Dr Maxine Mackintosh

Tell me about your research
My work involves taking anonymised electronic medical records from GP visits across millions of people in the UK, identifying people in the data who have had dementia, and then looking back 20 years to see any signs, symptoms or medications that show evidence of cognitive decline much earlier. This could help us diagnose people with dementia earlier, and in turn help improve the treatment and care they receive.

I’ve thrown the kitchen sink of data science tools and methods at the data, trying to be as open-minded (and hypothesis-free) as possible. I’ve found some less surprising links such as with cardiovascular conditions and mental health. I’ve also found more surprising things, like those who regularly attend cervical smears are less likely to get dementia, probably because they tend to be of higher socio-economic status and are able and willing to attend appointments.

What motivates you?
A mixture of the science, a family link and what data science unlocks. I did neuroscience as an undergraduate and was really interested in the brain. Dementia really lends itself to data science because it is long term and affects people in lots of different ways and therefore there is huge variability across many dimensions. My late grandfather also passed away from dementia 10 years ago.

Are there any myths about your work which bother you?
There are a lot of scare stories around how health data can be used and it can take a while to convince people how much it can help. There are also myths around the stereotypical data scientist; the hooded man with no social skills. We also really need to engage better with patients and the public.

In an ideal world, where do you see your work in the future?
I’ve now generated a large number of new potential areas to explore with my analyses. It would be great for GPs and other medical experts to pick out the best signals to test further for true signals, as well as clinically meaningful areas to help patients.

About the artwork
Maxine’s work got me thinking about the moments in our lives when we interact with the healthcare system and what these can mean in her research. The border represents all the connections the data analysis can show between these fleeting interactions - Hana

This project was kindly funded by: Alzheimer’s Research UK

This design & profile were created based on interviews conducted in late 2019 & early 2020. They are made available under a CC BY-NC-ND 2.0 UK license. Visit hanaayoob.co.uk/dementia for more information.