浙江大学爱丁堡大学联合学院

ZJU-UoE Institute

Introduction to the course

ADS 2, Lecture 1

Melanie Stefan - melanie.stefan@ed.ac.uk

Semester 1, 2019/20

So . . . you have made it to year 2 of BMI!

WHAT NOW?!

Objectives

Objectives for this session

- Learn about how this course is organised
- Start thinking about numbers and probabilities

Outline

"Big picture" idea for Applied Data Science 2

Understand probability and statistics through running computer simulations

still.png

Learning Objectives for Applied Data Science 2

After taking this course, you will be able to:

- Critically evaluate statistical representations in the scientific literature, as well as popular media
- Describe common methods for statistical inference and hypothesis testing, understand what data sets they can be applied to, and perform and interpret common hypothesis tests
- Understand the components of a dataset, handle and prepare raw data for further analysis, and display and describe datasets in meaningful ways, while considering ethical implications of data gathering, storage, analysis, and presentation
- Understand the probabilistic underpinnings of frequentist and Bayesian statistics
- Name and describe common Machine Learning methods and implement simple machine learning tasks

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- Name and describe common Machine Learning methods and implement simple machine learning tasks

Discuss: Which of those do you have some experience with?

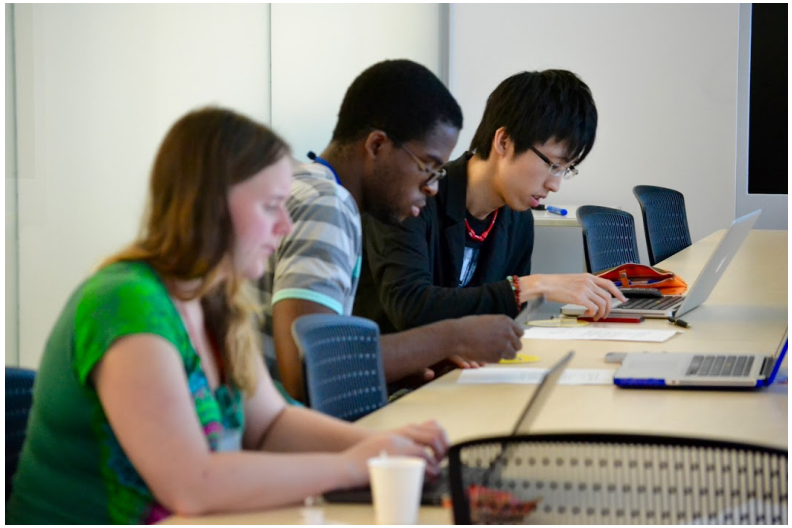
Course format

Weekly format

- 1 Lecture
- 1 Practical or Tutorial
- Weekly problem set (not compulsory)

Take note

- Some weeks are different (due to holidays)
- Rooms vary with content, please double-check!



Computers

You should bring your own computer. If you don't have one (or if it breaks down), contact course organisers as soon as possible.

Assessment

Summative (graded):

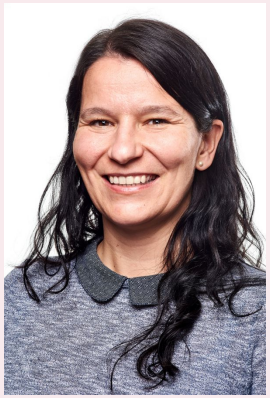
- Open-book timed coding challenge, semester 1 (30 %)
  Semester 1 exam period
- Data analysis group project (30 %)
  Deadline: 11 May 2020, noon
- Open-book timed coding challenge, semester 2 (40 %)
  Semester 2 exam period

Formative (for practice):

