

Kristin Witte

Ph.D. Student at Helmholtz Munich

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Education

PhD Psychology

Ludwig-Maximilian-Universität · Helmholtz Munich

Munich, Germany

2022 - present

Advisor: Dr. Eric Schulz

Computational models of Anxiety and Depression

MSc Neural and Behavioural Science

University of Tuebingen · Graduate Training Center for Neuroscience

Tuebingen, Germany

2020 - 2022

GPA: 1.4 (very good)

Thesis: Exploration, Anxiety and Depression (supervisors: Quentin Huys, Eric Schulz)

BSc Psychology

Radboud University

Nijmegen, the Netherlands

2016 - 2019

GPA: 8.2/10 (cum laude)

Thesis: Neural and Behavioural Correlates of Ambiguity in Intertemporal and Risky Choice (supervisors: Bernd Figner, Karin Roelofs)

Research Experience

PhD Thesis

Max Planck Institute for Biological Cybernetics · Helmholtz Munich

Munich, Germany

Nov. 2022 - Present

Helmholtz Institute for Human-Centered AI · Advisor: Dr. Eric Schulz

Reliability and validity of computational models of the Exploration-Exploitation trade-off [PAPER]

- Tested the reliability and convergent and external validity of the model parameters from 3 bandit tasks
- Applied Latent factor modelling to improve reliability and validity

Decision-making in anxiety and depression [PAPER]

- Used Gaussian Process Regression to approximate learning behaviour in a reinforcement learning task
- Applied Hierarchical Bayesian model fitting

Large Language Models [PAPER 1][PAPER 2]

- Evaluated biases and anxiety-like responding in LLMs
- Fine-tuned LLMs using PEFT

Master Thesis

University College London

London, UK

Feb. - Oct. 2022

Applied Computational Psychiatry Lab · Advisors: Prof. Dr. Quentin Huys, Dr. Eric Schulz

Topic: Exploration behaviour, anxiety and depression

- Designed intervention study to test causal effects of worrying on exploration behaviour

Graduate Research Assistant

Max Planck Institute for Biological Cybernetics

Tuebingen, Germany

Oct. 2020 - Oct. 2022

Computational Principles of Intelligence lab · Advisor: Dr. Eric Schulz

Topic: Using Gaussian Processes to model Exploration-Exploitation in Depression and Anxiety

- Programmed online experiment in JS HTML
- Analysed resulting data using Hierarchical Bayesian computational modelling

Rotation Student

University Hospital Tuebingen · Clinic for Psychiatry and Psychotherapy

Tuebingen, Germany

Nov. 2021 - Feb. 2022

Non-invasive Brain Stimulation Group · Advisor: Prof. Dr. Christian Plewnia

Topic: The Neural Underpinnings of tDCS-enhanced Cognitive Control Training in Major Depressive Disorder

- Analysed fNIRS data of patients undergoing tDCS and Cognitive Control Training
- Shadowed psychiatrists during clinical interviews and brain stimulation

Rotation Student

University Hospital Tuebingen · Clinic for Psychiatry and Psychotherapy
Kaufmann Lab · Advisor: Prof. Dr. Tobias Kaufmann

Topic: Predicting Autistic Traits from Brain Sex

- Applied XGBoost to predict sex from neuroanatomy and identify the role of Brain Sex in Autism

Tuebingen, Germany

Sep. - Nov.2021

Student Research Assistant

Max Planck Institute for Human Development

Environmental Neuroscience Lab · Advisor: Prof. Dr. Simone Kühn

Topic: Influence of environmental factors on cognitive and neural functioning

- Collected behavioural and fMRI data
- Conducted extensive literature research on a wide range of topics

Berlin, Germany

Oct.2019 - Sept.2020

Summer Intern

Massachusetts Institute of Technology

Affective Brain Lab · Advisor: Prof. Dr. Tali Sharot

Topic: Affective factors in information processing [PAPER]

- Collected and analysed behavioural data
- Designed an experiment to disentangle different types of information

Cambridge, MA

Jul. - Aug. 2019

Honours Bachelor Thesis

Donders Institute for Brain, Cognition and Behaviour

Experimental Psychopathology and Affective Neuroscience Lab · Advisors: Prof. Dr. Karin

Roelofs, Prof. Dr. Bernd Figner

Topic: The Neural Underpinnings of Economic Decision Making under Risk and Uncertainty

- Collected and analysed behavioural and fMRI data
- Conducted systematic literature review

