

SoMaS open days

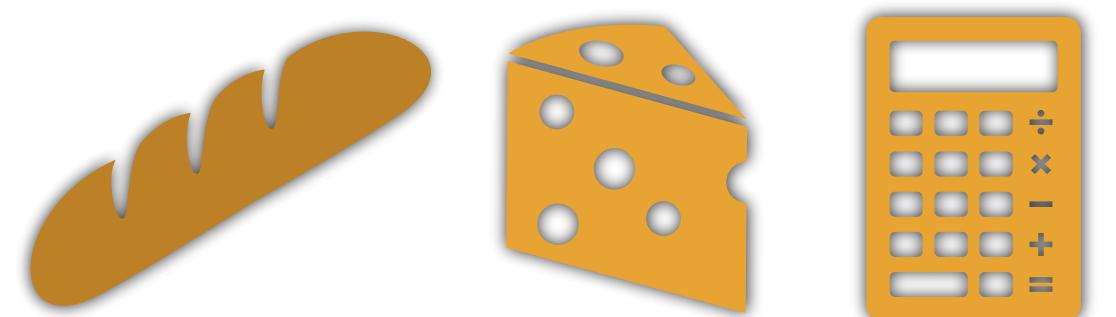
Tuesday, 11 February 2020

Ines Krissaane
Ph.D. Student

School of Mathematics and Statistics, The University of Sheffield
Healthcare ML group, Microsoft Research Cambridge

WHO AM I ?

France

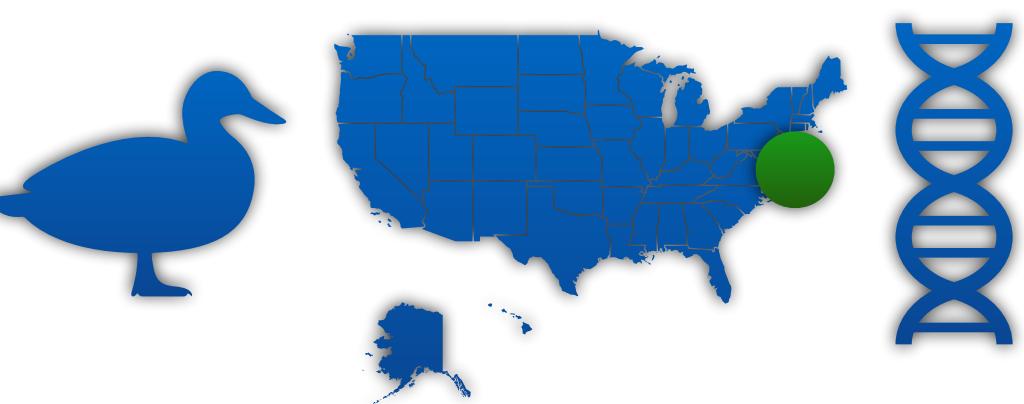


Sorbonne Université

Bachelor in Mathematics

Master in Statistics/Data Science

USA



Harvard University

Visiting Research Scholar

Research Associate

UK



**Sheffield University
Microsoft Research Cambridge**

PhD Student

WHAT AM I DOING?

Artificial Intelligence

What is Artificial Intelligence?