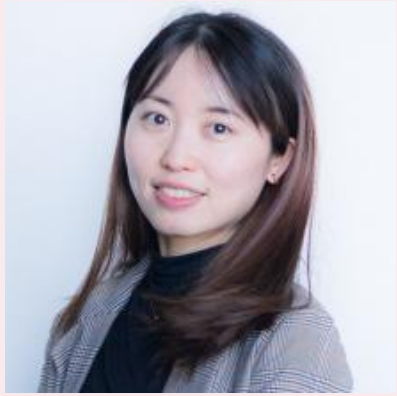
- Weekly problem set: mixture of math, coding and discussion questions; should take around 1 hour to complete. Not graded, but notes will be provided at the end of the week

Course staff

Course management



Dr. Mela Stefan
Course Organiser
UoE



Dr. Wanlu Liu
Deputy CO
ZJE

Cheryl Chen
Course Admin
ZJUE

Teaching staff

- Teaching staff from ZJU and UoE
- Check weekly schedule and materials for details

Communication

Discuss

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- Where do you get information with the course?
- Who can help you with problems?
- Who should you complain to?

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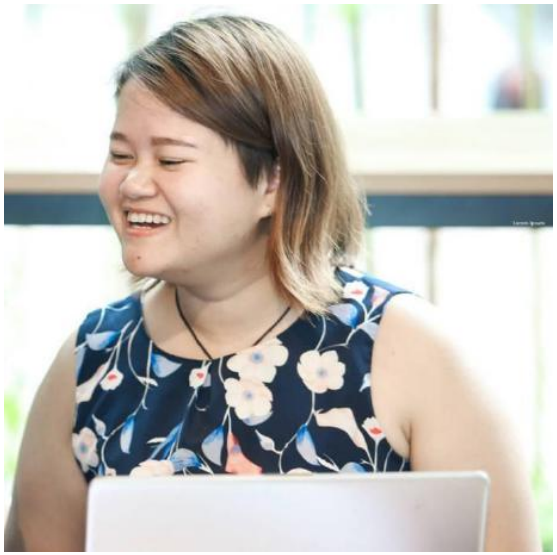
- Who can help you with problems?
  Course organiser, instructors, course admin, academic advisor, classmates
- Who should you complain to?
  Hopefully, there won't be reason to complain!
  But if there is: course organiser, class reps

Class reps

Let's start by thanking last year's class reps!



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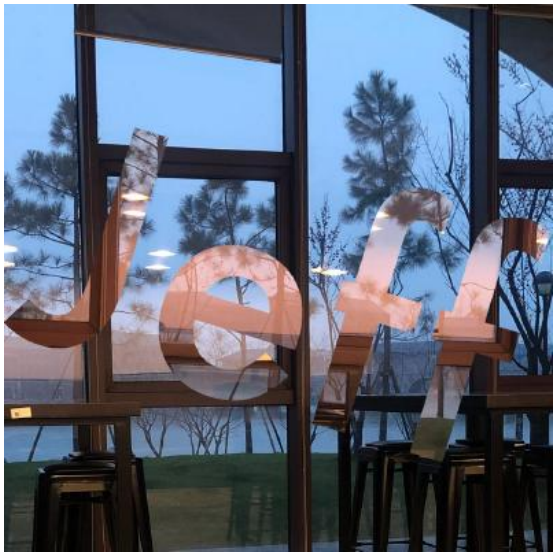
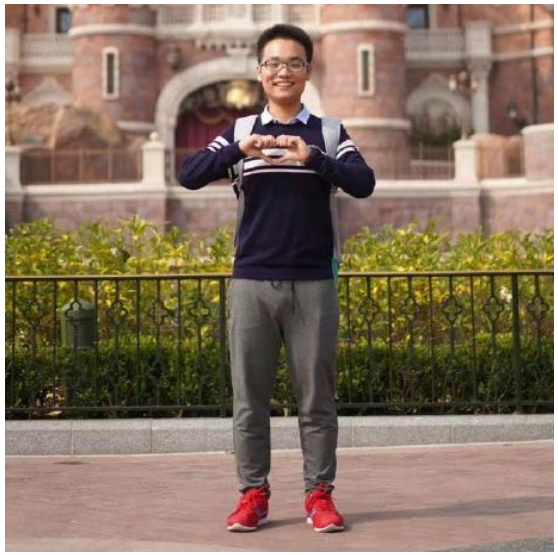


