CS 175, Project in Artificial Intelligence
Winter 2022

Final Project Reports

Padhraic Smyth
Department of Computer Science
Bren School of Information and Computer Sciences
University of California, Irvine
# CS 175 Winter 2022 Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Student Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 3</td>
<td>Lecture: Introduction; class projects</td>
<td>Lecture: Text Classification 1</td>
<td>Work on Assignment 1</td>
</tr>
<tr>
<td>Jan 10</td>
<td>Lecture: Text Classification 2</td>
<td>Lecture: Neural Network Models 1</td>
<td>Work on Assignment 2</td>
</tr>
<tr>
<td></td>
<td>Assignment 1 due, Tuesday 11:59pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan 17</td>
<td>No class (university holiday)</td>
<td>Lecture: Project Proposals</td>
<td>Form teams; work on project proposal</td>
</tr>
<tr>
<td></td>
<td>Assignment 2 due, Tuesday 11:59pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan 24</td>
<td>Lecture: More on Neural Networks</td>
<td>Lecture: Evaluation Methodologies</td>
<td>Submit proposal; Begin project</td>
</tr>
<tr>
<td></td>
<td>Project proposal due, Tuesday 11:59pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan 31</td>
<td>Office hours (no lecture)</td>
<td>Office hours (no lecture)</td>
<td>Work on project</td>
</tr>
<tr>
<td>Feb 7</td>
<td>Office hours (no lecture)</td>
<td>Office hours (no lecture)</td>
<td>Work on project</td>
</tr>
<tr>
<td>Feb 14</td>
<td>Office hours (no lecture)</td>
<td>Short lecture: Discuss progress reports</td>
<td>Work on project</td>
</tr>
<tr>
<td>Feb 21</td>
<td>No class (university holiday)</td>
<td>Short lecture: Discuss presentations</td>
<td>Work on project; submit progress report</td>
</tr>
<tr>
<td></td>
<td>Progress report due, Tuesday=11:59pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb 28</td>
<td>Project Presentations (in class)</td>
<td>Project Presentations (in class)</td>
<td>Work on project; make short project</td>
</tr>
<tr>
<td></td>
<td>Upload material by noon Monday</td>
<td>Upload material by noon Wednesday</td>
<td>presentation</td>
</tr>
<tr>
<td>Mar 7</td>
<td>Short lecture: Discuss final reports, +</td>
<td>Office hours (on Zoom)</td>
<td>Finish project, write final report</td>
</tr>
<tr>
<td></td>
<td>Office Hours (on Zoom)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar 14</td>
<td>Final project reports due Monday 9am</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Course Grading

<table>
<thead>
<tr>
<th>Activity</th>
<th>Grade Percentage</th>
<th>Date Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>10%</td>
<td>Tuesday Jan 11th</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>10%</td>
<td>Tuesday Jan 18th</td>
</tr>
<tr>
<td>Project Proposal</td>
<td>20%</td>
<td>Tuesday Jan 25th</td>
</tr>
<tr>
<td>Weekly Logs</td>
<td>10%</td>
<td>Weeks 8 to 10</td>
</tr>
<tr>
<td>Progress Report</td>
<td>20%</td>
<td>Tuesday Feb 22th</td>
</tr>
<tr>
<td>Presentation/Demo</td>
<td>5%</td>
<td>Feb 28, Mar 2</td>
</tr>
<tr>
<td>Final Report</td>
<td>25%</td>
<td>Monday Mar 14th</td>
</tr>
</tbody>
</table>
FINAL REPORTS AND CODE SUBMISSION
Final Reports

- Due 9am Monday March 14th

- Similar to Progress Report
  - Template online on class Website
  - Should have more details and more complete than progress report
  - Greater emphasis on experiments, results, insights
Final Submissions

Submit everything to Canvas

Required for Each Team

1. Final project report (PDF)
2. Zip file with
   1. a directory of source code src/ for your project
   2. a script (e.g., .py or Jupyter notebook) to illustrate your project
   3. Sample data set(s) or stored models, if needed for your script
   4. README.txt file with lists of
      - libraries/packages used
      - online publicly-available code used
      - code that you wrote with brief description

Required for Each Student (in addition to Team Report)

Individual contribution report
Documented Source Code (in /src)

**Source code that you wrote** for this project (functions and scripts)

- If the code is modified from somewhere else, clearly indicate the original source
- Don’t include code you didn’t write:
  - import them into your script or indicate in comments how to download them
- Use your own judgement on whether to submit code for functionality you ended up not using, or experimental code
- we mainly we want to get an idea of what you worked on

**Code should be documented**

- At the top of each source code/script file write comments explaining that file's purpose
  - Feel free to group functions within files
  - Put comments inline in the code
Example of README.txt file

# This is an example of what your README.txt file should look like.

# Mention the external libraries your team used (libraries that are not default to python but
# need to be downloaded for your code to run), with the URL for each
Libraries used:
  • XXX (URL1)

# List the publicly available code(s) you used in your project. Please provide the URL for the
# code and mention if you modified the code or not. If you modified the code, please mention
# the number of lines your team modified or added.
Publicly available codes used:
  • YYY (URL2)
  • ZZZ (URL3). Modified/added approximately 50 lines of code

# List the code(s) written entirely by your team. Please roughly mention how
# many lines of code is present in each and provide a brief description (for each) of what the
# code does.
Scripts/functions written by our team:
  • AAA.py Converts tweets into bag of words format
  • BBB.py Identifies the top K most important features in a tree-based classifier
Individual Contribution Report

• Each team member individually submits a summary (about ½ page) of what their individual contribution to the project was.

