

# Dr Natalia Zdorovtsova

[Website](#) | [LinkedIn](#) | [Cambridge Neuroscience](#)

## Overview

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I am an Associate Consultant in Health Analytics at Lane Clark & Peacock LLP. Previously, I completed a PhD at the MRC Cognition and Brain Sciences Unit, University of Cambridge, where my work focused on building computational models that offer a glimpse into the emergence of neurological diversity.

My work across **scientific research, data science, machine learning/AI, biotechnology, science policy, and outreach** has prepared me for a career in which I can tackle complex analytic and theoretical problems, work effectively in a team structure, and communicate quantitative results to a diverse set of stakeholders.

## Contact Information

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## Employment

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**Lane Clark & Peacock LLP**  
*Health Analytics Associate Consultant*

February 2024  
onwards

I build machine learning models that extract meaningful insights from real-world healthcare data. My responsibilities will include protocol development, the design and execution of analyses, project management, quality control, report composition, and stakeholder/client engagement.

## Education

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**University of Cambridge**  
*PhD in Medical Science at the MRC Cognition & Brain Sciences Unit*

October 2020-  
December 2023

My PhD was supervised by Professor Duncan Astle. The goal of my research was to uncover the neural mechanisms that support different trajectories of brain development, especially in developmental conditions like ADHD and autism. To do this, I used graph-theoretic models and machine learning methods to study the structural topology and functional dynamics of brain networks in humans.

**University of St Andrews**  
*MA (Honours) in Psychology (specialism in Cognitive Neuroscience)*

September 2016-  
June 2020

Degree Classification Awarded: **First Class**

Academic Awards and Commendations:

- Dean's List (2017-2018 & 2019-2020)
- Certificate of Commendation for Outstanding Contribution to Psychology & Neuroscience (2020)

**Additional Courses:** Python 3 (Codecademy; 2023), SQL (Codecademy; 2024), Tableau for Data Visualisation (Codecademy; 2024), Machine Learning/AI Engineer Career Path (Codecademy; 2024)

## Technical Skills

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- Highly experienced in using Python and MATLAB for **machine learning, deep learning, statistical analysis, and data visualisation**, with a particular focus on:
  - Cleaning and preprocessing large datasets, including questionnaires and cognitive tests, electrophysiological timeseries data, and neurological data from MRI and fMRI.
  - Applying machine learning techniques (such as Hidden Markov Modelling, clustering, and a variety of neural network architectures) to uncover trends in large, high-dimensional datasets.
  - Building neural network models (CNNs, RNNs, and fine-tuned transformers) to perform classification and regression on image, timeseries, and NLP datasets.
  - Constructing, summarising, and analysing network models of complex quantitative datasets using graph-theoretic measures.

- Using statistical testing to conduct exploratory and confirmatory analyses, construct theoretical models, and falsify results from experimental paradigms.
- Creating clear, informative visualisations of statistical trends using packages in Python and R, as well as Tableau.
- Fully trained in using Electroencephalography (EEG), Magnetoencephalography (MEG), and Magnetic Resonance Imaging (MRI) to collect neurophysiological data.

## Other Relevant Skills

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- Leadership and project management in academia, biotechnology, large-scale outreach projects, and policy creation.
- Scientific writing and public outreach (shortlisted for the [UKRI Max Perutz Science Writing Award in 2022](#), with an extensive track record of writing articles and doing informative presentations for academic and lay audiences).

## Scientific Publications

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Toffoli, L., <b>Zdorovtsova, N.</b> , Epihova, G., Duma, G.M., Cristaldi, F.D.P., Pastore, M., Astle, D.E., & Mento, G. (2024). <a href="#">Dynamic transient brain states in preschoolers mirror parental report of behavior and emotion regulation</a> . <i>In preprint on BioRxiv</i> .	January 2024
<b>Zdorovtsova, N.</b> , Young, E.J., Akarca, D., Anwyl-Irvine, A., & Astle, D.E. (2023). <a href="#">The entropy of resting-state neural dynamics is a marker of general cognitive ability in childhood</a> . <i>In preprint on BioRxiv</i> .	August 2023
<b>Zdorovtsova, N.</b> , Jones, J., Akarca, D., Benhamou, E. & Astle, D.E. (2023). <a href="#">Exploring Neural Heterogeneity in Inattention and Hyperactivity</a> . <i>Cortex</i> , 164, 90-111.	July 2023

