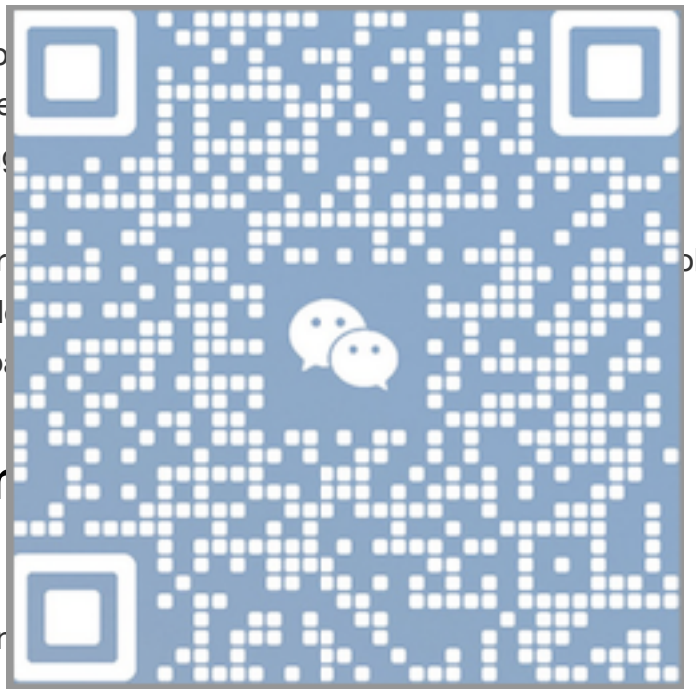
CS135 Project A: Classifying Sentiment

1. Overview

- **Project Timeline**
  - Release on Thu 9/26
  - Form partners by Sun 10/06
  - Due on Thu 10/17
  - Intermediate deadlines for Problem 1 and Problem 2 code/experimentation and writeup
- **Team Formation**
  - Encouraged to wo
  - Fill out ProjectA Te
  - If need help findin
- **Work to Complete**
  - One semi-open pr oblem (Problem 2)
  - Practice ML devel
  - Maintain leaderbo



2. What to Turn

- **PDF Report**
  - One report coverin
  - Manually graded
  - Mark subproblems via Gradescope annotation tool
- **ZIP Files of Predictions**
  - One ZIP file for Problem 1 and one for Problem 2
  - Each contains a single plain text file with float probabilities for test set predictions
- **Reflection Form**
  - Each individual turns in a reflection form after completing the report

3. Starter Code and Code Restrictions

- **Starter Code Repo**
  - https://github.com/tufts-ml-courses/cs135-24f-assignments/tree/main/projectA

    - Provides scripts to load data, but no other code
- **Code Usage**
    - Can use any Python package
    - Understand and cite third-party code

4. Background

- **Dataset**
    - From research work in KDD 2015 paper
    - Thousands of single-sentence reviews from imdb.com, amazon.com, yelp.com
    - Training set of 2400 examples, test set of 600 examples in CSV format
    - Binary labels indicating sentiment
- **Performance Metric**
    - Area under the RO

5. Problem 1: E presentation

- **Background on Bag-**
    - Represent docum
    - Many design deci
- **Goals and Tasks**
    - Develop BoW repr
    - Experiment with p
    - Use LogisticRegre
    - Use hyperparamet
- **Report Sections**
    - 1A: Describe BoW design decisions
    - 1B: Describe cross-validation design
    - 1C: Describe hyperparameter selection for classifier
    - 1D: Analyze predictions of best classifier
    - 1E: Report test set performance on leaderboard

6. Problem 2: Open-ended challenge

- **Goals and Tasks**
    - Use any feature representation, classifier, and hyperparameter selection procedure
    - Try various methods to improve performance

- **Report Sections**
  - 2A: Describe feature representation
  - 2B: Describe cross-validation or equivalent process
  - 2C: Describe classifier and hyperparameter search
  - 2D: Analyze errors of best classifier
  - 2E: Report test set performance on leaderboard

7. Grading

- **Overall Grade Breakdown**
  - 87%: Report performance
  - 10%: Leaderboard submissions
  - 3%: Completion o
- **Leaderboard Submiss**
  - Score between 0.0 n to top submissions
- **PDF Report**
  - Points allocated a
- **Hyperparameter Sele**
  - Figure and paragra r selection