ANNA VILLAUME STUCKERT

(+44) 07918399802 ◇ St Andrews, Scotland
anna.stuckert97@gmail.com ◇ LinkedIn ◇ GitHub ◇ Website

EDUCATION

Doctor of Philosophy student, Neuroscience, University of St Andrews 2023 - Expected 2027
I am pursuing a PhD in Neuroscience, where I am studying Frontotemporal Dementia (FTD) in a transgenic mouse model of the disease. The project investigates emotion expression changes as a symptom of the disease and seeks to classify emotions in mice based on facial expressions when navigating a VR environment and compare this ability in sick and healthy mice. This is carried out with the aim to identify early behavioral markers disease and identify the neural correlates underlying the early stages of the disease using calcium imaging and optogenetics.

Master of Science, Neuroscience, University of Copenhagen 2021 - 2023
MSc in neuroscience teaching molecular and cellular neurobiology, systems neuroscience, higher brain functions, and methodology within neuroscience including genetics, bioinformatics, neuroimaging, animal models and epidemiology. I have taken electives in computational neuroscience and genetic and viral technologies in animal models. I completed my master's thesis in Allodi lab, working with systemic administration of gene therapy using an AAV-PHP.eB viral vector in a mouse model of ALS, with the goal of rescuing the motor phenotype and improving survival by stabilizing connections from inhibitory interneurons to motor neurons via hEsyt1 overexpression.
GPA: 11.81

Bachelor of Science, Cognitive Science, Aarhus University 2018 - 2021
BSc focusing on cognition and neuroscience, as well as statistics, data science and programming for conducting our own experiments and simulation studies. In my thesis I investigated the interaction between interoception and decision-making. I have worked with eye-tracking, EEG, and fMRI, analysis and visualization of data, as well as manuscript writing. I took elective courses in memory, stress, biology of behavior, consumer behavior, and psychiatric disorders for one semester at Western University, Canada.
GPA: 11.37

SKILLS

Digital Skills	Python/DeepLabCut (gait analysis and software development), Python/PsychoPy (coding experiments), MATLAB/SPM12/CONN (fMRI and EEG analysis), Eye- and mouse tracking, R/Rstudio (data analysis, visualization), Python/PyTorch (Machine Learning), Frequentist and Bayesian statistics, Meta-analysis, Godot/Blender (VR videogame and stimuli creation), Bonsai (stimulus and VR workflow setup), LaTeX, MyST
Technical Skills	Conducting Behavioral Experiments, Transgenic Mouse Colony Management, Immunohistochemistry, Confocal Microscopy, Genotyping, qPCR, Designing and Building Behavioral Experiment Setups

TEACHING AND OUTREACH

Postgraduate Demonstrator Oct 2023 - Present
School of Psychology and Neuroscience *University of St Andrews*

- I am demonstrating and/or marking on the following courses:
  - PN2202 Neuroscience, demonstrating on lab practicals covering neuroanatomy and neurophysiology, and marking exams and lab reports.
  - PN3313 Neuroscience, demonstrating and marking lab exercises on axonal conductance in earthworms
  - PN3037 Perception, marking exams
  - PN4108 Neuroscience, organization of and demonstration on computational lab sessions on behavioral analysis of animal models in neuroscience using DeepLabCut

Bonsai Course Organiser Jan 2024 - Mar 2024
School of Psychology and Neuroscience *University of St Andrews*

- Organised and TA'ed a course on the software Bonsai.

Core Team Member Jan 2024 - Mar 2024
Synapse Life Science Connect *Copenhagen*

- As a core team member of Synapse, I participated in the planning and execution of our activities such as workshops and events, including the Synapse Life Science Career Fair hosting around 500 students, and Clinical Winter School. Our aim is to spread insight into broadly spanning scientific areas, bridge the gap between life science academia and industry, and inspire, develop and connect students within the life science field.

Mentor Sep 2020 - May 2021
Special Educational Support Centre *Aarhus University*

- Worked as a mentor in the BSc Cognitive Science program, helping students with course material, with emphasis on assisting them in learning coding and statistics.

RESEARCH EXPERIENCE

DeepLabCut AI Resident Jul 2024 - Aug 2024
Mathis Labs *École Polytechnique Fédérale de Lausanne*

- I was part of the 2024 DeepLabCut AI Residency group in the Mathis Labs (founders of DeepLabCut). The residency furthered my knowledge of and experience in developing deep learning methods aimed at animal behavior tracking and developing foundation models for behavior tracking, as well as open source software development, including documentation development and GitHub workflows, both for DLC and scikit-learn. The program offered talks and workshops with many inspiring speakers from Jupyter, scikit-learn, HuggingFace and previous DLC AI residents.