Nijmegen, NL

Sep.2018 - Aug.2019

Undergraduate Research Intern

Donders Institute for Brain, Cognition and Behaviour

L2 Language Lab · Advisors: Prof. Dr. Kristin Lemhöfer, Xiaochen Zheng

Topic: Interference errors between first and second language

- Designed experiment to test language intrusions in Dutch native speakers
- Collected and analysed speech data

Nijmegen, NL

Sep.2017 - Aug.2018

Publications

*equal contribution

PUBLISHED

Globig, L. K., **Witte, K.**, Feng, G., & Sharot, T. (2021). Under stress weaker evidence is required to reach undesirable conclusions. *Journal of Neuroscience*, 41, 6502–6510. <https://doi.org/10.1523/JNEUROSCI.3194-20.2021>

Ben-Zion, Z., **Witte, K.***, Jagadish, A. K.*, Duek, O., Harpaz-Rotem, I., Khorsandian, M.-C., Burrer, A., Seifritz, E., Homan, P., Schulz, E., & Spiller, T. R. (2025). Assessing and alleviating state anxiety in large language models. *Npj Digital Medicine*, 8(1), 132. <https://doi.org/10.1038/s41746-025-01512-6>

IN REVIEW

Witte, K., Wise, T., Huys, Q.J.M.* & Schulz, E.* (under review). Exploring the Unexplored: Worry as a Catalyst for Exploratory Behavior in Anxiety and Depression. <https://osf.io/td8xh>

Witte, K.*, Thalmann, M* & Schulz, E. (under review). How should we measure exploration?.<https://osf.io/tzuey>

Coda-Forno, J.*, **Witte, K.***, Jagadish, A.K., Binz, M., Akata, Z. & Schulz, E. (under review). Inducing anxiety in large language models can induce bias. <https://arxiv.org/abs/2304.11111>

Presentations

INVITED TALKS

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| 2025 | Ludwig Maximilians University , Joint TUM LMU lab meeting (Pachur lab and Donkin lab) | Germany |
| 2023 | Oxford University , Lab meeting of Browning Lab | UK |
| 2023 | University College London & MIT (virtual) , Lab meeting of Affective Brain Lab | online |
| 2022 | Harvard University , Lab meeting of Phelps Lab | online |
| 2022 | University College London , Joint lab meeting of Huys lab and Dolan lab | UK |

CONTRIBUTED PRESENTATIONS

Witte, K., Thalmann, M., Schulz, E. (2024). Exploring the Reliability and Validity of Exploration Tasks. Poster: Summer Meeting of the British Association for Psychopharmacology.

Witte, K., Wise, T., Huys, Q.J.M.* & Schulz, E.* (2023). People that worry more explore more. Poster spotlight talk: Computational Psychiatry Conference 2023.

Witte, K., Wise, T., Huys, Q.J.M.* & Schulz, E.* (2023). People who worry more explore more. Poster: Conference on Cognitive Computational Neuroscience (CCN 2023), Oxford, UK.

Witte, K., Wise, T., Huys, Q.J.M.* & Schulz, E.* (2023). Exploration in safe and risky environments and its relation to depressive and anxious traits and states. Poster: Interdisciplinary Conference on the Study of Mental Health, Heidelberg, Germany.

Witte, K., Wise, T., Huys, Q.J.M.* & Schulz, E.* (2023). Exploration in safe and risky environments and its relation to depressive and anxious traits and states. Poster: Psychologie und Gehirn 2023, Tuebingen, Germany.

Witte, K., Wise, T., Huys, Q.J.M.* & Schulz, E.* (2022). The two faces of anxiety in exploration: Taking risks or playing it safe. Poster: 5th Multidisciplinary Conference on Reinforcement Learning and Decision Making (RLDM), Providence, RI, USA.

Zheng, X., Roelofs, A., **Witte, K.**, & Lemhöfer, K. (2018). Involuntary switching and language control: In search for a new paradigm, or two. Poster: IMPRS Conference 2018, Nijmegen, Netherlands.

Skills

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|------------------------------|---|
| Research Skills | Research Design, Hypothesis Generation, Data Analysis, Scientific Writing |
| Programming Languages | Python, R, MATLAB, JavaScript HTML |
| Languages | English (C1), German (native), French (B2), Dutch (A1), Spanish (A1) |

Supervision

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| 2023-2024 Co-supervisor (Master Thesis) , Alica Guzmán, Graduate Training Center for Neuroscience, University of Tuebingen | Germany |
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Outreach

2021-2024 **Mindful Science Tuebingen**, Event organisor