



Nicolas Kuske

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

Employment and Education

10/2025 – today

Postdoctoral Research Fellow

Mathematics and Applied Mathematics Department, Neuro-
science Institute, University of Cape Town, South Africa

03/2025 – 08/2025

Principal Investigator

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

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

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

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.

10/2025 – 09/2026

Conscium Fellowship Award

Postdoctoral research fellowship on affective consciousness and Active Inference. Awarded ZAR 540,000 through the Conscium research donation to the University of Cape Town.

Publications

In Press

Grimbly, S. J., **Kuske, N.**, Smith, R., Boonstra, E., Bassett, B., Hodson, R., Mahadewa, K., Rosman, B., van Hooff, C., Solms, M., & Shock, J. (in press). Two routes to interoceptive prioritisation: Dissociating likelihood precision and preference dynamics in active inference. In *Active Inference: Proceedings of the 7th International Workshop on Active Inference (IWA I 2026)*. Springer Nature.

Grimbly, S. J., **Kuske, N.**, Smith, R., Boonstra, E., Bassett, B., Hodson, R., Mahadewa, K., Rosman, B., van Hooff, C., Solms, M., & Shock, J. (in press). Interoceptive attention as dynamic homeostatic prioritization in a foraging agent. In *From Animals to Animats 18: Proceedings of the 18th International Conference on Simulation of Adaptive Behavior (SAB 2026)*. Springer Nature. Preprint: <https://doi.org/10.48550/arXiv.2608.04232>

Published

08/2026

Solms, M., Grimbly, S. J., Bassett, B., Boonstra, E., Hodson, R., **Kuske, N.**, Mahadewa, K., Rosman, B., van Hooff, C., & Shock, J. (2026). Inferring affective consciousness in an artificial agent: A case study. *Journal of Consciousness Studies*, 33(7–8), 14–34. <https://doi.org/10.53765/20512201.33.7.014>

01/2026

Kuske, N., & VanRullen, R. (2026). *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. https://doi.org/10.1007/978-3-032-10073-3_19

08/2025

Kuske, N., & VanRullen, R. (2025). Sensorimotor affordances in a global latent workspace. In *Proceedings of the 8th Annual Conference on Cognitive Computational Neuroscience (CCN 2025)*. OpenReview.

07/2025

Kuske, N. (2025). Panpsychism and panagentialism: Consciousness, agency, and the divine in a pantheistic framework. *PhilArchive*. <https://philarchive.org/rec/KUSPAP-2>

12/2024	Kuske, N., & Roehrbein, F. (2024). Habit-inspired methods for embodied intelligence. In <i>IOP Conference Series: Materials Science and Engineering</i> (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.), <i>Panpsychism: History, Promises, Problems. Giornale di Metafisica</i> , 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.), <i>Panpsychism: History, Promises, Problems. Giornale di Metafisica</i> , 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. <i>bioRxiv</i> , 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.), <i>Proceedings of KogWiss2022, the 15th Biannual Conference of the German Society for Cognitive Science</i> (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. <i>Sports Engineering</i> , 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. <i>Frontiers in Virtual Reality</i> , 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. <i>Frontiers in human neuroscience</i> , 13, 240. https://doi.org/10.3389/fnhum.2019.00240

Talks

06/04/2026	"On the relationship of embodiment, learning, intelligence, and consciousness," invited talk, Learning in Humans and Machines Seminar. University of Helsinki. Finland (2026).
08/15/2025	"Sensorimotor affordances in a global latent workspace," <i>8th Annual Conference on Cognitive Computational Neuroscience (CCN 2025)</i> . University of Amsterdam. Netherlands (2025)
03/10/2025	"Gatekeepers or Constituents of the Neural Correlates of Consciousness? Exploring the Role of the Basal Ganglia in Thalamocortical Loops," <i>28th Annual Meeting of the Association of Scientific Studies of Consciousness</i> . Cultural Conference Center of Heraklion. Crete (2025)
09/12/2024	"What Rocks can Teach Us about Agency: Exploring Thing-Hood Through the Free Energy Principle," <i>Theoretical Neurobiology Group Meeting</i> . The Active Inference Institute (2024)
03/10/2024	"Bridging Consciousness and AI: Evaluating the Global Latent Workspace in Embodied Agents," <i>Models of Consciousness 5</i> . University of Bamberg. Germany (2024)
04/07/2024	"Neuroscientific Theories of Consciousness and AI: Unveiling Sensorimotor Representations in Global Latent Workspaces," <i>27th Annual Meeting of the Association of Scientific Studies of Consciousness</i> . University of Tokyo. Japan (2024)
15/12/2023	"Consciousness in Artificial Systems: Bridging Sensorimotor Theory and Global Workspace in In-Silico Models," <i>5th Biannual Conference of the Society for Philosophy of Artificial Intelligence</i> . University of Erlangen. Germany (2023)
06/09/2022	"Demands and potentials of different levels of neuro-cognitive models for human spatial cognition," <i>15th Biannual Conference of the German Society for Cognitive Science</i> . 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," <i>1st GK Doctoral Symposium on Cognitive Science</i> . 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

Supervision

2/2026 - today

St John Grimbly, towards PhD in Computer Science

Mathematics Department, University of Cape Town, South Africa

10/2025 - today

Nora Altweg, towards Bachelor in Mathematics

Mathematics Department, University of Cape Town, South Africa

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

Teaching

02/2026 - today

Reading Group on Active Inference

Mathematics Department, University of Cape Town, South Africa

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

1/07/2026 – today

08/08/2025

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

Community of the As1 Next Generation Advisory Council

Burroughs Wellcome Fund's As1 initiative aims to develop tools for consciousness science and identify emerging priorities across disciplines.

Media Coverage/Interview

Featured interview discussing my research on panpsychism in Popular Mechanics. <https://www.popularmechanics.com/science/a65635986/is-the-universe-god-pantheism/>

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