## Other Publications

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<b>Zdorovtsova, N.</b> (2023). <a href="#">Inclusive policies for schools</a> . Published by the Bennett Institute for Public Policy.	2023
<b>Zdorovtsova, N.</b> , Alcorn, A. M., & Astle, D.E. (2023). <a href="#">Belonging in School Executive Summary: School-level approaches for developing inclusive policy</a> . Medical Research Council Cognition and Brain Sciences Unit, University of Cambridge.	2023
Alcorn, A.M., <b>Zdorovtsova, N.</b> , & Astle, D.E. (2023). <a href="#">Belonging in School Part 2: A Practical Guide to Inclusive Policy Planning</a> . Medical Research Council Cognition and Brain Sciences Unit, University of Cambridge.	2023
Alcorn, A.M., <b>Zdorovtsova, N.</b> , & Astle, D.E. (2023). <a href="#">Belonging in School Part 1: An Introduction to School-level Approaches for Developing Inclusive Policy</a> . Medical Research Council Cognition and Brain Sciences Unit, University of Cambridge.	2023
<b>Zdorovtsova, N.</b> (2022). <a href="#">Scientists must embrace the reality of neurodiversity</a> . Published in Varsity Magazine.	2022
<b>Zdorovtsova, N.</b> (2021). <a href="#">Attention Deficit Hyperactivity Disorder (ADHD): A Brief Summary of Key Research</a> . Salvesen Mindroom Centre, Edinburgh, UK.	2021
<b>Zdorovtsova, N.</b> (2020). <a href="#">What is Life? A Crash Course to Autopoiesis</a> . Published in Varsity Magazine.	2020

## Positions of Responsibility

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### Co-Lead Organiser, *Belonging in School* initiative

September 2022-  
September 2023

Overseen by my PhD supervisor, Professor Duncan Astle, I managed a \$100k grant from the Templeton World Charity Foundation, awarded in September 2022, to complete two projects centred around evidence-based policymaking in education and social care:

- **Diverse Trajectories to Good Developmental Outcomes Workshop (November 2022)**: Led the process of organising and facilitating a multi-

disciplinary workshop as part of the Global Scientific Conference on Global Flourishing. This event brought together dozens of leaders in academic research, the charity sector, policy, education, and clinical practice to engage in collaborative processes aimed at improving school-level and national policies in the UK. More information about the event can be found [here](#).

- **Belonging in School Initiative (February-September 2023):** Following evidence gathered during the Workshop, I collaborated within a small team to produce a free, comprehensive set of evidence-based resources for the development of equitable school policies, as well as organise a launch event for these materials that brought together relevant stakeholders. The resources can be found [here](#).

### **CEO, Cerebrum Technologies**

January 2021-  
January 2022

I have experience as a founder in the portable EEG startup space. In 2021, Cerebrum participated in Cohort IV of [Conception X](#), a London-based deep tech startup accelerator. In my time as CEO, my team and I designed a [new open-source EEG headset with modern components](#).

### **President of the School of Psychology & Neuroscience at the University of St Andrews**

July 2019-July  
2020

I served as the School President for my department, which involved representing all students within the School of Psychology & Neuroscience and chairing meetings between students and faculty, managing a team of class representatives, organising training events and workshops, and organising the [Psychology, Neuroscience, and Biology Student Conference](#).

## **Additional Research Positions**

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### **Research Internship: *What Kind of Mind? (University of St Andrews)***

January 2018-  
January 2020

I conducted a research project centred around investigating public assumptions and biases concerning animal minds and the scientific method with Professor Juan Carlos Gomez, Dr Amanda Seed, and Dr Derek Ball.

### **Research Internship: *Constructing Social Minds: Coordination, Communication, and Cultural Transmission (Edinburgh Zoo Living Links Primate Lab)***

May 2019-  
October 2019

I conducted a research project focusing on foraging behaviours and navigation in great apes. This involved contributing to ongoing research at [Edinburgh Zoo's Living Links primate lab](#) in collaboration with Professor Josep Call, as well as assisting with a chimpanzee virtual reality foraging task.

## **Extracurricular**

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I am a [semi-professional painter](#). In my spare time, I enjoy hiking, photography, traditional Ukrainian cooking, and weightlifting.