

Semester Project Template

1. Title Page - title of project, author(s), date, and a brief (300 words or less) abstract.
2. Overview - provide an overview of the dataset, your motivation, and the problem you would like to solve (what questions do you hope to answer?). This section is somewhat speculative – you should be realistic about what is possible (e.g., “I will predict the stock market average for the next 10 years” is probably out of reach), but you shouldn’t be afraid to reach for ambitious outcomes. What you write in this section is not a promise that I will hold you to, but a starting point for discussion of next steps.
3. Related Work (graduate students only) - research and describe what others have done related to your project, and how your work will be unique. This may be something you are basing your work off of, or what others have attempted in the same problem space. Provide three or more references as appropriate.
4. Data acquisition - describe in some detail the dataset(s) you intend to work with. What data elements exist, how are they structured, what features you hope to extract, etc. This is also the place to explain where the data came from, and any limitations on your use/sharing of the data or your work on the data.
5. Preprocessing - this section includes your findings from initial data cleansing, exploratory statistics and visualizations, and additional information on reduced features selected through dimensionality reduction (if appropriate).
6. Model Selection - identify and describe the algorithm(s) used and why; this can be using the techniques we discuss in class or other machine learning algorithm(s) of your choice.
7. Results and Evaluation - report the conclusions and results of your analysis including validation metrics, techniques, and visualizations.
8. Ethics (graduate students only) - explore ethical and societal considerations related to your project.
9. Future Work (graduate students only) - explain what potential next steps or what other questions could be explored based on the results of your work, or given more time.