Robot pepper in Carrefour



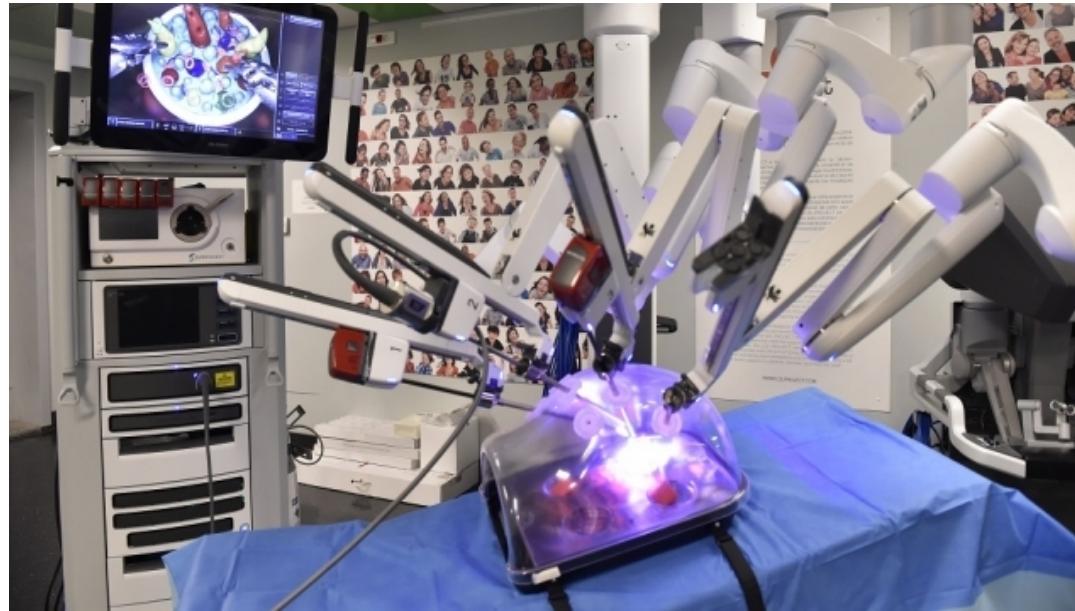
Siri



Google Car



Military applications



Chirurgical pediatric robot



Agriculture



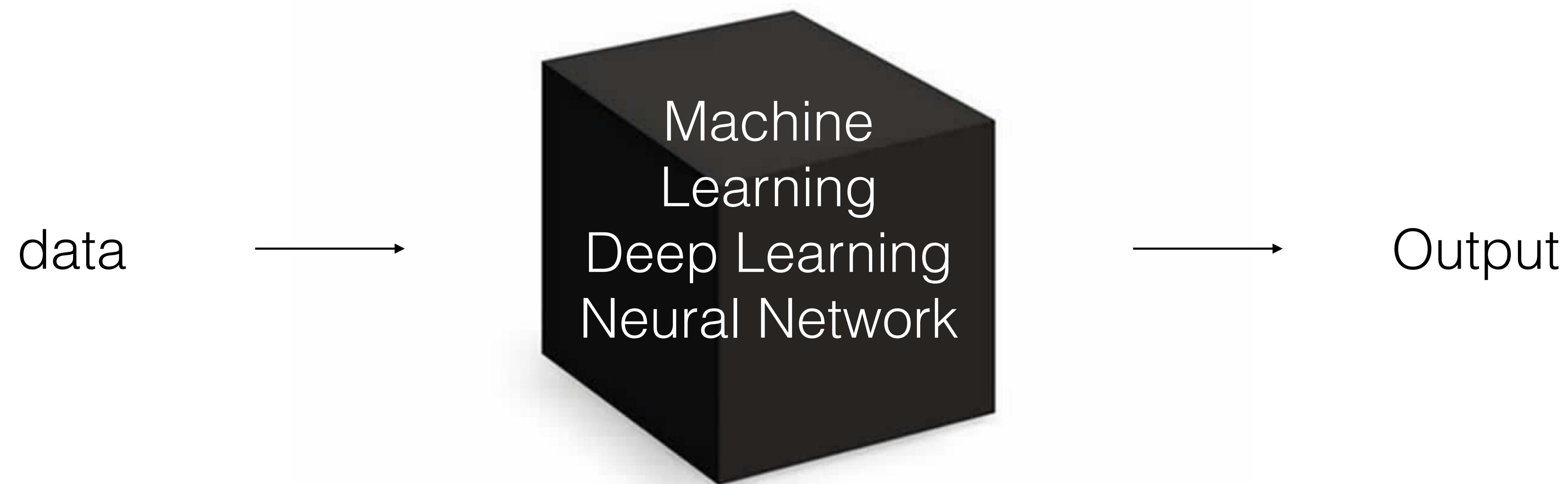
Project Malmo - Minecraft



Fitness Tracker

“Artificial intelligence is the new electricity.” – Andrew Ng, Chief scientist, Baidu Research

A black box ?



