Progress Report 1: Propaganda Detection Application

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Progress with SRTA:

We succeed in building four different binary & multi-label propaganda detection models built using two techniques Transformers and combination of CNN and LSTM layers.

We produced respectable results on evaluation metrics, even though the goal of creating the models was to compare results and provide an answer to the question of which technique was better suited for the task, however, the models still require fine-tuning to further improve the results.

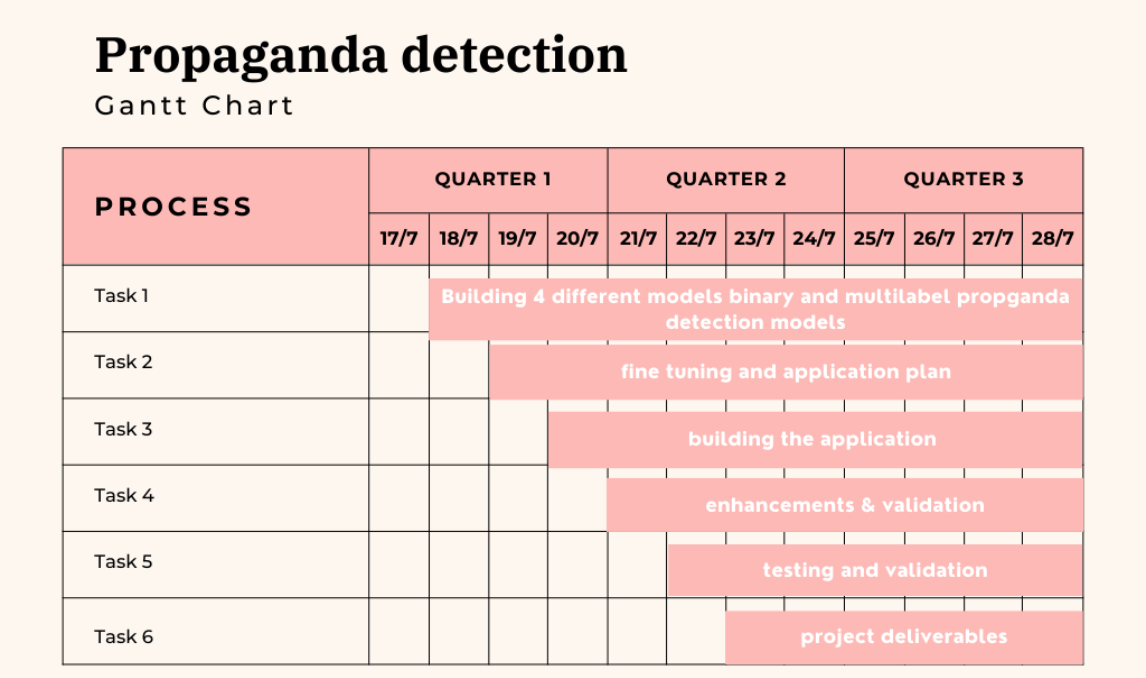
Work done following completion of SRTA:

1. Fine-tuning

As the transformers model was better suited for the task, the application will be built around it, so we start by fine tune both binary and multilabel models using grid search technique.

2. Application building plan

Finished the implementation plan, requirements, use cases and user stories



Requirements

Functional Requirements:

1. Users can input text to analyze for propaganda.
2. Users can upload a file to analyze its content for propaganda.
3. The application will detect whether a text uses any propaganda technique.
4. The application will identify specific propaganda techniques in the text.
5. Appropriate warnings for empty inputs or invalid files.
6. Visual feedback during analysis.
7. Clear presentation of the analysis results.

Non-Functional Requirements:

1. Performance: Efficient analysis to handle large text files.
2. Usability: User-friendly interface with clear instructions.
3. Reliability: Accurate predictions with robust error handling.

Use Cases

1. Analyze Text Input:

Actor: User

Description: The user enters text into a text area and clicks the "Analyze Text" button. The application analyzes the text and displays the results.

Preconditions: The text area contains text.

Postconditions: Results are displayed below the text area.

2. Analyze File Input:

Actor: User

Description: The user uploads a text file. The application reads the file, analyzes its content, and displays the results.

Preconditions: A valid text file is selected.

Postconditions: Results are displayed below the file input area.

User Stories

1. As a user, I want to analyze a piece of text to detect propaganda so that I can understand its content.
- Acceptance Criteria: The user can input text, click a button, and see binary and multilabel predictions.

2. As a user, I want to upload a text file for propaganda detection so that I can analyze longer documents.
- Acceptance Criteria: The user can select a file, and the application reads and analyzes the file content, displaying the results.

3. As a user, I want to receive feedback if my input is empty or invalid so that I can correct it.
- Acceptance Criteria: The application provides warnings for empty or invalid inputs.

Additional Features to consider:

- Provide visual representations of the results, such as charts or graphs.
- Allow users to adjust analysis parameters, such as the prediction threshold.
- Enable users to export the analysis results to a CSV or PDF file.
- Maintain a history of analyzed texts/files for user reference.