Curriculum Vitae

Victoria Laura Bosch

Personal details

Name:	**Victoria Laura Bosch**
OrcID ID:	0000-0001-7454-8325
Google Scholar:	https://scholar.google.nl/citations?user=P7Ly864AAAAJ
Position:	Ph.D. student
Institution:	Kietzmann Lab, Machine Learning Group
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	University of Osnabrück
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Education

Nov 2022 – Current:	Ph.D. in Cognitive Computational Neuroscience at the University of Osnabrück Advisor: Prof Dr. Tim C Kietzmann Funded by ERC project 'It's about time: Towards a dynamic account of natural vision'.
Sep 2020 – Jul 2022:	Master in Cognitive Computing (Artificial Intelligence) at Radboud University (Donders Institute). *Cum laude*. Thesis: '*Topographic Neural Networks show neural recycling of labile units during reading acquisitio*n'
Sep 2016– Jul 2020:	Bachelor in Liberal Arts & Sciences (i.e., interdisciplinary studies) with a major in Artificial Intelligence and minor in Philosophy at the University of Utrecht. Thesis: '*A Bayesian perspective on the interaction between numerical and temporal perception*'

Other education

Sept 2023:	Participation in the Analytical Connectionism Summer School at the Gatsby Computational Neuroscience Unit, UCL, London.

Positions

2021- 2022: Member of the Degree Programme Committe (master student representative) of the Artificial Intelligence programme, Radboud University

2019-2021: Editor in-Chief and Board Member at De Focus, Student platform for science communication and outreach

Publications

Publications in peer-reviewed scientific journals

Bosch V. and Mecacci G (2023) Eyes on the road: brain computer interfaces and cognitive distraction in traffic. *Front. Neuroergon.* 4:1171910. doi: 10.3389/fnrgo.2023.1171910

Preprints

Lu, Z.†, Doerig, A.†, **Bosch, V.**†, Krahmer, B., Kaiser, D., Cichy, R., Kietzmann, T.C. (2023). End-to-end topographic networks as models of cortical map formation and human visual behaviour: moving beyond convolutions. *Arxiv*. Open access link: https://arxiv.org/abs/2308.09431

Peer-reviewed conference proceedings

Bosch, V., Gütlin, D., Doerig, A., Anthes, D., Thorat, S., König, P., Kietzmann, T.C. (2024). CorText: large language models for cross-modal transformations from visually evoked brain responses to text captions. *Computational Cognitive Neuroscience (CCN).*

Lu, Z.†, Doerig, **Bosch, V.**†, A.†, Krahmer, B., Kaiser, D., Cichy, R., Kietzmann, T.C. (2023). The brain can't copy-paste: End-to-end topographic neural networks as a way forward for modelling cortical map formation and behaviour. *Computational Cognitive Neuroscience (CCN).*

Bosch V., Diehl A., Smits D., Toeter A. and Kwisthout J. (2021). Implementation of a Distributed Minimum Dominating Set Approximation Algorithm in a Spiking Neural Network. *BNAIC/BeneLearn*.

Conference contributions

Talks

Implementation of a Distributed Minimum Dominating Set Approximation Algorithm in a Spiking Neural Network. **V. Bosch**, A. Diehl, D. Smits, A. Toeter and J. Kwisthout. BNAIC/BeneLearn 2021, Luxembourg.

Posters

Emergence of topographic organization in a non-convolutional deep neural network. Doerig, A., Krahmer, B., **Bosch, V.**, & Kietzmann, T.C., NVP Winter Conference on Brain and Cognition, 2021

Lu, Z.†, Doerig, A.†, **Bosch, V.**†, Krahmer, B., Kaiser, D., Cichy, R., Kietzmann, T.C. (2023). The brain can't copy-paste: End-to-end topographic neural networks as a way forward for modelling cortical map formation and behaviour. *Computational Cognitive Neuroscience Conference, Oxford.*

Lu, Z.†, Doerig, A.†, **Bosch, V.**†, Krahmer, B., Kaiser, D., Cichy, R., Kietzmann, T.C. (2023). The brain can't copy-paste: End-to-end topographic neural networks as a way forward for modelling cortical map formation and behaviour. *Analytical Connectionism Summer School, Gatsby Unit UCL London.*

Lu, Z.†, Doerig, A.†, **Bosch, V.**†, Krahmer, B., Kaiser, D., Cichy, R., Kietzmann, T.C. (2023). The brain can't copy-paste: End-to-end topographic neural networks as a way forward for modelling cortical map formation and behaviour. *NEAT: NeuroAI Talks conference, Osnabrück.*

Lu, Z.†, Doerig, A.†, **Bosch, V.**†, Krahmer, B., Kaiser, D., Cichy, R., Kietzmann, T.C. (2023). The brain can't copy-paste: End-to-end topographic neural networks as a way forward for modelling cortical map formation and behaviour. *The Interdisciplinary Computational Cognition Conference (ComCo), Osnabrück.*

Outreach

Bosch, V., *Het voorspellende brein: perceptie als hypotheses over de werkelijkheid* (2021). Popular science article about predictive processing at De Focus.

† Equal contributions

Teaching

Teaching assistant for the following courses:

2023: *Machine Learning for Cognitive Computational Neuroscience* (advanced bachelors, masters), University of Osnabrück.

2022: *Cognitive Computational Neuroscience* (advanced bachelors), Radboud University.

Student supervision:

2023: Thesis supervisor for bachelor and master's students at the University of Osnabrück.

Emilly Sidaine-Daumiller (BSc, 2023-2024), Stefan Balle (MSc, 2023-2024), Sabine Scholle (BSc, 2023-2024), Tara Schuchort (BSc, 2024).

Reviewing

PLOS Computational Biology

Organisation

NeuroAI Talks (NEAT) 2023 at the University of Osnabrück

Performing Robots Conference (2019, Panel Assistant)

NeuroAI Talks (NEAT) 2024 at the University of Osnabrück

Skills

Scientific skills

Interdisciplinary research

Strong abilities in Cognitive Neuroscience, Machine learning

Editorial work

Tools

Fluent in Python. Experience with R, C#, Netlogo, Javascript, HTML and Solidity

Fluent in TensorFlow and PyTorch.

Experienced use of modern source control (Git) and LaTeX software

Language skills

Dutch (mother tongue), English (native), German (basic), French (beginner)