



Nicolas Kuske

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*Exploring the Intersection of Artificial Intelligence,
Cognitive-Neuroscience and Consciousness Science.*

Employment and Education

03/2025 – today

Principal Investigator

Technical University of Eindhoven, Netherlands and Artificial and Natural Intelligence Toulouse Institute (ANITI), France

04/2024 – 02/2025

Postdoctoral Research Associate

Artificial and Natural Intelligence Toulouse Institute (ANITI), Brain and Cognition Research Center (CerCo), France

06/2023 – 08/2023

Visiting Scholar

Center for Mind Brain and Consciousness, New York University, United States of America

02/2021 – 01/2024

Research Coordinator

Computer Science Growth Committee, Technical University of Chemnitz, Germany

07/2020 – 03/2024

Postdoctoral Researcher

Department of Computer Science, Technical University of Chemnitz, Germany

02/2017 – 12/2020

Doctorate of Natural Sciences in Cognitive Science

Thesis: On the Relation between Representation and Embodiment in Spatial Cognition.

Institute of Cognitive Science, Osnabrück University, Germany

04/2016 – 12/2016

Public Relations Assistant

European Union robotics development program ECHORD++, Technical University of Munich, Germany

11/2013 – 03/2016

Graduate Research Assistant

Biocenter, Ludwig Maximilian University of Munich, Germany

10/2010 – 02/2015

Master of Science in Physics

Ludwig Maximilian University of Munich, Germany

08/2009 – 02/2010

Language Student

Chinese Level A1

Beihang University, Beijing, China

10/2006 – 08/2010

Bachelor of Science in Physics

Rhenish Friedrich Wilhelm University of Bonn, Germany

Grants and Scholarships

03/2025 – 09/2025

Grant Activity - PI

ENFIELD Exchange Scheme Open Call OC2-2024-TES-02. *Robust Multimodal Continual Learning for Robotics*. Awarded € 14.400 by the European Innovation Council funded ENFIELD Project.

Grant Activity - neither PI or Co-PI

RESEARCH TRAINING GROUP. *HIPPO – Habit-inspired Methods in Processing Information*. Submitted to the German Research Association.

11/2023

HORIZON-EIC-2021-PATHFINDERCHALLENGES-01. *Counterfactual Assessment and Valuation for Awareness Architecture (CAVAA)*. Awarded € 3.1 million by the European Innovation Council.

10/2022

06/2017 – 07/2020

Doctoral Fellowship

Doctoral fellow in the research training group Situated Cognition funded by the German Research Association (GRK-2185/1).

Publications

In Press

Kuske, N., & VanRullen, R. (in press). *Consciousness in artificial systems: Bridging global workspace and sensorimotor theory in in-silico models*. In V. C. Müller, A. R. Dewey, L. Dung, & G. Löhr (Eds.), *Philosophy of artificial intelligence: The state of the art* (Synthese Library). Berlin, Germany: Springer Nature.

Published

12/2024

Kuske, N., & Roehrbein, F. (2024). Habit-inspired methods for embodied intelligence. In *IOP Conference Series: Materials Science and Engineering* (Vol. 1321, No. 1, p. 012002). IOP Publishing. <https://doi.org/10.1088/1757-899X/1321/1/012002>

04/2024

Kuske, N., & Roelofs, L. (2024). If panpsychism is true, then what? Part 2: Existential implications. In M. Di Paola & C. Rosciglione (Eds.), *Panpsychism: History, Promises, Problems. Giornale di Metafisica*, 46(1), 107–126. ISBN: 978-88-372-4004-2

04/2024

Roelofs, L., & **Kuske, N.** (2024). If panpsychism is true, then what? Part 1: Ethical implications. In M. Di Paola & C. Rosciglione (Eds.), *Panpsychism: History, Promises, Problems. Giornale di Metafisica*, 46(1), 107–126. ISBN: 978-88-372-4004-2

10/2023

Kuske, N., Clay, V. (2023). Does Bodily Action Shape Spatial Representation? Evidence from Virtual Reality, Sensory Augmentation and Map Learning. *bioRxiv*, 2023-10. <https://doi.org/10.1101/2023.10.15.562402>

09/2022

Kuske, N., Ragni, M., Röhrbein, F., Vitay, J., & Hamker, F. (2022). Demands and potentials of different levels of neuro-cognitive models for human spatial cognition. In, E. Ferstl, L. Konieczny, & R. Stülpmagel (Eds.), *Proceedings of KogWiss2022, the 15th Biannual Conference of the German Society for Cognitive Science* (pp. 115-116). Albert-Ludwigs-Universität Freiburg. <https://doi.org/10.6094/UNIFR/229611>

