



Nicolas Kuske

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Employment and Education

04/2024 – today

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

Grant Activity - neither PI or Co-PI

11/2023

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

10/2022

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

6/2017 – 7/2020

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., & Röhrbein, F. (in press). Habit-inspired methods for embodied intelligence. *IOP Conference Series: Materials Science and Engineering*. IOP Publishing.

Kuske, N. & Roelofs, L. (in press). If Panpsychism Is True, Then What? Part 2: Existential Implications. In M. Di Paola & C. Rosciglione (Eds.), *Giornale di Metafisica*, Special edition: Panpsychism: History, Promises, Problems.

Roelofs, L., & **Kuske, N.** (in press). If Panpsychism Is True, Then What? Part 1: Ethical Implications. In M. Di Paola & C. Rosciglione (Eds.), *Giornale di Metafisica*, Special edition: Panpsychism: History, Promises, Problems.

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

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

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,” <i>RTG Summer School 2019: Recent Developments in Situated Cognition – Empirical and Philosophical Investigations</i> . Ruhr University Bochum. Germany (2019)
Supervision and Teaching	
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
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

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

Engagement

22 – 25/06/2023

02/2018 – 02/2020

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