Laboratory Assistant and MSc Thesis Student Feb 2022 - Aug 2023
Allodi Lab *University Of Copenhagen, Department of Neuroscience*

- Worked on a project investigating gene therapy in SOD1 ALS mouse models, with tasks including developing machine-learning based models of gait analysis, behavioral assessment, maintenance of transgenic mouse colonies, viral delivery (intravenous and intraspinal injections), tissue collection (perfusion and fresh-frozen collection), confocal microscopy, cryostat sectioning, biochemical assays including immunohistochemistry, genotyping, qPCR, as well as quantification of spinal cord motor neurons and their synaptic connections.

Research Assistant May 2020 – Jul 2021
Department of Clinical Medicine And Department Of Nuclear Medicine And PET-Centre *Aarhus University*

- Assisting a PhD project investigating biomarkers of and cognitive decline in Alzheimer's disease, with my primary task being app-based cognitive testing of preclinical AD patients with ApoE4.

Research Assistant May 2020 - Jan 2021
Center For Functionally Integrative Neuroscience, Embodied Computation Group *Aarhus University*

- Research Assistant at a large-scale neuroimaging study investigating interoception, metacognition, learning, decision-making, and psychometrics. My tasks involved piloting, experiment development, data collection of ECG, HRV, fMRI, and behavioral data, data analysis, and manuscript writing. I also assisted the lab with data analysis, visualization and reporting of a survey study of COVID-19 and mental health.

Research Assistant Oct 2019 – Jul 2021
Department of Clinical Medicine, Danish Pain Research Center *Aarhus University,*

- Assisting with data collection and experiment optimization on a study investigating spinal integration of thermal pain, a study on lidocaine and pain perception, and a study on olfaction and pain perception.

Research Assistant May 2019 – Jul 2021
Interactive Minds Center, Crafa Lab *Aarhus University*

- Assisting on a study on neuroscience of social interaction and culture, helping with coding and translating the experiment, participant recruitment and data collection. Moreover, assisting with data analysis of an eye-tracking experiment investigating gaze patterns in ASD children across cultures.

PUBLICATIONS

Stabilization of V1 interneuron-motor neuron connectivity ameliorates motor phenotype in a mouse model of ALS 2024, Mora, S., Stuckert, A., von Huth Friis, R., Pietersz, K., Noes-Holt, G., Montañana-Rosell, R., ... and Allodi, I. Nature Communications, 15(1), 4867.

The heart rate discrimination task: A psychophysical method to estimate the accuracy and precision of interoceptive beliefs 2022, Legrand, N., Nikolova, N., Correa, C., Brændholt, M., Stuckert, A., Kildahl, N., ... and Allen, M. Biological Psychology, 168, 108239.

Disentangling the spinal mechanisms of illusory heat and burning sensations in the thermal grill illusion 2024, Mitchell, A. G., Ehmsen, J. F., Christensen, D. E., Stuckert, A. V., Haggard, P., and Fardo, F. Pain, 165(10), 2370-2378.

PRESENTATIONS

- Facing Dementia: Investigating Disease Onset in a Mouse Model of Frontotemporal Dementia via Artificial Intelligence (23rd May 2024), Stuckert, A., Selvan, R., and Allodi, I. Research Postgraduate Poster Session, University of St Andrews.
- Facing Dementia: Investigating Disease Onset in a Mouse Model of Frontotemporal Dementia via Artificial Intelligence (11th April 2024), Stuckert, A., Selvan, R., and Allodi, I. Psycholoquia, University of St Andrews.
- Rescue of ALS phenotype by Esyt1 systemic overexpression in the SOD1G93A mouse model (13th November 2023), Stuckert, A., Mora, S., Pietersz, K., Selvan, R., Verhaagen, J., and Allodi, I. Abstract No. 6417, Society for Neuroscience conference.
- Rescue of ALS phenotype by Esyt1 systemic overexpression in the SOD1G93A mouse model (10th November 2023), Stuckert, A., Mora, S., Pietersz, K., Selvan, R., Verhaagen, J., and Allodi, I. Abstract No. 60, pre-SfN Motor Symposium.
- Rescue of ALS phenotype by Esyt1 systemic overexpression in the SOD1G93A mouse model (21st June 2023), Stuckert, A., Mora, S., Pietersz, K., Selvan, R., Verhaagen, J., and Allodi, I. Abstract No. 21, St. Andrews Motor Meeting.

GRANTS AND STIPENDS

- 2022-2023 Danish society for Neuroscience scholarstipend (140.000 DKK)
- The Augustinus Foundation grant (24.000 DKK)
- Familien Hede Nielsens Foundation grant (10.000 DKK)
- Knud Højgaards Foundation grant (22.000 DKK)

CERTIFICATES

- FELASA certified to work with laboratory animals under function A, B and D, with certificate No. ABD-F032/10/22-327
- PIL certified to work with laboratory animals under function A, B and C, with PIL No. I95319262 (A/B/C)