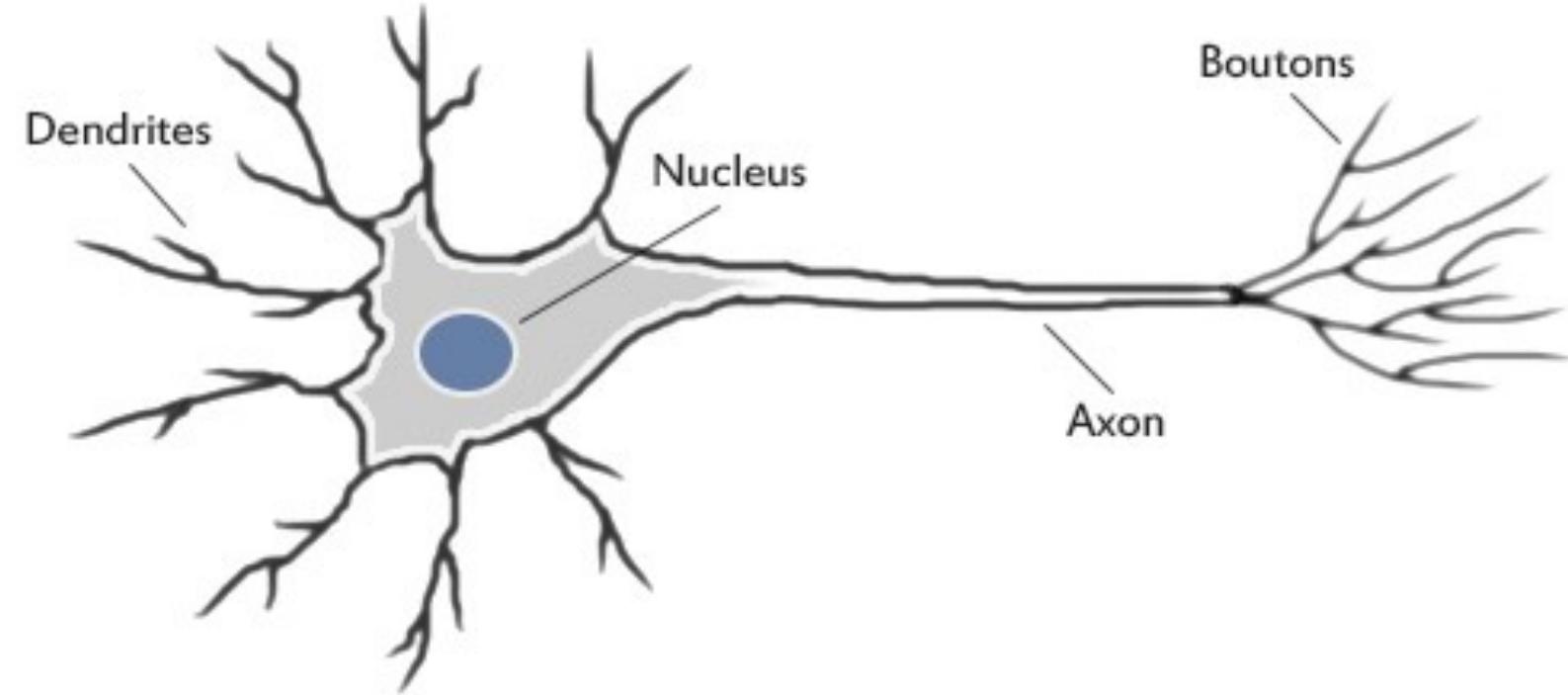
WHAT AM I DOING?