• Provide a list of what you did:
  – doing research, data gathering, preprocessing, exploratory data analysis, software development, running/tuning models, conducting experiments, analyzing results, generating figures, writing reports, etc
  – provide details where you can

• Provide an estimate (as a percentage) of how much work you think each person (including you) did on the project

• Each individual must write their own independent document describing their own contributions.
Contents of Final Report

1. Project Summary

2. Data Sets

3. Technical Approach

4. Experimental Results and Evaluation

5. Lessons Learned and Insights

6. Appendices
   1. Software
   2. Additional Results
Grading of Final Reports and Code

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report: Technical Quality</td>
<td>10</td>
</tr>
<tr>
<td>Report: Writing Quality</td>
<td>5</td>
</tr>
<tr>
<td>Report: Insights</td>
<td>5</td>
</tr>
<tr>
<td>Source Code and Documentation</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>25</td>
</tr>
</tbody>
</table>

Individual contribution: points may be deducted from an individual’s score. The default (and mostly likely) outcome is that no points will be deducted for a student.
Grading Categories

• Technical Quality
  – Overall technical quality of the project
  – Is the project reasonably complex or is it too simple?
  – Does the team understand the methods and algorithms being used?
  – Were good experiments performed and results interpreted appropriately?

• Lessons Learned and Insights
  – What did you learn? What insights did you come away with?
  – Good projects are not just about running algorithms and collecting numbers, but also about interpreting the results and providing insight
      • E.g. not just “method A is more accurate than B” but also why A is more accurate
      • E.g., not just “method C did not work”: do you have any ideas why?
      • In some cases this will require description of “negative results”. Negative results are fine as long as there is some insight/discussion of what the reason might be.
Grading Categories

- **Writing Quality (Clarity)**
  - Well organized, each section builds on the preceding section
  - Good use of figures and graphs
  - Goals, methods, results are clearly explained: reader is not guessing
  - Appropriate level of detail (not too much...but some details are good)

- **Source Code and Documentation**
  - Provides more detail about what you worked on
  - Quality (e.g., clear comments) is more important than quantity

- **Individual Contribution**
  - Each student should be clear about what they contributed
Advice on Writing your Final Project Report

• Make sure you have enough time for writing (don’t spend all your time coding)
  – Feel free to re-use and adapt text/figures from your earlier reports

• If your results did not turn out as well as you had hoped......
  – Don’t panic! Clearly describe what you did and your results,
  – provide as much insight as you can into why the results turned out the way they did
    • e.g., if the accuracy/quality is low try to explain what you think is causing this

• General aspects of writing to keep in mind
  – Figures can be very useful
  – Short sentences are often better than long rambling ones
  – It’s good to have details...but don’t bury the reader...have a structure and a narrative
  – If you have lots of results you don’t need to report everything: pick the highlights!
  – Read what you have written and check and edit it – good writing is an iterative process

• Overall:
  – your reports should be along the lines of a “mini” research paper
  – Should be self-contained, a report you could hand to a potential employer for example
## CS 175 Winter 2022 Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Student Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 3</td>
<td>Lecture: Introduction; class projects</td>
<td>Lecture: Text Classification 1</td>
<td>Work on Assignment 1</td>
</tr>
<tr>
<td>Jan 10</td>
<td>Lecture: Text Classification 2&lt;br&gt;Assignment 1 due, Tuesday 11:59pm</td>
<td>Lecture: Neural Network Models 1</td>
<td>Work on Assignment 2</td>
</tr>
<tr>
<td>Jan 17</td>
<td>No class (university holiday)&lt;br&gt;Assignment 2 due, Tuesday 11:59pm</td>
<td>Lecture: Project Proposals</td>
<td>Form teams; work on project proposal</td>
</tr>
<tr>
<td>Jan 24</td>
<td>Lecture: More on Neural Networks&lt;br&gt;Project proposal due, Tuesday 11:59pm</td>
<td>Lecture: Evaluation Methodologies</td>
<td>Submit proposal; Begin project</td>
</tr>
<tr>
<td>Jan 31</td>
<td>Office hours (no lecture)</td>
<td>Office hours (no lecture)</td>
<td>Work on project</td>
</tr>
<tr>
<td>Feb 7</td>
<td>Office hours (no lecture)</td>
<td>Office hours (no lecture)</td>
<td>Work on project</td>
</tr>
<tr>
<td>Feb 14</td>
<td>Office hours (no lecture)</td>
<td>Short lecture: Discuss progress reports</td>
<td>Work on project</td>
</tr>
<tr>
<td>Feb 21</td>
<td>No class (university holiday)&lt;br&gt;Progress report due, Tuesday 11:59pm</td>
<td>Short lecture: Discuss presentations</td>
<td>Work on project; submit progress report</td>
</tr>
<tr>
<td>Feb 28</td>
<td>Project Presentations (in class)&lt;br&gt;Upload material by noon Monday &lt;br&gt;Upload material by noon Wednesday</td>
<td>Project Presentations (in class)</td>
<td>Work on project; make short project presentation</td>
</tr>
<tr>
<td>Mar 7</td>
<td>Short lecture: Discuss final reports, + Office Hours (on Zoom)</td>
<td>Office hours (on Zoom)</td>
<td>Finish project, write final report</td>
</tr>
<tr>
<td>Mar 14</td>
<td>Final project reports due Monday 9am</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Questions?