

# Nadine Spsychala

## *Curriculum Vitae*

### Education

- since 2020 **PhD in Informatics**  
University of Sussex, Brighton
- 2016 – 2019 **Master of Arts in Philosophy**  
Carl-von-Ossietzky University, Oldenburg
- 2013 – 2016 **Master of Science in Neurocognitive Psychology**  
Carl-von-Ossietzky University, Oldenburg
- 2009 – 2012 **Bachelor of Science in Psychology**  
University of Hamburg, Hamburg

### Doctoral Thesis

- Title *Neural measures of complexity and emergence related to conscious processing*  
(preliminary)
- Supervisors Dr. Adam Barrett & Professor Anil Seth
- Description The aim of my PhD project is to apply mathematical models based on information theory to neural data and use machine learning techniques to investigate how measures of complexity and emergence may inform an account of differences in conscious states.

### Master Thesis

- Title *The dynamics of integrated information in variational inference: a simulation study*
- Supervisor Professor Dirk Ostwald
- Description In this thesis, I investigated the dynamics of integrated information in variational inference using an integrated information measure for time-series models (Barrett & Seth, 2011) and black-box variational inference (Ranganath, Gerrish, & Blei, 2016).

### Master Thesis

- Title *Towards free robotic hand control with EEG motor imagery*
- Supervisors Professor Stefan Debener & Dr. Niclas Braun
- Description In this thesis, I investigated robotic hand control via motor imagery and experiences of embodiment in an EEG brain-computer interface.

## Bachelor Thesis

Title	<i>Non-random samples in psychological research</i>
Supervisors	Professor Martin Spieß & Dr. Nils Skotara
Description	In this thesis, I investigated how generalizable findings are in experimental psychology taking into account different sampling methods.

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## Experience

### Work

- 07/2020 – 09/2020 **Psychologist**, BAHIA CLEARINGSTELLE GGMBH, Bremen. Psychologist for unaccompanied refugee minors.
- 01/2018 – 02/2019 **Data analyst**, DEPARTMENT OF HUMAN MEDICINE, CARL VON OSSIETZKY UNIVERSITY, Oldenburg. Data analyst in medical education research.
- 04/2016 – 07/2016 **Teaching assistant**, DEPARTMENT OF PHILOSOPHY, CARL VON OSSIETZKY UNIVERSITY, Oldenburg. Teaching assistant for Practical Philosophy in philosophy class (Prof. Frank Kuhne).
- 10/2015 – 02/2016 **Teaching assistant**, NEUROPSYCHOLOGY LAB, CARL VON OSSIETZKY UNIVERSITY, Oldenburg. Teaching assistant for EEG methods in psychology class (Prof. Stefan Debener).
- 04/2015 – 07/2016 **Teaching assistant**, LANGUAGE CENTRE, CARL VON OSSIETZKY UNIVERSITY, Oldenburg. Teaching assistant in German for refugees.
- 11/2011 – 07/2012 **Research assistant**, BIOLOGICAL PSYCHOLOGY & NEUROPSYCHOLOGY, UNIVERSITY OF HAMBURG, Hamburg. Research assistant for conducting EEG and behavioral experiments with subjects wearing cochlea implants (Prof. Brigitte Röder).
- 02/2011 – 08/2011 **Teaching assistant in the seminar *Ideas of Man***, INSTITUTE OF PSYCHOLOGY, Hamburg. Teaching assistant for non-mainstream topics in psychology.

### Internships and Further Education

- 03/2019 **Spring school**, *International Interdisciplinary Computational Cognitive Science Spring School* (IICSSS), BERNSTEIN CENTER FREIBURG, Freiburg.
- 01/2018 **Conference**, *Predictive Processing: Reconstructing the Mind?* CENTRE FOR RESEARCH IN THE ARTS, SOCIAL SCIENCES AND HUMANITIES (CRASSH), UNIVERSITY OF CAMBRIDGE, Cambridge.
- 08/2017 **Summer school**, *The Free Energy Principle – a unifying brain theory?* GERMAN NATIONAL ACADEMIC FOUNDATION, Rot an der Rot, Bavaria (Prof. Felix Blankenburg & Prof. Dirk Ostwald).
- 06/2017 **Conference**, *Causation, Explanation, Conditionals*, GRADUATE SCHOOL OF SYSTEMIC NEUROSCIENCES, BERNSTEIN CENTER FOR COMPUTATIONAL NEUROSCIENCE & MUNICH CENTER FOR MATHEMATICAL PHILOSOPHY, Munich.
- 08/2015 **Summer school**, *Am I too complex? System-theoretical approaches in psychological research and practice*, GERMAN NATIONAL ACADEMIC FOUNDATION, Neubuern, Bavaria (Prof. Stefan Scherbaum).
- 10/2014 – 02/2015 **Semester abroad**, DEPARTMENT OF COGNITIVE SCIENCE, JAGIELLONIAN UNIVERSITY, Cracow.
- 10/2014 – 01/2015 **Internship**, CONSCIOUSNESS LABORATORY, INSTITUTE OF PSYCHOLOGY, JAGIELLONIAN UNIVERSITY, Cracow. In this research internship, I investigated the relationship between pain and the sense of ownership using electrical stimuli and the rubber hand illusion (Prof. Michał Wierzchoń).

