

Objectives

- This is to test each candidate's unique problem solving skills which applies to the day-to-day tasks of an AI Engineer in Sprout AI Labs (SAIL)
- By doing the demo, this tests how well they can present their work with stakeholders whether in tech and non-tech.

Task Definition

- We want a model which can identify the general sentiment of the given query. This can be useful for knowing how our customer feels towards a product or a situation.
- Specifications:
 - The Python script should be able to take in a user input then output the sentiment and confidence score
 - sentiments: "positive", "neutral", "negative"
 - confidence score up to 2 decimal places
 - example
 - Input: "I hate going to that restaurant"
 - Output: {"model_output": "negative", "confidence_score": 98.42}
 - English queries only
 - A separate CSV file will be given to test the model's accuracy. The output should be included in the repository to be submitted. The accuracy will be presented during the demo.
 - Input
 - CSV with ff. columns: text, expected_sentiment
 - filename: *sentiment_test_cases.csv*
 - Output
 - CSV with ff. columns: text, expected_sentiment, model_output, confidence_score
 - filename: *output_sentiment_test.csv*
 - Clean code practices will also be evaluated in the code review

Constraints

- Programming Language: Python only
- ML framework: Any from TensorFlow, Pytorch, HuggingFace etc. as long as it's using Python as backend
- Models: Allowed to use open source models OR train your own (no cloud resource will be provided for this)
- Accuracy: Ideally this should be >80% so the model with the highest accuracy should be presented
- Test cases: Test is done on all the given test cases and should not be sampled. Preprocessing is done as necessary.

Test Cases

- Use "sentiment_test_cases.csv" from this drive
- This is a modified version of the Sentiment140 - Test dataset containing 489 test cases.

Expected Output

- Repository for scripts/outputs (public github repo)
 - All scripts used for training (only if applicable), inference, evaluation (taking in csv input and producing output), metrics computation
 - CSV output
- Slides for demo

Content Guidelines:

 - Model used and methodology
 - justify the use of the model
 - why is it the best for this use case
 - Quick code walkthrough
 - Demo of working inference
 - Test cases output with metrics (accuracy etc.)
 - Possible future improvements
- (optional) Additional slides/demo to showcase personal projects

Task Submission

- Submission will be done through email
- Maximum of 4 calendar days to complete the task and submit the expected outputs
 - e.g. If the task was given on Monday, submission will be on Friday
 - If it falls on a weekend, an email is still expected which contains the requirements but presentation/interview will still be scheduled on a weekday
- Allowed to submit before the deadline for faster interview process