

TIMO FLESCH

Postdoctoral Researcher & Data Scientist

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📍 Oxford, UK

EDUCATION

PhD Experimental Psychology

University of Oxford

📅 2018 - 2022

📍 Oxford, UK

PgDip Computational Statistics and Machine Learning

University College London

📅 2016 - 2018

📍 London, UK

BSc Cognitive Science

University of Osnabrueck

📅 2012 - 2015

📍 Osnabrueck, Germany

TECHNICAL SKILLS

- Machine Learning
- Python Stack (NumPy, SciPy, scikit-learn, Matplotlib, Seaborn, Pandas)
- MATLAB
- Version Control (git/github)
- CI/CD (Github Actions)
- Cloud Computing (AWS)
- Web Development (HTML/JavaScript)
- Linux/Bash

RELEVANT COURSEWORK

- Algorithms & Datastructures
- Linear Algebra & Calculus
- Machine Learning
- Methods of Artificial Intelligence
- Concepts and Applications of Neural Networks
- Neuroinformatics
- Statistical Inference
- Deep Learning & Reinforcement Learning
- Probabilistic & Unsupervised Learning

PUBLICATIONS

[Flesch et al. \(2022\) ArXiv](#)

[Flesch et al. \(2022\) Neuron](#)

[Flesch et al. \(2020\) JNeuro](#)

[Flesch et al. \(2018\) PNAS](#)

SOFTWARE

[AutoCausality - AutoML for Causal Inference](#)

WORK EXPERIENCE

Postdoctoral Researcher - Deep Learning

Sainsbury Wellcome Centre/ Gatsby Computational Neuroscience Unit
University College London

📅 06/2022 - 11/2022 📍 London, UK

- Six months post-doctoral placement, funded by MRC scholarship awarded to outstanding PhD candidates
- Project 1: Understanding the interplay of weight initialisation and vulnerability to adversarial attacks in deep neural networks
- Project 2: Re-analysis of very large dataset of monkey brain activity (>100GB) using supervised machine learning techniques

Data Scientist/Consultant

Oxford Strategy Group Digital

📅 01/2021 - 05/2022 📍 Oxford, UK

- Managed and completed three data science projects with international clients
- Worked in teams of five data science consultants
- Reported key findings to upper management of client companies
- **Saturdays.AI**: Four Python notebooks that teach and showcase applications of machine learning solutions for problems in data science:
 - Energy forecasting with LSTMs ([link](#))
 - Facial keypoint detection with CNNs ([link](#))
 - Crop yield prediction with Random Forests ([link](#))
 - Predictive maintenance with regression ([link](#))
- **Joox Music**: Research on state of the art of recommender systems (NDA)
- **Wise**: Lead development of AutoCausality, a Python library for automated causal inference ([link](#))

Doctoral Researcher - Computational Neuroscience

Department of Experimental Psychology
University of Oxford

📅 10/2018 - 05/2022 📍 Oxford, UK

- Independently managed and completed four research projects on the application of deep learning theory to problems in neuroscience
- Developed novel deep learning models and algorithms in Python with PyTorch to simulate human cognitive processes
- Collected and analysed very large (>50GB) and high-dimensional dataset of human functional brain activity (fMRI) using unsupervised and supervised machine learning techniques (Python, scikit-learn)
- Developed browser-based interactive games to assess human cognitive function (HTML, JavaScript)
- Gathered, preprocessed and analysed large behavioural dataset (>800 participants) using machine learning and advanced statistics (Python, scikit-learn)
- Published results in major neuroscience journals and gave invited talks in and outside of academia (Deepmind, Mila, University of Tuebingen, Princeton University, Intel AI lab)

Research Assistant - Cognitive Neuroscience

Department of Experimental Psychology
University of Oxford

📅 10/2015 - 09/2018 📍 Oxford, UK

- Collected, preprocessed and analysed large timeseries datasets of human brain function (EEG). Wrote end-to-end processing pipelines in MATLAB
- Implemented Variational Autoencoders (VAE) and other deep learning techniques (CNN/LSTM) in Python with Tensorflow to model human learning
- Published results in major interdisciplinary journal (PNAS)