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- 06/2013 – **Internship**, EQUALITY CALIFORNIA, Los Angeles. Internship in human rights work, working on the public education projects *The Breakthrough Conversation & Health Happens With Equality*. Initiating a project on biphobia.
- 10/2012 – **Internship**, CHILDREN FOR TOMORROW, UNIVERSITY MEDICAL CENTER HAMBURG-EPPENDORF, Hamburg. Internship in pedagogical psychology. Supporting and implementing psychosocial programs for refugee children and adolescents.
- 07/2011 – **Internship**, ASCLEPIOS CLINIC HARBURG. Internship in the psychiatric and psychotherapeutic ward with focus on personality disorders and psychotraumatology. Experience as a co-therapist.

#### Attended Hackathons

- 07/2020 **OHBM Hackathon**, Tutorial for cross decomposition methods in Python (Leonie Borne & Hao-Ting Wang).
- 11/2019 **Brainhack Global**, Sonifying EEG, CHILD MIND INSTITUTE, New York.
- 03/2019 **Brainhack**, Deep Frankenstein: dissecting and sewing artificial neural networks, UNIVERSITY OF WARSAW, Warsaw (Piotr Migdał & Katarzyna Kańska).

#### Other Extracurricular Activities/Voluntary Work

- 08/2019 – **Volunteer**, GROWNYC, New York. Environmental sustainability volunteer in New York's Zero Waste and Greenmarket programs.
- 03/2016 **Language stay**, TURKISH EYE LANGUAGE CENTRE, Izmir. Intense Turkish language course.
- 03/2015 **Seminar**, GERMAN NATIONAL ACADEMIC FOUNDATION, *The post-soviet space in the 21st century – political and economic challenges between Russia and the European Union*, Tallinn.
- 04/2014 – **Seminar**, CARL VON OSSIETZKY UNIVERSITY, *Recognizing, Knowing, Justifying*, Oldenburg.
- 08/2014 **Seminar**, GERMAN NATIONAL ACADEMIC FOUNDATION, *Україна? – Ukraine! Questions concerning the political and economic future of the Ukraine and the return to old block thinking*, Kiev.
- 12/2012 **Seminar**, UNIVERSITY OF HAMBURG, *Mental Health of Refugee Children and Adolescents Originating from War and Conflict Areas*, Hamburg.
- 08/2012 **Language stay**, LIDEN & DENZ LANGUAGE CENTRE, St. Petersburg. Intense Russian language course.

#### Computer & Technical Skills

Programming Languages	R, MATLAB/GNU Octave, PYTHON
Machine Learning	Deep Learning, linear and nonlinear regression and classification, Natural Language Processing, unsupervised learning, approximate variational inference
Statistics	Bayesian statistics, classical significance testing
Software	NumPy, SciPy, Pandas, Scikit-Learn, Pytorch, Keras, Stan
Statistics & Science Blog	<a href="https://nadinespy.github.io/">https://nadinespy.github.io/</a>

#### Language Skills

German Mother tongue

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Polish	Mother tongue
English	Fluent
French	Advanced
Spanish	Intermediate
Russian	Elementary
Turkish	Beginner
Arabic	Beginner

## Publications/Scientific Contributions

- Article Fincke, F., Prediger, S., Schick, K., Fürstenberg, S., Spychala, N., Berberat, P. O., Harendza, S., Kadmon, M. (2020). Entrustable professional activities and facets of competence in a workplace-based assessment for final year undergraduate medical students. *Medical Teacher*.
- Article Spychala, N., Debener, S., Bongartz, E., Müller, H. H. O., Philipsen, A., Thorne, J., & Braun, N. (2019). Exploring Self-Paced Embodiable Neurofeedback for Post-Stroke Motor Rehabilitation. *Frontiers in Human Neuroscience*.
- Article Braun, N., Debener, S., Spychala, N., Bongartz, E., Sorös, P., Müller, H. H. O., & Philipsen, A. (2018). The senses of agency and ownership: a review. *Frontiers in Psychology*.
- Article Siedlecka, M., Spychala, N., Łukowska, M., Wiercioch, K., & Wierzchoń, M. (2017). Rubber hand illusion increases pain caused by electric stimuli. *The Journal of Pain*.
- Poster *Towards embodied feedback for post-stroke rehabilitation*, presented at the 6TH MIND, BRAIN & BODY SYMPOSIUM, MIND & BRAIN SCHOOL BERLIN, 15th March 2018, Berlin.
- Poster *Towards free robotic hand control with EEG motor imagery*, presented at the 4TH MIND, BRAIN & BODY SYMPOSIUM, MIND & BRAIN SCHOOL BERLIN, 16th March 2016, Berlin.

## Scholarships

- since 2020 Leverhulme Doctoral Scholarship at the University of Sussex, UK
- 2010 – 2018 Scholarship holder of the German National Academic Foundation
- 10/2014 – 02/2015 Erasmus+ scholarship holder