Valentin Guigon

Postdoctoral researcher in computational neuroscience, computational psychiatry, and NeuroAI

Social Learning and Decisions Lab, Department of Psychology, University of Maryland

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RESEARCH INTERESTS

Themes	Belief updating; information-seeking; social learning; metacognition; decision-making.
Disciplines	Computational psychiatry; computational neuroscience; behavioral economics; NeuroAI.
Broader interests	Public policy, epistemology, photography, and culture writ large.

ACADEMIC POSITIONS

Postdoctoral researcher · Social Learning and Decisions Lab March 2024 – present

Department of Psychology, University of Maryland

College Park, MD, USA · Social learning · PI: Caroline Charpentier

Combining computational modeling with neuroimaging to investigate the neurocomputational mechanisms underlying neurotypical and neuroatypical learning in social contexts, and individual differences in dynamic belief updating during trust learning.

Lead development of lab-wide reproducible infrastructure for behavioral, fMRI, and model-fitting workflows, including shared pipelines, QC and reporting systems.

Research assistants: Joshua Berman, Atharv A. Umap, Gaurav D. Mahajan.

Postdoctoral researcher · Neuroeconomics Laboratory March 2023 – Oct 2023

CNRS UMR 5229, ISCMJ · CNRS UMR 5824, GATE

Lyon, France · Social decision-making · PIs: Marie Claire Villeval, Jean-Claude Dreher

Extended my doctoral work on the transmission of uncertain information to belief updating in social-network settings. The position centered on behavioral study design, implementation, analysis planning, and model-based interpretation of social influence and belief revision.

PhD researcher · Neuroeconomics Laboratory Oct 2018 – Dec 2022

CNRS UMR 5229, ISCMJ · CNRS UMR 5824, GATE

Lyon, France · Social decision-making · PIs: Marie Claire Villeval, Jean-Claude Dreher

Designed and analyzed behavioral and neuroimaging studies on how people seek, evaluate, and transmit uncertain information in social and economic environments. The dissertation developed links between metacognition, information seeking, belief updating, and inferences about others' preferences for information.

Research intern · Neuroeconomics Laboratory Feb – July 2018

CNRS UMR 5229, ISCMJ

Lyon, France · Decision-making and reward processing · PI: Jean-Claude Dreher

Conducted functional-connectivity analyses of testosterone-induced effects on orbitofrontal-amygdala coupling during anticipation of primary and secondary rewards, using first-level and connectivity models for fMRI data.

Research intern · Neuroeconomics Laboratory June – Aug 2017

CNRS UMR 5229, ISCMJ

Lyon, France · Decision-making and reward processing · PI: Jean-Claude Dreher

Contributed to fMRI analyses of rewarded tasks and to research and ethics protocols for a study on moral norms under tDCS-disrupted decision-making.

Additional early research experience March – April 2016

CNRS UMR 7260; CNRS UMR 7260; La Poste; CNRS UMR 7309

Vestibular cortex and bodily self-consciousness; complex-systems modeling (Lotka-Volterra); nudging for risky behavior and ecological transition; theory of mind in schizophrenia.

PUBLICATIONS

PEER-REVIEWED

Guigon, V., Geay, L., & Charpentier, C. J. (2026). Rethinking misinformation through plausibility estimation and confidence calibration. *Communications Psychology*, 4, 24.

Guigon, V., Villeval, M. C., & Dreher, J. C. (2024). Metacognition biases information seeking in assessing ambiguous news. *Communications Psychology*, 2(1), 122.

Hu, Y., **Guigon, V.**, Philippe, R., Zhao, S., Derrington, E., Corgnet, B., … & Dreher, J. C. (2022). Perturbation of Right Dorsolateral Prefrontal Cortex Makes Power Holders Less Resistant to Tempting Bribes. *Psychological Science*, 33(3), 412–423.

O'Connor, D. A., Janet, R., **Guigon, V.**, Belle, A., Vincent, B. T., Bromberg, U., … & Dreher, J. C. (2021). Rewards that are near increase impulsive action. *iScience*, 24(4), 102292.

UNDER REVIEW

Mombelli, S., ..., **Guigon, V.**, ..., & Benrimoh, D. (2026). Integrating theory-driven and data-driven computational psychiatry. *psyRxiv*.

Benistant, J., **Guigon, V.**, Nicolas, A., Derrington, E., & Dreher, J. C. (2025). Dynamic valuation bias explains social influence on cheating behavior. *bioRxiv*.

IN PREPARATION

Mahajan, G. D., Charpentier, C. J. & **Guigon, V.**, Ten simple rules for achieving computational reproducibility in neuroscience.

Guigon, V., Topel, S., & Charpentier, C. J. Individual differences in dynamic belief updating during trust learning.

Conference presentations: SNE (2025); CISE (2025).

Guigon, V., Benistant, J., Villeval, M. C., & Dreher, J.-C. Neurocomputational processes of inferring others' preferences for information.

Conference presentations: SBDM (2021, 2023); SNE (2021).

Guigon, V., Dunne, S., Pazderska, A., Frodl, T., Nolan, J. J., Clairis, N., O'Doherty, J. P., & Dreher, J.-C. Testosterone causes decoupling of orbitofrontal cortex-amygdala relationship while anticipating primary and secondary rewards.

Conference presentation: OFC Meeting (2018).

