



COM6012: **Scalable** Machine Learning

Spring 2026

University of Sheffield

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

CS423878



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

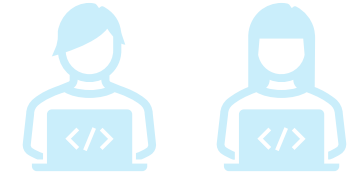


Robert Loftin



Tahsin Khan

Contents



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

Lectures and Labs @Diamond

Lectures @LT5

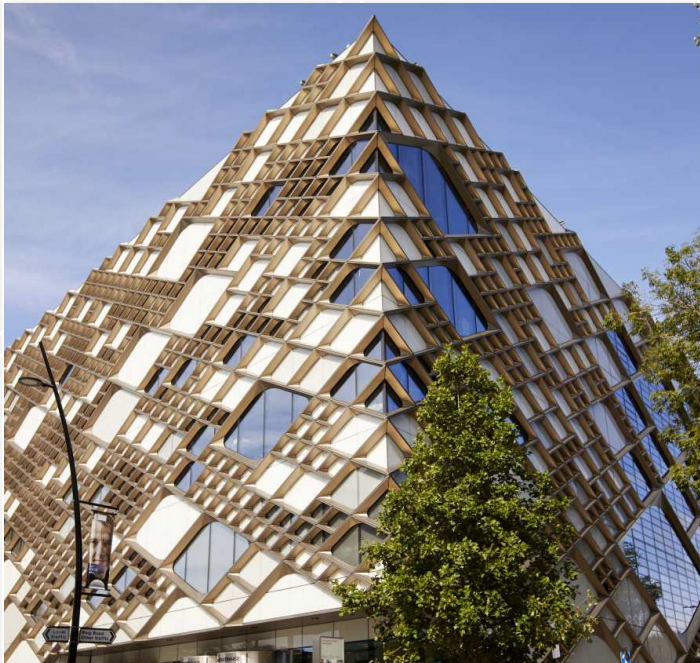
Monday

13:00–13:52

Wednesday

11:00–12:52

Labs @Computer Room 1
(2.01)

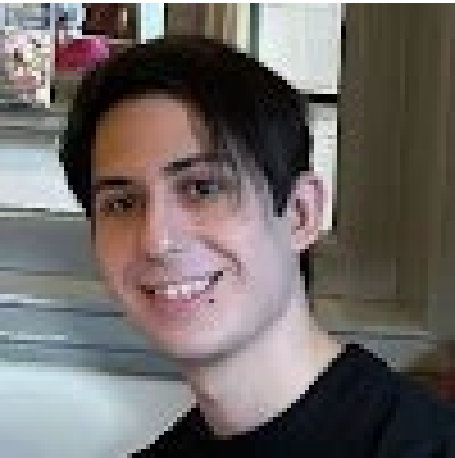


Labs

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



Four Demonstrators (GTAs)



Christopher J
Noroozi (Head)



Xiaolei Xu



Alicja Szwalek



Xiaozhou Tan

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

- 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**
- Instructor office hour: Wednesday 4:15-5:00 pm @G25 Regent Court
- Demonstrator online support (Week 2-9): Friday (Time TBC) via Discord