1. References

**Gantt Chart**

Creating a Gantt chart for a PhD research project on "Enhancing Sentiment Analysis Accuracy through Contextual Understanding in Social Media Texts" involves breaking down the project into work packages and scheduling the timing and deliverables for each package. Below is a simplified Gantt chart outlining the timeline and deliverables for the key work packages of the research project:

| **Work Package** | **Timing** | **Deliverables** |
| --- | --- | --- |
| 1. Data Collection and Preprocessing | Month 1 - Month 3 | - Collect diverse social media texts <br> - Preprocess data |
| 2. Feature Extraction and Representation | Month 4 - Month 6 | - Experiment with feature representations <br> - Evaluate effectiveness |
| 3. Model Development and Training | Month 7 - Month 9 | - Design and implement sentiment analysis models <br> - Train models |
| 4. Contextual Understanding Integration | Month 10 - Month 12 | - Integrate contextual embeddings <br> - Fine-tune embedding models |
| 5. Model Evaluation and Optimization | Month 13 - Month 15 | - Evaluate model performance <br> - Optimize hyperparameters |
| 6. Transfer Learning for Domain Adaptation | Month 16 - Month 18 | - Explore transfer learning techniques <br> - Assess generalization |
| 7. Integration and Validation | Month 19 - Month 21 | - Integrate components into framework <br> - Validate performance |
| 8. Thesis Writing and Finalization | Month 22 - Month 24 | - Write thesis <br> - Prepare for defense |

This Gantt chart provides a general overview of the project timeline, with each work package spanning approximately three months. Deliverables for each work package include specific tasks such as data collection, preprocessing, model development, evaluation, and integration. The final three months are dedicated to thesis writing and finalization, culminating in the preparation for the thesis defense. Adjustments to the timeline and work packages may be made as needed based on project progress, resource availability, and unforeseen challenges encountered during the research process.

This Gantt Chart provides the outline of how research must be conducted. Each work package designed include specific tasks, and in total 10 tasks have been formulated which cover the successful completion all work packages described in this report. The time span of each task has been mentioned clearly. The table 1, named “Project Work Plan” lists all the tasks with timespans allotted and the deliverables of each. The table 2, named “Diagrammatic Work Plan” provides the diagrammatic view of the work plan.