FELLOWSHIPS, AWARDS AND AFFILIATIONS

UMD Department of Psychology 2026 Open Science Award (2026)
Fellow, Thinking About Thinking (2026–present)
Full Member, Sigma Xi, the Scientific Research Honor Society (2026–present)
Affiliate, Neuroscience and Cognitive Science program (NACS), UMD (2025–present)
Affiliate, Artificial Intelligence Interdisciplinary Institute at Maryland (AIM), UMD (2024–present)
Cortex-magazine, editorial board member (January 2023–January 2024)
LabEX CORTEX fellowship (2022–2023)
LabEX CORTEX fellowship (2021–2022)
IDEX INDEPTH PhD fellowship (2018–2021)

SELECTED SKILLS

Modeling	Computational modeling and simulation; Bayesian statistical analysis and inference; reinforcement-learning, bayesian and decision-making models.
Methods	Experimental design; simulations; neuroimaging; tDCS; open-science and reproducibility.
Leadership	Project leadership; cross-disciplinary collaboration; teaching, mentoring, and scientific communication.

TOOLS AND METHODS

Authored software	neurodesign-plus (fMRI experimental-design optimization): PyPI | ReadTheDocs
Programming	MATLAB, Python, R
Computational modeling	VBA toolbox, JAGS, BRMS, PyMC, Hugging Face
Neuroimaging	SPM, fMRIPrep, Nilearn, Fitlins, MRIcroGL, CONN

EDUCATION

PhD in Biology, Cognitive Neuroscience 2018–2022
Neurosciences and Cognition Doctoral School, Université Claude Bernard Lyon 1, France
Dissertation: Neurocognitive mechanisms underlying transmission of uncertain information in humans.

MSc in Cognitive Science 2016–2018
Faculty of Psychology, Université Lumière Lyon 2, France

BSc in Physiology and Neuroscience, Cognitive and Adaptive Neuroscience 2015–2016
Faculty of Sciences, Aix-Marseille Université, France

BSc in Psychology 2012–2015
Faculty of Human Sciences, Aix-Marseille Université, France

TEACHING AND MENTORING

TEACHING

Instructor · NACS 645 Cognitive Science Sept–Dec 2025
University of Maryland · 11 PhD students
Course: Foundational debates in cognitive science. Topics: concepts, modularity, embodied cognition, cognitive architecture, methods, social cognition, intercultural cognition, cognitive systems, thinking, and NeuroAI.

Instructor · Cortecs Critical Thinking Summer School July 2025
France · 20 students
Course: Information; Beliefs; Predictions.

Instructor · SPM fMRI preprocessing and contrasts June 2023
Université Claude Bernard Lyon 1 · 20 PhD students
Course: fMRI preprocessing and first-level modeling with SPM.

Teaching assistant · Cognitive Psychology Sept–Dec 2017, 2018, 2019, 2020
Université Lumière Lyon 2 · 6 × 40 undergrad students · Professors: François Osiurak; Gaën Plancher
Licence 1 and License 2 courses covering research methodology, experimental paradigms, emotions, working memory, executive functions, and language.

MENTORING

Research mentor · Research assistants March 2025–ongoing
University of Maryland · 3 students

Research mentor · PhD student Sept 2024–April 2025
University of Maryland · 1 student

Research mentor · Neuroscience Master students Jan–June 2023, 2024
Université Claude Bernard Lyon 1 · 2 × 3 students

SCIENCE DISSEMINATION

Substack· Medium

2025: **Guigon, V.** La sphère publique et la chambre d'écho. Cortecs.org.

2024: S. Tremblay & CheeseNaan Productions. Au-delà des écrans : comprendre la désinformation en ligne. Spotify.

2023: **Guigon, V.** Notre société est-elle de plus en plus polarisée ? Cortex-mag.net.

2021: A. Sorce. L'invité de la semaine - Valentin Guigon, fake news et théories du complot. Pharefm.com.
O. Mollaret. À Lyon : les victimes de fake news "fonctionnent comme tout le monde". Rue89lyon.fr.
Yanis. Comment ne pas se faire avoir par les fake news ? Alveole.media / Cognitif.

2020: A. Gabert. Pourquoi les théories du complot plaisent à notre cerveau. Cortex-mag.net.

EXTERNAL TRAINING

2025: **Hugging Face AI Agents**, 28h.

2024: **Hugging Face Deep RL**, Hugging Face, 28h (Certified); **Reproducible Research II**, INRIA (FUN-MOOC), 35h; **Reproducible Research**, INRIA (FUN-MOOC), 24h (Certified); **ML with scikit-learn**, INRIA (FUN-MOOC), 36h (Certified); **Structural Equation Modeling**, CenterStat, 18h (Certified); **Game Theory**, Stanford University (Coursera), 17h.

2023: **Hugging Face NLP Course**, Hugging Face, 49h; **CS50**, Harvard University (edX), 30h; **ML with Python**, IBM (Coursera), 15h.

2022: **Bayesian Statistics in Evolutionary Biology**, LBBE (UCBL1), 27h (Certified).

2021: **Statistical Bayesian Modelling**, L. Nalborczyk (MaiMoSiNe), 20h (Certified); **Integrity and Ethics in Research Careers**, UDL (FUN-MOOC), 30h (Certified).

2020: **Model Thinking**, S. E. Page (Coursera), 27h.

2019: **Fundamentals of Noninvasive Brain Stimulation**, BrainBox, 14h (Certified); **Leaders of Learning**, Harvard University (FUN-MOOC), 15h (Certified); **Introduction to Neuroeconomics**, V. Klucharev (Coursera), 31h.

2018: **Principles of fMRI I and II**, M. Lindquist & T. Wager (Coursera), 17h.