Datathon and Machine Learning Competition on Antisemitism
Workshop 3 – Modeling and Evaluation

Presentation available at:
https://github.com/damieh1/datathon_2025/blob/main/Datathon_Workshop-Session-3.pdf

What happened so far?

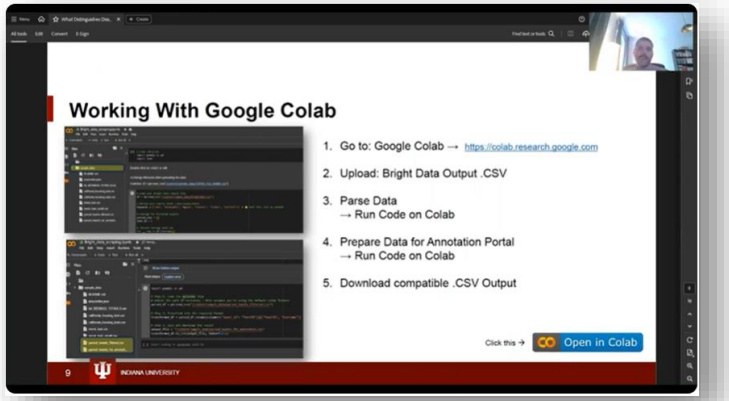
Workshop 1:

- Prof. Jikeli introduced patterns of antisemitism online
- Focus on dynamics before and after October 7
- Conceptual and Theoretical Background

Missed it? Slides are available in the [GitHub repo]

Workshop 2:

- Hands-On Session with Dr. Miehling
- Focus on scraping and annotation
- Working with Colab and BrightData



Missed it? Video Tutorial is available on [YouTube]

Today’s Session

1. Challenge #2 Overview
2. Project Timeline & Final Submission Schedule
3. Meet Your Instructor
4. Introduction to the basics in ML and NLP
5. Q&A

Challenge #2

Use the provided annotated datasets to train a transformer-based hate speech detection system.

Team Setup, Roles & Prerequisites

- Combine multiple pre-annotated datasets (e.g. Twitter, post-Oct 7 X corpora)
- Fine-tune any modern transformer architecture (BERT, DeBERTa, RoBERTa, etc.)
- Submit a full evaluation report: precision, recall, F1, and confusion matrix
- Bonus: test your model on a new manually annotated sample

Access to Key Links

- Challenge Description (PDF)
- Annotation Portal
- GitHub Overview
- Example Code for Model Training and Finetuning

Team Setup, Roles & Prerequisites

- Your trained model or code
- Your evaluation script & metrics
- A short reflection on your training process and model limitations

#2 Challenge: Modeling and Evaluation

Goal: Use our pre-annotated gold standard dataset to build and evaluate a hate speech detection system.

View the full list of recommended models and links here: Recommended Transformer Models

Participants can select and combine the following curated datasets:

- English data:
  - Antisemitism on Twitter: A Dataset for Machine Learning and Text Analytics
  - Antisemitism on X: Trends in Counter-Speech and Israel-Related Discourse Before and After October 7

Each dataset consists of user-generated content annotated for antisemitic hate speech and conspiracy narratives. Annotations were created using an expert-reviewed schema and include agreement between multiple annotators.

#2 Challenge: Modeling and Evaluation

Tasks include:

- Download the (Goldstandard/GroundTruth) datasets.
- Use state-of-the-art (SOTA) transformer models to train and fine-tune a system to detect antisemitic content.

Evaluate your model:

- Report precision, recall, F1-score, and display a confusion matrix.
- List the hyperparameters used for training.
- Conduct error analysis and provide qualitative examples, especially false positives.

Deliverables

- You provide the deliverables in the form of software packages with instructions on how to run them (read-me files). The software must run on any system (Unix or Windows).
- The evaluation committee carries out an independent assessment of the teams' performance.

#2 Challenge: Modeling and Evaluation

Report on Modeling Output:

- Fine-tune a transformer model (e.g., DeBERTa, RoBERTa, BERTweet, HateBERT) using the provided annotated datasets.
- Clearly document the model used and include a summary of your training setup (train/test split, random seed, training strategy).

Code Submission

- Upload or link your training script(s), configuration files, and any preprocessing pipeline.

You can earn up to +10 bonus points by testing your model on unseen data:

- Collect a small new sample of tweets using Bright Data or another method
- Manually annotate 20–30 examples using the same label scheme
- Apply your trained model to this new set
- Report performance and reflect on how well the model generalizes

Workshop Schedule Overview

Date	Focus	Description
July 13	Workshop 1 – Kickoff ☑	Input on antisemitism online & team formation
July 20	Workshop 2 – Challenge #1 ☑	Scraping, annotating, exporting discourse data (Hands-On Session)
July 27	Workshop 3 – Challenge #2	Automated Content Detection: The Basics
August 5	Final Submission Deadline	Submit both challenge deliverables and documentation

Meet the Instructors

Workshop #1

Prof Günther Jikeli

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Workshop #2

Dr Daniel Miehling

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Workshop #3

Prof Damir Cavar

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What's next?

📝 **Work with your Team on Challenge #1**

📅 **Important Dates:**

- Workshop 1 – July 13: Kick-Off & Introduction (Team Assignment & Communication) ☑
- Workshop 2 – July 20: Hands-On Session (Data collection, preprocessing & annotation) ☑
- Workshop 3 – July 27: Introduction to Automated Detection (ML modeling & evaluation) ☑
- Final submission deadline: August 5.

📂 **All materials available at:**

- https://github.com/damieh1/datathon_2025

💬 **Q&A – We'll now open the floor for questions!**

Thanks for your attention

Dr. Daniel Miehling

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