12/2021

Krumm, D., **Kuske, N.**, Neubert, M., Buder, J., Hamker, F., & Odenwald, S. (2021). Determining push-off forces in speed skating imitation drills. *Sports Engineering*, 24(1), 1-10. <https://doi.org/10.1007/s12283-021-00362-1>

03/2021

König, S. U., Keshava, A., Clay, V., Rittershofer, K., **Kuske, N.**, & König, P. (2021). Embodied Spatial Knowledge Acquisition in Immersive Virtual Reality: Comparison to Map Exploration. *Frontiers in Virtual Reality*, 2, 625548. <https://doi.org/10.3389/frvir.2021.625548>

07/2019

König, S. U., Clay, V., Nolte, D., Duesberg, L., **Kuske, N.**, & König, P. (2019). Learning of spatial properties of a large-scale virtual city with an interactive map. *Frontiers in human neuroscience*, 13, 240. <https://doi.org/10.3389/fnhum.2019.00240>

Talks

09/12/2024

“What Rocks can Teach Us about Agency: Exploring Thing-Hood Through the Free Energy Principle,” *Theoretical Neurobiology Group Meeting*. The Active Inference Institute (2024)

03/10/2024

“Bridging Consciousness and AI: Evaluating the Global Latent Workspace in Embodied Agents,” *Models of Consciousness 5*. University of Bamberg. Germany (2024)

04/07/2024

“Neuroscientific Theories of Consciousness and AI: Unveiling Sensorimotor Representations in Global Latent Workspaces,” *27th Annual Meeting of the Association of Scientific Studies of Consciousness*. University of Tokyo. Japan (2024)

15/12/2023

“Consciousness in Artificial Systems: Bridging Sensorimotor Theory and Global Workspace in In-Silico Models,” *5th Biannual Conference of the Society for Philosophy of Artificial Intelligence*. University of Erlangen. Germany (2023)

06/09/2022

“Demands and potentials of different levels of neuro-cognitive models for human spatial cognition,” *15th Biannual Conference of the German Society for Cognitive Science*. University of Freiburg. Germany (2022)

24/1/2020

“Embodiment of both spatial concept and spatial exploration affects allocentric spatial representations acquired in a large virtual-reality city,” *1st GK Doctoral Symposium on Cognitive Science*. Eberhard Karls University of Tübingen. Germany (2020)

26/09/2019

“Action Makes Sense,” *RTG Summer School 2019: Recent Developments in Situated Cognition – Empirical and Philosophical Investigations*. Ruhr University Bochum. Germany (2019)

Supervision and Teaching

Students

10/2017 - 09/2018

Raul Sulaimanov, Master in Cognitive Science

Institute of Cognitive Science, Osnabrück University, Germany

04/2017 - 03/2018

Laura Duesberg, Bachelor in Cognitive Science

Institute of Cognitive Science, Osnabrück University, Germany

Courses

10/2019 - 03/2020

Advanced Seminar on Spatial Cognition

Institute of Cognitive Science, Osnabrück University, Germany

10/2014 - 03/2015

Physics laboratory course

Ludwig Maximilian University of Munich, Germany

04/2013 - 09/2013

Experimental physics tutor

Ludwig Maximilian University of Munich, Germany

Technical Skills

Programming

Matlab, Python, C(++), Cython, R, C#

Methods of Machine Learning

Linear (mixed) models, neurocomputational models (rate, spike), cognitive models (ACT-R), deep neural networks (supervised, semi-supervised, reinforcement)

Methods of Experiment

Virtual reality, motiontracking (eye, body), neuroimaging (EEG)

Additional Qualification

17/04/2023

13 - 14/03/2023

13 - 14/07/2022

28 - 29/05/2020

31/01/2020

25/02/2019

30/10/2018

15/02/2018

Engagement

27/02/2025

22 – 25/06/2023

02/2018 – 02/2020

Workshops

Science Communication

Practice of personnel management

Creativity strategies for research

How do I submit an application for third-party funding

The language of leaders

Social Media – Building a profile on the net

Self-presentation and networking for scientists

Sexism in Science

Session Chair

Online panel on the ethical implications of panpsychism, at the 2025 Central Division Meeting of the American Philosophical Association (APA)

Event Assistance

26th conference of the Association for the Scientific Study of Consciousness (ASSC), New York University, USA

Scientific Advisory Board

Center for Doctoral Students and Postdocs (ZePrOs), Osnabrück University, Germany