Artificial Intelligence

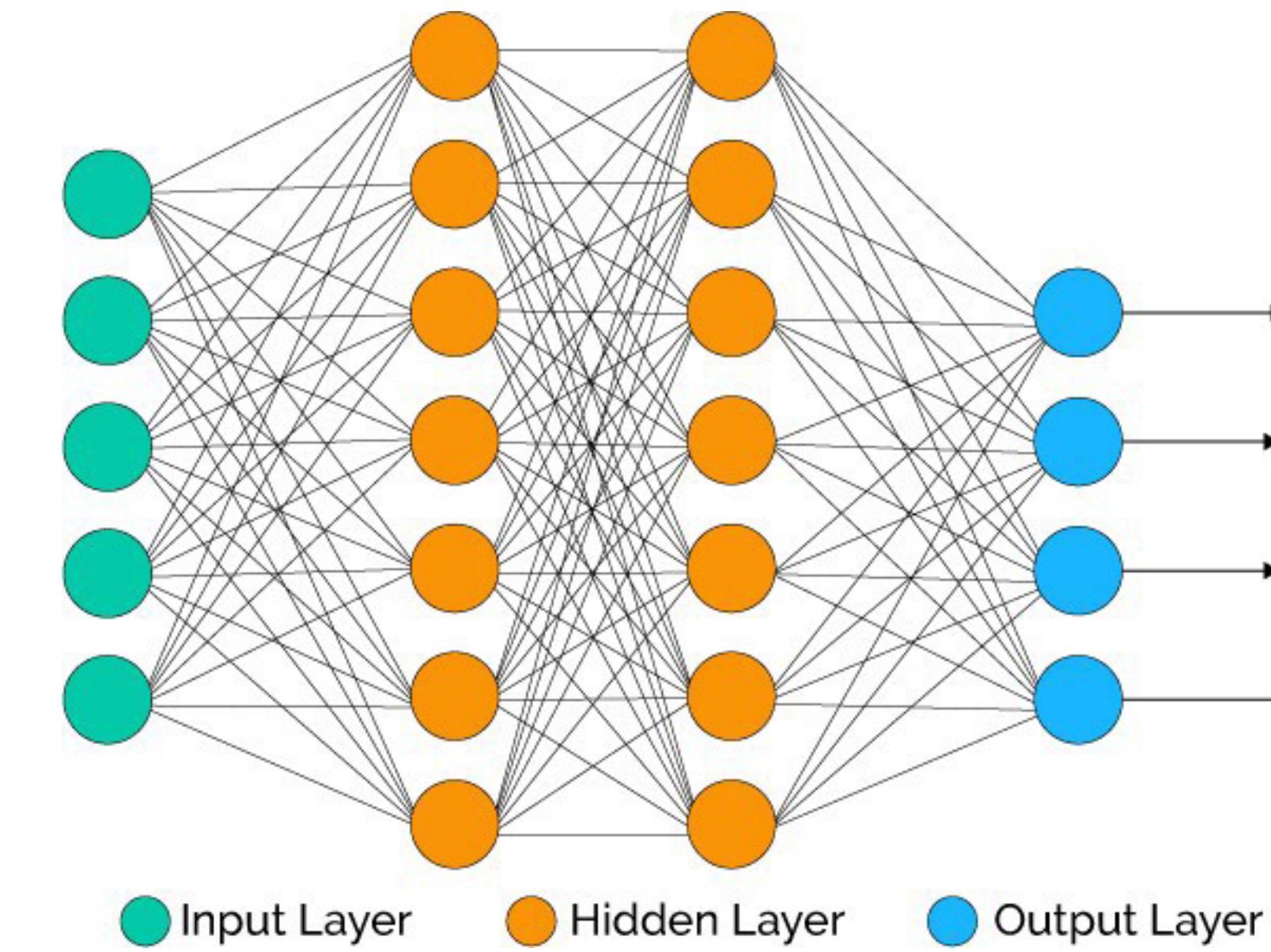


Machine Learning , Deep learning, Neural Networks

Neural Network (NN)



A Neuron in the Brain



Artificial NN

WHAT AM I DOING?

Artificial Intelligence



Machine Learning , Deep learning, Neural Networks



Mathematics - Statistics - Computer Science



- Biology
- Genetics
- Medical

WHAT AM I DOING FOR REAL ?

- **Early prediction of Sepsis from Clinical Data**

Krissaane, Ines., Wilkinson, Richard, Alshenaifi Jumanah. 2019. “Anomaly Detection Semi-Supervised Framework for Sepsis Treatment.” *2019 Computing in Cardiology Conference (CinC)*. Computing in Cardiology

30 million people worldwide every year with sepsis, potentially leading to 6 million deaths

[1] - Word Health Organisation (WHO), 2018, <https://www.who.int/sepsis/en/>

- **Rare disease pattern recognition and analysis**

Improve diagnoses of existing rare diseases to assist clinicians in placing difficult cases on a fast track to diagnosis and therefore improve patient care; save money.

Rare disease patients have cost the NHS in excess of £3.4 billion

[2] - Mendelian, 2018, <https://www.mendelian.co/the-cost-of-undiagnosed-rare-diseases>

- **Improve statistical methods under Model Misspecification**

Robust statistical methods to deal with Model Misspecification namely for inference from uncertain experimental measurements for the Hodgkin Huxley model of action potentials,

All Models are wrong but some are useful.

- George Box

WHAT AM I DOING FOR REAL ?

Teaching : GPA for undergraduate students of Sheffield University

Training : Singapore, Oxford, Cambridge, Southampton, Durham

Conference : Manchester, Boston, Singapore ...



Garden by the Bay, 11/09/2019

WHAT IS IT TO BE A PhD Student ?

+

- challenging yourself
- develop a wide range of skills
- travel and collaborate
- unlock other opportunities



-

- work, work, work
- stressful
- feeling lonely and lost

Motivated and hardworking, you should be !

My life in Sheffield



The University Of Sheffield.

POP-UP university

Bringing our research to you



20-22 September
Millennium Gallery



Talks programme

20 minute talks on a wide range of new, ground-breaking research from across the University of Sheffield.

Friday 20 September

Can AI accelerate precision medicine?

Ines Krissaane

10.30–10.50am

Join Ines Krissaane and discover how artificial intelligence can change the future of medicine – using statistics, machine learning and deep learning to research issues relating to healthcare.

Using mathematics to save our species

Natasha Ellison

11–11.20am

Mathematics can be used to understand how animals move around the landscape and predict what might happen if they lose their habitat. Natasha Ellison will talk about how we do this and why it is useful.

What do we know about menopause, relationships and intimacy?

