

# Kristin Witte

Ph.D. Student at Helmholtz Munich

✉ kristin.witte@helmholtz-munich.de | 🏠 kristinwitte.github.io | 📺 KristinWitte | in LinkedIn | 🐦 WitteKristin | 🎓 Scholar

## 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

Thesis: Exploration, Anxiety and Depression (advisors: 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 (advisors: 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

Binz, M.,..., **Witte, K.**, ... Schulz, E. (2025). A foundation model to predict and capture human cognition. *Nature*.

**Witte, K.\***, Thalmann, M.\*, & Schulz, E. (2025). Model-based exploration is measurable across tasks but not linked to personality and psychiatric assessments. *Scientific Reports*, 15(1), 27479.

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.

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.

### 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.

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.

## Presentations

---

### INVITED TALKS

2026	<b>Ludwig Maximilians University</b> , Lecture on AI applications in Medicine	online
2026	<b>LMU Psychiatric clinic</b> , Forschungsseminar (Research Training Seminar for Psychiatrists)	Germany
2025	<b>Technical University of Munich</b> , Lab meeting of Pachur lab	Germany
2025	<b>Ludwig Maximilians University</b> , Joint TUM LMU lab meeting (Pachur lab and Donkin lab)	Germany
2023	<b>Oxford University</b> , Lab meeting of Browning Lab	UK
2023	<b>University College London &amp; MIT (virtual)</b> , Lab meeting of Affective Brain Lab	online
2022	<b>Harvard University</b> , Lab meeting of Phelps Lab	online
2022	<b>University College London</b> , Joint lab meeting of Huys lab and Dolan lab	UK

### CONTRIBUTED PRESENTATIONS

**Witte, K.**, Rmus, M., Akata, E., Schulz, E. (2025). Using Llama-3 to Refine Psychotherapy in Silico. Poster: 8th Annual Conference on Cognitive Computational Neuroscience, Amsterdam, NL.

**Witte, K.**, Rmus, M., Akata, E., Schulz, E. (2025). Using Llama for in-vitro optimisation of cognitive behavioural therapy. Poster: Computational Psychiatry Conference, Tuebingen, Germany.

**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, Dublin, Ireland.

**Witte, K.**, Wise, T., Huys, Q.J.M.\* & Schulz, E.\* (2023). People who worry more explore more. Poster: 6th Annual Conference on Cognitive Computational Neuroscience, 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

---

<b>Research Skills</b>	Research Design, Hypothesis Generation, Data Analysis, Scientific Writing
<b>Programming Languages</b>	Python, R, MATLAB, JavaScript HTML
<b>Languages</b>	English (C2), German (native), French (B2), Dutch (A1), Spanish (A1)

## Supervision

---

2023-2024 <b>Co-supervisor (Master Thesis)</b> , Alica Guzmán, Graduate Training Center for Neuroscience, University of Tuebingen	Germany
---	---------

## Outreach

---

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