Ronald B. Dekker

Postdoctoral researcher - Cognitive Neuroscience

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PROFILE

I am a motivated cognitive neuroscience and AI researcher with a strong foundation in data analysis, statistical modeling and machine learning techniques. Throughout my academic journey, I have gained extensive experience in analyzing complex datasets by combining methods from neuroscience, machine learning and statistics. It is my firm belief that an interdisciplinary approach can provide insights unobtainable by the pursuit of any individual field. My research has prepared me for a transition into a data science role, where I hope to leverage my unique background to inform data-driven decision-making and strategic initiatives.

Keywords: brain decoding, representation learning, training curricula, continual learning, deep neural networks, computational modeling

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EXPERIENCE

2022-2023 **Postdoctoral Researcher at University of Tokyo**

- Conducted 51 sessions of functional magnetic resonance imaging experiments.
- Devised a pipeline for decoding the semantic and emotional content of thought
- Decoded spontaneous thought and analyzed its relation to major depressive disorder

2018-2020 **Teaching and student supervision at University of Oxford**

- Demonstrated and graded for undergraduate courses in neuroscience and statistics
- Provided research and technical skills supervision for 3 student thesis projects (1 year each).
- Projects included neuroimaging, online experiments and reinforcement learning modeling.

2017-2017 **Consultancy project at healthcare innovation company ActiveCues**

- Assessed feasibility of creating a new product for 50 psychopathological groups
- Brought together researchers, developers and clinicians to bring a scientific framework into practice
- Developed a serious game to tackle substance abuse using interactive light projections

2015-2017 **Editor at Amsterdam Brain and Cognition journal**

- Reviewed academic articles and published these using Adobe InDesign

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EDUCATION

2017 - 2022 **University of Oxford**
PhD in Experimental Psychology (supervisor: Dr. Chris Summerfield)

Funding: Wolfson Marriott Graduate Scholarship in Experimental Psychology and MSD CSEF grant

2010 - 2017 **University of Amsterdam**
MSc in Brain & Cognitive Sciences (cum laude), GPA: 9.0/10
BSc in Psychobiology (with honors)
BSc in Interdisciplinary Sciences

PUBLICATIONS & CONFERENCES

Publications

Dekker, R. B., Otto, F., & Summerfield, C. (2022). Curriculum learning for human compositional generalization. *Proceedings of the National Academy of Sciences*

Dekker, R. B. (2021). Training curricula and structured representations in human and machine learning. *Doctoral dissertation, University of Oxford.*

Flesch, T., Balaguer, J., Dekker, R., Nili, H. & Summerfield, C. (2018). Comparing continual task learning in minds and machines. *Proceedings of the National Academy of Sciences*

Conferences

Current Issues in Mind-Wandering Research 2023 (Heidelberg, Gemany). Talk slot: *Dynamics of semantics in spontaneous thought*

Conference on Cognitive Computional Neuroscience (CCN) 2023 (Oxford, United Kingdom). Poster presentation: *Cross-Task fMRI Decoding: a Window into Mind-Wandering*

International Symposium on Biology of Decision Making 2019 (Oxford, United Kingdom). Poster presentation

International Symposium on Biology of Decision Making 2018 (Paris, France). Poster presentation

QUALIFICATIONS

Technical skills (ordered by proficiency)

Python, MATLAB, JavaScript, HTML, UNIX (Ubuntu), Excel, SPSS, R, DOS, FSL, Wolfram Mathematica

Research techniques

Artificial neural networks (PyTorch, TensorFlow), computational modeling, EEG, fMRI, reinforcement learning, disciplinary and interdisciplinary collaboration, experimental design, statistics

Languages

Dutch: Fluent (native)

English: Fluent - BLTC (British Language Training Centre) Academic English grade: 8.5 (tested 2011)

Japanese: Proficient