

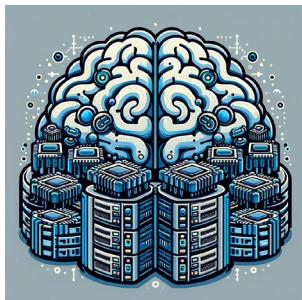
COM6012: Scalable Machine Learning

CS423878

Spring 2026

University of Sheffield

<https://github.com/com6012/ScalableML>



Created by DALL-E

Check-in code:

XX-XX-XX



It seems like a good idea, but is it scalable?

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

Three Instructors



Shuo Zhou
Module lead



Robert Loftin



Tahsin Khan

Four Demonstrators (GTAs)



Christopher J
Noroozi (Head)



Xiaolei Xu



Alicja Szwalek



Xiaozhou Tan

Lectures and Labs @Diamond

Lectures @LT5

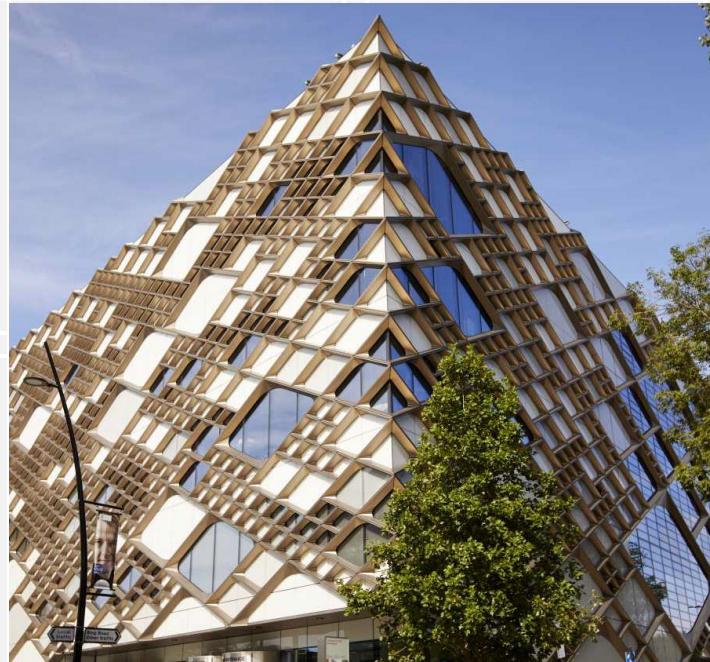
Monday

13:00–13:52

Wednesday

11:00–12:52

Labs @Computer Room 1
(2.01)

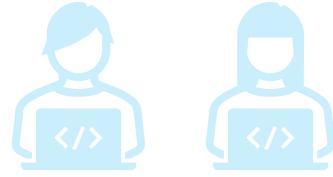


Labs

- Connect to the HPC cluster for lab tasks
- Bring your laptop (optional)
- Finish required tasks of the labs in this slot!



Contents: Very Hands-on



| Week | Topic | Instructor |
|------|--|---------------|
| 1 | Introduction to Spark and HPC | Shuo Zhou |
| 2 | RDD, DataFrame, ML pipeline, & parallelisation | Shuo Zhou |
| 3 | Scalable logistic regression | Shuo Zhou |
| 4 | Scalable generalised linear models | Shuo Zhou |
| 5 | Scalable decision trees | Robert Loftin |
| 6 | Scalable matrix factorisation for collaborative filtering (RecSys) | Robert Loftin |
| 7 | Scalable K-means clustering | Robert Loftin |
| 8 | Scalable PCA for dimensionality reduction | Robert Loftin |
| 9 | Scalable neural networks (assessed by exam only) | Tahsin Khan |
| 11 | Apache spark in the cloud (not assessed) | Tahsin Khan |

Assessment

- **Lab exercises: 0% (self assessment)**
 - Finish lab exercises by the following Mondays
 - Solutions to release on the following Tuesdays
- HPC driving licence (required by IT services)
- **Assignment: 40%**
 - Progressive release, to be handed out by 27th March
 - Deadline: 13:00 on Wednesday, **6th May** (end of lab 10)
 - **Avoid academic misconduct**
 - Solution release: 22nd May
 - Marking and feedback deadline: 29th May
- **Exam (on Blackboard): 60%**

Additional Support

- Instructor office hour: Wednesday 4:15-5:00 pm @G25 Regent Court
- Demonstrator online support (Week 2-9): Friday (Time TBC) via Discord
- Blackboard discussion board
 - Get help on lecture/lab contents
 - To ask for **clarification** on assignment **questions** (i.e. the tasks to do)
 - NOT to ask how to solve the problems.
 - NOT to ask for the correctness of a specific solution or share a possible solution.
- Direct email to instructors: **personal/private issues only**