Jeff



Edison

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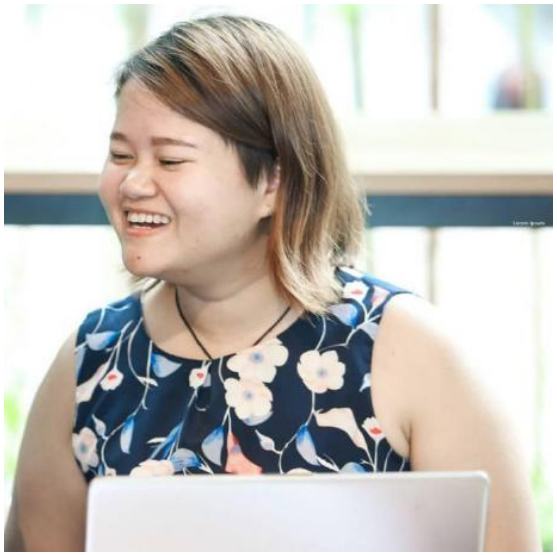

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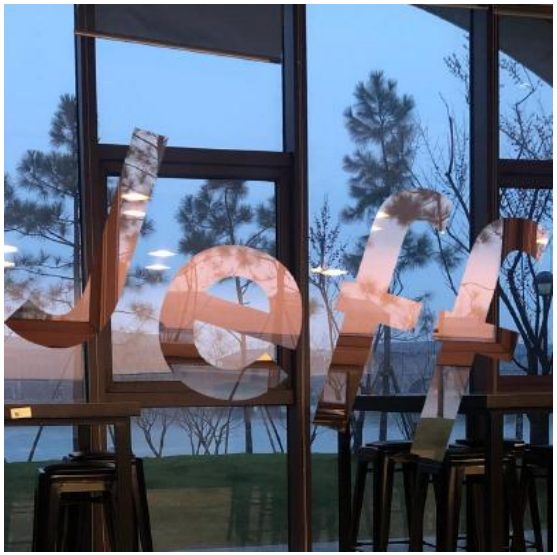

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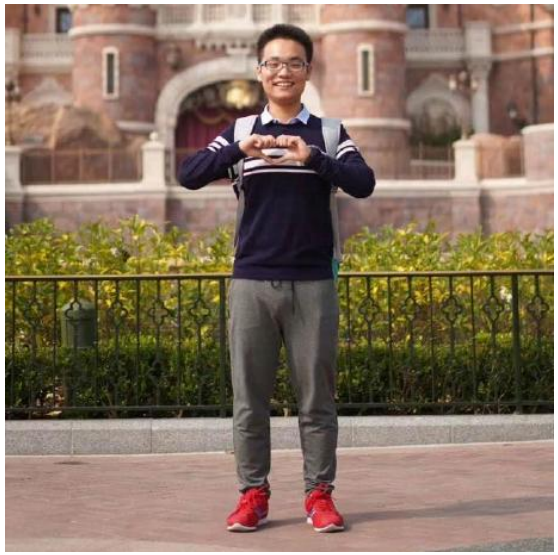

Edison

Who would like to be a class rep this year?

Outline

Thinking about numbers and probabilities

Background

- Thinking about the world in terms of numbers and probabilities is an important skill.
- This skill can be practiced by estimation exercises: You are asked to give a rough estimate of a large(-ish) number.
- Solve these without using the internet, just using your awesome brain (and that of the person next to you).
- Using a calculator is allowed.

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Exercise 1: Family

You share a common ancestor with the person sitting next to you. How long ago did that common ancestor live?

Thinking about numbers and probabilities

Exercise 2: Walking

How long would it take you to walk from Haining to Edinburgh?

What questions do you have?

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Image credits

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