

# Project Brief: ML@LSE Marketing Data Analysis

LSESU Machine Learning Society

June 2020

## Outline

You will be provided a dataset of statistics (reach, clicks, the text itself) on facebook posts from our society page <https://www.facebook.com/mlatlse> and our email data.

Your task is to produce a report with actionable insights on how to improve our facebook marketing strategy: How can we improve reach? For example:

- What are the seasonal (yearly, monthly, daily) trends / patterns in post views?
- What topics and specific keywords gets the most interest? What's the optimal length of a post?

## Deliverables

The final deliverable will be a **report**. If this is successful, we could approach other societies and offer to do the same and increase the complexity of this research.

You should keep good documentation of your process, methodology, code, and maybe maintain a simple journal of progress. We will use this as a sample for subsequent projects.

## Rough Timeline and Tasks

Estimated effort: 3 hours / week

Team Size: 2 - 3 people

- Clean Datasets, Data Analysis and Visualisation (3 weeks)
- Learn additional techniques: Time Series, Natural Language Processing (2 weeks)
- Produce report (2 weeks)
- \*Stretch Goals: Analyse our use of images (banners) on Facebook and see if there is a simpler way to collect the post/events data (currently downloading manually and making 20 queries).

## Possibly useful resources, techniques, and questions

- Time Series Analysis (Facebook's Prophet Library, Statsmodels). How does engagement change over the academic year and through the years? We need to control for trend and seasonality.
- Natural Language Processing (sklearn). What association is there between the textual content of the post and engagement (you could use a simple bag-of-words + Regression? Are there any topics that are more preferred (you could use topic models such as Latent Dirichlet Allocation)?
- (\*Stretch Goal) Computer Vision Techniques (what association is there between the visual content of the post if there is any and engagement?)