroscience.* [conference abstract]

2. **Cortinovis, D.**, Orlandi, G., van Campenhout, L., & Bracci, S. (2025). Object dimensions underlying food selectivity in visual cortex. *Journal of Vision*, 25(9), 1910-1910.

3. Bracci, S., **Cortinovis, D.**, & Garnuto, E. (2025). The Effect of Scene Clutter on Visual Representations. *Journal of Vision*, 25(9), 2061-2061.

4. **Cortinovis, D.**, Op de Beeck, H., & Bracci, S. (2023). The role of action-related properties in shaping the object space in the biological and artificial brain. *Journal of Vision*, 23(9), 4868-4868.

5. **Cortinovis, D.**, Op de Beeck, H., & Bracci, S. (2021). The organization of body-parts representations in Deep Convolutional Neural Networks. *Perception*, 50(1_SUPPL), 123-123.

POSTER AND TALK PRESENTATIONS

1. Object dimensions underlying food selectivity in visual cortex. **Talk** at Vision Sciences Society, St. Pete Beach, Florida, USA (May 2025). [link]

2. Category-selectivity, again: Hand-selective clusters in visual cortex support action-related behavioural goals. **Talk** at Organization for Human Brain Mapping (OHBM), Seoul, South Korea (June 2024).

3. The action and animacy feature spaces reveal a functional dissociation between lateral and ventral occipitotemporal cortex. Poster presentation at Concepts, Action, Objects (CAOs) Workshop, Rovereto, Italy (May 2024)

4. Category-selectivity, again: Hand-selective clusters in visual cortex support action-related behavioural goals. **Talk** at TEAP, Regensburg, Germany (March 2024).

5. Category-selectivity, again: Hand-selective clusters in visual cortex support action-related behavioural goals. Poster presentation at EWCN, Bressanone, Italy (January 2024).

6. Unveiling the Dimensions of Action Object Space: Insights from fMRI and DCNNs. Poster Presentation at Neuro-AI Talks, Osnabrueck, Germany (September 2023)

7. Unveiling the Dimensions of Action Object Space: Insights from fMRI and DCNNs. Poster presentation at Seeing and Acting Workshop (SAW), Coimbra, Portugal (September 2023)

8. The role of action-related properties in shaping the object space in the biological and artificial brain. Poster presentation at Concepts, Action, Objects (CAOs) Workshop, Rovereto, Italy (May 2023)

9. The role of action-related properties in shaping the object space in the biological and artificial brain. Poster presentation at ECVP, Nijmegen, Netherlands (August 2022).

ACADEMIA SERVICES

- Reviewer for *Imaging Neuroscience*.
- Reviewer for *Cortex*.

TEACHING AND MENTORSHIP

- Teaching assistant for the course Computational Modeling of Perception for the master program in Cognitive Science at the University of Trento. My part of the course focused on spatial organization in visual cortex and how to model that with neural networks.
- Teaching assistant for the course Research Design and Hands-on Statistics for the master program in Cognitive Science at the University of Trento (2022/2023).
- Supervision of internship and thesis of three master students.

AWARD

- Fully-funded scholarship for the Master program at the University of Trento, 2019-2021.

ADDITIONAL INFORMATION

Languages	Italian (native), English (C1), Spanish (B1), French (B1)
Technical skills	MATLAB, Python, fMRI (data collection and data analysis)