

Summary

Co-founder of Reti Health, where I built and deployed deep learning models to predict heart attacks, strokes and hypertension from retinal images, and integrated them into customer facing products. I love making ML products, taking them all the way from ideation, to data collection, training and validation, and productionisation.

Reti.Health

Co-Founder/CTO (Dec 2020-present)

- Screening people for cardiovascular disease at optometrists using retinal images
- Secured >£100k seed funding from Entrepreneur First and angels
- Sourced multiple datasets, including one of 180k retinal photos linked to NHS health records
- Trained models to predict heart attack, stroke and hypertension, combining CNNs and survival analysis. Results beat Google Health's on the same dataset
- Integrated models into web and desktop apps, deployed and tested them with optometrists
- Developed partnership with large optometry group (200 stores), built advisory team, customer acquisition

Opteo.com

Machine Learning Engineer (Dec 2018-Sep 2020)

- Built NLP model providing Google Search keywords suggestions to advertisers to power one of the companies most used features
- Statistical analysis of company impact on key client metrics, public dissemination as blog posts
- Data warehouse and BI platform setup

Visii.com

Head of Research (Apr 2016-Mar 2020)
Computational Neuroscientist (Jan 2015-Apr 2016)

- Built R&D platform for prototyping and testing algorithms for visual search. This increased API response times 10x, allowed for faster development, and still serves millions of requests/month
- Computational neuroscience project generating image feature vectors mimicking human cortical representation of images
- Real-time interactive image classification for human in the loop image selection and feature creation
- Optimising image feature extraction with latest CNNs, building and refining multi-headed networks to optimise for client needs
- Built big data pipelines, created analytics reports to share with clients

University College London

PhD Candidate Cognitive Neuroscience & RA (2012 -2014)

- Designed and ran electrical brain stimulation experiments building on my master's thesis, and fMRI experiments using pneumatic robotic manipulanda
- Sole developer on Dextrickery, an app for crowdsourcing motor learning data collection
- Left before completing to find more applied work

University of Groningen

Research MSc in Cognitive Neuroscience - Cum Laude

- Minor thesis on using brain computer interfaces to control a computer cursor
- Major thesis speeding up motor learning using electrical brain stimulation

University of Leeds

Cognitive Science - 1st Class Honours

- Thesis: Reconstructing topological maps from hippocampal place cells in the rat

Miscellaneous

- On my website I have browser-playable Java games I've built, a cool background designer, and some blog posts
- Starship Robotics Self Driving Animal Rescue Challenge 1st prize winner (December 2018)
- I regularly make pretty great sourdough pizza and run about 30k a week to mitigate the damage
- Keen to maximise the positive impact I have on the world through my career. 80k hours podcast fan, previously attended EAGxOxford

Sample Tech

ML: PyTorch (Lightning), Scikit-Learn, Tensorflow

Application: Tornado, Vue, Electron, SQLite, MySQL

Cloud: AWS (EC2, Athena), Google (BigQuery, TPUs)

Sample Publications

Ipsilateral finger representations in the sensorimotor cortex are driven by active movement processes, not passive sensory input (Berlot et al, 2019, Journal of Neurophysiology)

Effects of different electrical brain stimulation protocols on subcomponents of motor skill learning. (Prichard et al, 2014, Brain Stimulation)