Tim Vriens

MSc, PhD student at CTN-lab (ISTC) and Universita Campus Bio-Medico di Roma

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Current position

Position	**PhD student**
Location	Computational and Translational Neuroscience (CTN) lab, Supervisor: Dr. Massimo Silvetti, at Istituto di Scienze e Technologie della Cognizione (ISTC), National Research Council, Rome; and Universita Campus Bio-Medico di Roma, Rome.
Year	2021- now

Previous research experience

Position	**Research Assistant**
Location	Clinical psychology, PI: Karin Roelofs, Faculty of Social Sciences, Radboud University, Nijmegen.
Year	2021
Tasks	Data analysis
Projects	During this RA position, I wrote scripts for stimulus presentation for a pharmacological study, and ran analysis on combined pupil and MRI data. Furthermore, I analyzed data using computational modeling with the Reinforcement Meta-Learner model.

Position	**Research Assistant**
Location	Cognitive affective neuroscience lab, PI: Dr. Erno Hermans, at the Donders Centre for Cognitive Neuroimaging, Radboud University, Nijmegen.
Year	2020-2021
Tasks	Data analysis, data collection, writing ethical application, study design.
Projects	During this RA position, I drafted the ethical application protocol, contributed to study design and setup for a pharmacological study, ran LC signal extraction for a decision-making study, performed biosampling, including blood drawing, and performed data acquisition for an MRI study. Additionally, I continued to work on my thesis. I finished up data collection, and continued data analysis for the project, using, amongst others, computational modeling.

Position	**Intern**
Location	Cognitive affective neuroscience lab, PI: Dr. Erno Hermans, at the Donders Centre for Cognitive Neuroimaging, Radboud University, Nijmegen.
Year	2019-2020
Tasks	Development of experimental design, coding of the experiment, data acquisition, data analysis
Project	During this internship, I studied the effects of stress on effort-based decision-making using fMRI, physiological measures, and eye tracking.

Position	**Student Assistant**
Location	Cognitive control lab, PI: Dr. Roshan Cools, at the Donders Centre for Cognitive Neuroimaging, Radboud University, Nijmegen.
Year	2018
Tasks	Analysis of combined EEG and fMRI data.
Project	I worked on the analysis of the combined EEG and fMRI data collected during my Bachelor internship.

Position	**Intern**
Location	Cognitive control lab, PI: Dr. Roshan Cools, at the Donders Centre for Cognitive Neuroimaging, Radboud University, Nijmegen.
Year	2018
Tasks	Development of experimental design, programming tasks, acquisition of combined EEG/fMRI data, analysis of combined EEG/fMRI data
Project	During this internship, I performed a combined EEG-fMRI, cross-modal experiment to the role of the Prefrontal Cortex in prediction and prediction error. I researched the difference in modulcation of different sensory regions, specifically visual and somatosensory, during prediction and prediction error, and their relation to interactions within the Prefrontal Cortex.

Previous positions (continued)

Position	**Intern**
Location	Neuroinformatics lab, supervisor: Dr. Francesco Battaglia, at the Donders Centre for Neuroscience, Radboud University, Nijmegen.
Year	2018
Tasks	Programming a clustering algorithm, data simulation.
Project	During this internship, I simulated neural interactions using computational modeling in Python, in order to cluster recordings of neuronal activity based on temporal data. In this internship, I used an unsupervised machine-learning paradigm to cluster patterns of neuronal activity.

Publications in preparation

Vassena E., Schieringa R., **Vriens T.**, Jensen O., Cohen M. Alexander W., Cools R. (in preparation). *Spatio-temporal contribution of the medial and lateral prefrontal cortex to predictive coding: evidence from simultaneous EEG-fMRI.*

Vassena, E. **Vriens, T.** Foinikianaki E. Kogias N., Toutounji R., Krentz M., Krause F., and Hermans E., (in preparation). *Acute stress impairs motivation for effort: evidence from behavior, pupil dilation and fMRI.*

Vriens T., Krentz M., Krause F., Hermans E., Vassena E. (in preparation) *Catecholaminergic effects of stress on motivation: a high-resolution fMRI study on cortico-subcortical interactions.*

Vriens T. (2021) *Stress and motivation: A fMRI study to the effects of stress on effort-based decision-making.* Proceedings of the Master's programme Cognitive Neuroscience. 16(2), pp 76-109

Reseach skills

Programming	Proficiency with Python, Matlab and R.
Statistics	Experienced with R, including modeling using (generalized) linear mixed models.
Neural data analysis and visualization	Experienced with bidscoin and fMRIprep (MRI data processing), SPM, Mango, fieldtrip (EEG data preprocessing), Brainvision analyzer (physiological recording), combined fMRI and EEG analysis preprocessing.
Stimulus presentation	Experience with the python-based package expyriment.
Data collection	Able to independently conduct experiments involving the collection of behavioral, physiology, eye tracking, EEG, and fMRI data.
	BROK certified (Dutch basic qualification regulation and organization for clinical researchers)

Education

MSc	Cognitive Neuroscience at Radboud University Nijmegen. (2018-2020) Passed cum laude.
Thesis	*Stress and motivation: A fMRI study to the effects of stress on effort-based decision-making.*
BSc	Mathematics at Radboud University Nijmegen (2016-2019).
Thesis	*Unsupervised detection of temporal patterns in neuronal recordings*
BSc	Biomedical Sciences at Radboud University Nijmegen (2014-2018).
Thesis	*The role of Prefrontal Cortex networks in prediction and prediction error: a simultaneous EEG-fMRI investigation.*
High school	VWO at Stedelijk gymnasium Nijmegen. (2008-2014)

Language proficiencies

Dutch (Native)
English (Proficient)

Extracurricular activities

2019: Part of the organizing commitee for the symposium '*Synapsium*', a yearly symposium on neuroscience hosted by the Radboud University.