Imperial College London

MACHINE LEARNING & GLOBAL HEALTH NETWORK

Modern Statistics and Machine Learning for Global Health

22nd – 24th February 2024

The Machine Learning and Global Health Network

https://mlgh.net

Who are we?

Network spanning across institutes in London, Oxford, Bristol, Copenhagen, Kaiserslautern, and Singapore.

We are 9 principal investigators, 6 postdocs, and 20+ students.

WE ♡ DATA SCIENCE

WE ♡ STATISTICS

WE ♡ HELPING PEOPLE WITH OUR RESEARCH

What are we going to cover?

- Lecture 1: Introductions (9.00 - 9.30)

Bayesian Inference

- Lecture 2: Introduction to Stan for applied Bayesian analyses (9.30-10.00)
- Practical 1: Stan basics (10.00-11.30)
- Break (*15 min*)
- Lecture 3: Scalable Gaussian process regression models (11.45-12.30)
- Practical 2: Scalable GP regression models (12.30-13.00)
- *Lunch (1 hr)*
- Practical 2: Scalable GP regression models (14.00-16.00)

Friday February 23rd

Infectious Disease Transmission Modelling

- Lecture 4: Introduction to Infectious Disease Modelling (9.00-10.00)
- Lecture 5: Introduction to phylogenetics (10:00-10:40)
- *Break (20min)*
- Four remote research talks from the Machine Learning and Global Health Network
- (11.00-13:00)
- *Lunch (1 hr)*
- Practical 3: Running a phylogenetic pipeline (14:00-15:00)
- Lecture 6: SIR models (15:00 – 16:00)

Saturday February 24th

- Practical 4: Deriving SIR type models (13:00-14:00)
- Lecture 7: Introduction to Fitting an SIR model practical (14:00-14:10)
- Practical 5: Fitting an SIR model in Stan (14.10-16.00)
- Barbecue & cocktail: (16:00-18:00)

Your course demonstrators

Dr Juliette (Ettie) Unwin

Dr Alexandra (Alex) Blenkinsop

Yu Chen

Shozen Dan

And you!

You are going to introduce your neighbour to the class.

1) What is their name?
2) Where are they from?
3) What do they hope to gain from this course?

Finding the course material

https://github.com/MLGlobalHealth/aims_rwanda_2024