

Project Report 1

This document is to be completed and uploaded by midnight of the day a project report is due.

Each student will receive a grade for the information in this document. Please be sure to check the following instructions when filling out this report.

- All information must be filled out, task information should be descriptive, **complete**, and easy to follow.
- The write-up should be readable and understandable with consistent formatting and style *across all write-ups*.
- Students must demonstrate significant effort over the period that has passed since the last meeting. We discourage procrastination regarding work or not reaching out for assistance in a timely manner.

Quarter-long Project:

Project Name	The Ethicalities and Drawbacks of Recommender Systems
Next Mentor Meeting Date and Time	04/09/2025 2:00 - 2:15
Internal Mentor	Satadisha Saha Bhowmick

Please fill out the following questionnaire after having accomplished the corresponding tasks.

1. Please list the names of all members of your project and their corresponding emails.

William Stingl: wstingl@uchicago.edu

Tony Luo: tonyluo@uchicago.edu

Dayo Oladitan : oeo@uchicago.edu

2. State succinctly what your project problem/question is.

Question: What are the ethical implications of overfitting in recommender systems, particularly within media or social networks?

We are very interested in the mechanisms behind recommender systems and their immense capabilities in identifying tastes, preferences, and even swaying decision-making; however, we found an interesting ethical dilemma, where overfitting in recommender systems for media platforms and social networks can create echo chambers, erode preference autonomy, amplify biases, and even create architectures that encourage addiction. Media systems should be held more accountable to provide more transparent and interactive features for users to have a more symbiotic relationship with their personalized recommender systems.

3. What is the methodology you plan to use/learn to address the question?

I believe a good framework for this project would be a substantial qualitative dive into recommender systems used by popular social media platforms like YouTube, TikTok, and Instagram to understand how current iterations of popular recommender systems are currently being deployed. Additionally, our research can extend to platforms like Netflix, Spotify, and Google as well. After understanding how these algorithms are deployed, we can then find a dataset and refine our own recommender system and analyze how accurate we can make it, while keeping in mind ethical concerns and potential pitfalls these algorithms have in influencing users. Given the time we can mimic the results of the algorithms and glean insight on the much smaller scale.

4. What findings do you expect to come out of this study?

We will understand how the current popular recommendation systems work, such as the algorithms of YouTube, Instagram, and even news media, and the ethical flaws in these systems. There is a philosophy of policing the recommendation system, that the government should control what kind of information should be shown more to people and what should be restricted. The Trump government is losing this policing restriction, but we are not sure if the recommendation system is benefiting people more now.

We believe users should be able to freely choose what type of information they should consume, and the recommendation system should not be tailored by the government to feed whatever it thinks is appropriate to people. Policing of distorted content, such as hate comments and pornography, is necessary to avoid unwanted consequences.

Therefore, our coding could take up a variety of forms. For instance, creating our own recommender systems from scratch and analyzing their performances with datasets on advertisements would be a good inside look into how these algorithms work and perform. Additionally, it would be interesting to devise a framework for increasing transparency and the interpretability of how

recommendations are created and implemented for both users and engineers. There may be limitations to what data is available to make these inferences; however, I am confident that datasets exist for training recommender systems that will potentially allow for important parallels to be drawn with the media ecosystems we aim to critically dissect.

5. What kind of artefact do you aim to deliver? Paper/software/survey with results/demo.

We plan to use PowerPoint/Google Slides to deliver the final results.

Python will be used as the main coding tool, with a bit of SQL.

Aside from the coding focus, a literature review would also be compiled from reading algorithms and sources of concerns of current recommendation systems.

6. Have you created a Github repository for your project? If not, please do so.

Yes

7. Have you made your initial commit to the repository. If not, please do so after adding any relevant research materials and starter code.

Yes

8. Please provide the link for your project repository.

<https://github.com/tonyluocpu/Ethics-Project>

9. Have you added the project mentorship committee to your Github repository? If not, please do so.

Yes

10. In the following table please fill out any initial delegation of tasks among members.

Student Name	Task Description
Dayo	dual focus on coding and reading about relevant articles around (the problems around the current system)
Stingl	Focus on coding, understanding recommender system architecture, and user

	interface experience and interactions with recommender systems.
Tony	Focus on reading about the current recommendation system algorithms, and potential biases they create