https://s3.amazonaws.com/lowres.cartoonstock.com/animals-scalable-product-mice-cats-slingshot-mdbn347_low.jpg

COM6012: Scalable Machine Learning - Spring 2024

https://github.com/com6012/ScalableML

University of Sheffield

Three Instructors + Guest (X. Liu)

Shuo Zhou

Module leader

Robert Loftin

Tahsin Khan

Four Demonstrators (TAs)

Areeb Sherwani (Head)

Pawel Pukowski

Sina Tabakhi

Xiaolei Xu

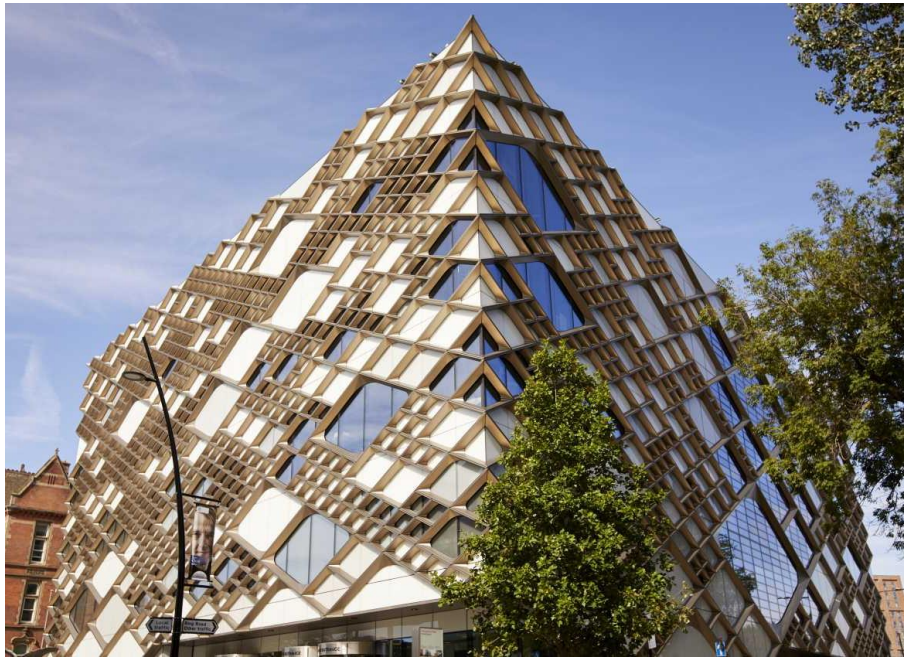
Lectures and Labs

Lecture: Monday 1pm-2pm @ Diamond LT7

Monday, 1:00 PM –2:00 PM

Friday, 11:00 AM –1:00 PM

Lab: Friday 11am-1pm @ Diamond 207



Labs

- **Bring your own laptop**
  - Short-term laptop loans are available on level 4 of the Diamond;

  - Check student handbook to request a long-term loan from IT Services
- Finish required tasks of the labs in this slot!

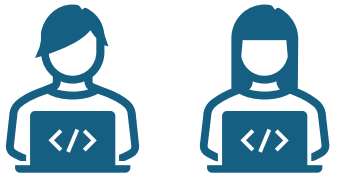
Other Interactions

- Additional sessions
  - Instructor office hour: Mon 4:30-5:30 pm @G25 Regent Court
  - Online Discord help sessions: Wed 2pm-3pm from week 2
- Blackboard discussion board: post your questions to get answered by the course instructors
  - One general forum: general question/feedback
  - Three forums: Shuo, Robert, and Tahsin
    - Get help on lecture/lab contents
    - Ask respective assignment questions
  - Assignment questions:
    - To ask for clarification on assignment questions (i.e. the tasks to do)
    - NOT to ask how to solve the problems, the correctness of a specific solution, or share a possible solution. It is an assessment.
- Direct email to instructors: **personal/private issues only**

Assessment

- Lab exercises: 0% (self assessment)
  - Finish lab exercises by the following Wednesdays
  - Solutions to release on the following Thursdays
- Assignment: 50%
  - Progressive release → start EARLY: complete by 22 March?
  - Deadline: 13:00 on Fri, 3rd May (end of lab)
  - Solution release: 13th May
  - Marking and feedback deadline: 27th May
- Final exam: 50%
  - To be scheduled in exam period (20th May – 8th June)
  - Formal exam on Blackboard: 2 hours (with samples available)

Contents: Very Hands-on



Week	Date	Topic	Instructor
1	05 Feb	Introduction to Spark and HPC	Shuo
2	12 Feb	RDD, DataFrame, ML pipeline, & parallelization	Shuo
3	19 Feb	Scalable logistic regression	Shuo
4	26 Feb	Scalable generalised linear models	Robert
5	04 Mar	Scalable decision trees	Tahsin
6	11 Mar	Scalable neural networks	Tahsin
7	18 Mar	Scalable matrix fact. for collaborative filtering (RecSys)	Robert
8	15 Apr	Scalable K-means clustering	Robert
9	22 Apr	Scalable PCA for dimensionality reduction	Robert
10	29 Apr	Apache spark in the cloud (guest lecture, not assessed)	Xianyuan