Stephanie Ejegi-Memeh

1.30–1.50pm

Join Stephanie Ejegi-Memeh and hear about research around women's sexual health and well-being at menopause and beyond. The session will include myth busting and troubleshooting.

Breaking down the walls of the causes of cancer

Chiara Niespolo

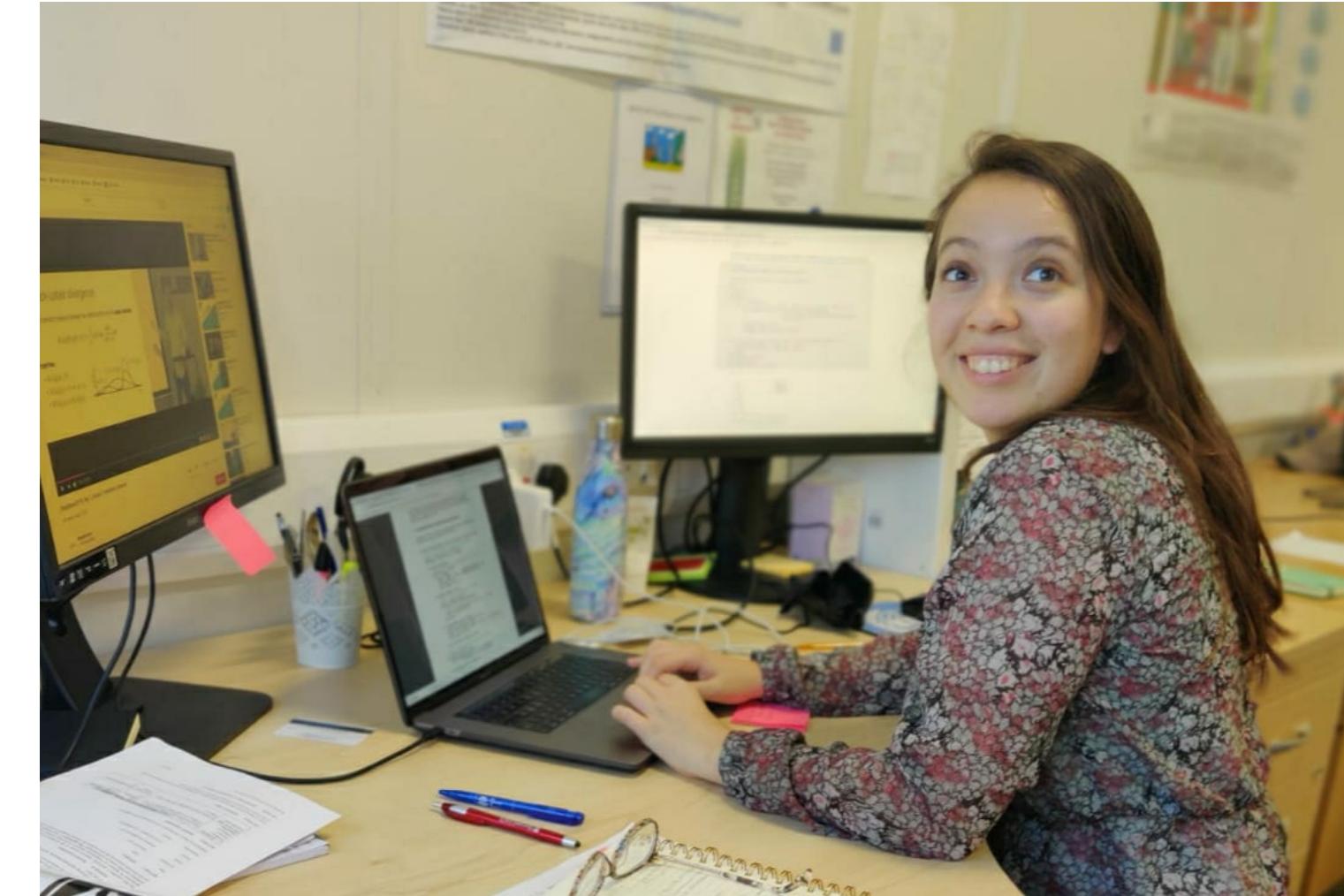
2–2.20pm

Join Chiara Niespolo and find out how she and her colleagues from across the EU take a collaborative approach to research and are working together to understand the fundamental causes of prostate cancer.

Experience Castlegate

Professor John Moreland and Tom Moore

2.30–2.50pm



My office



Peak District, Oct 2020

Ines Krissaane

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<https://ineskris.github.io/>



@IKrissaane

THANK YOU !

Presentation here :

<https://github.com/ineskris/ten-minute-talk>