

CSE 4502/5717 Big Data Analytics, Spring 2018
A note on projects and project reports

1 Different Kinds of Projects

There are three kinds:

1. One could choose a problem of interest, perform a literature search to identify the best known algorithms for solving this problem. Followed by this, develop a novel algorithm for solving this problem and through analysis show that your algorithm is (asymptotically) faster than the current best known algorithm.
2. Choose a problem; Perform a literature search to identify the best performing three or four algorithms; Implement these algorithms and compare them using different datasets; For comparing these algorithms you could use a variety of metrics including run time, memory usage, and accuracy (if relevant). You are welcome to use existing codes (e.g., from the authors of the algorithms you have chosen).
3. This is similar to the second kind. The only difference is that you may not compare them experimentally. You'll be writing a survey article summarizing these algorithms and theoretically comparing them.

2 Project Report

The project report will describe the work you have done. It could be around 10 pages long. This report will include the following (minimum) information:

1. Problem statement
2. Importance and applications of the problem
3. A survey of known algorithms, including brief descriptions of these algorithms and their time (and space) complexities
4. An experimental comparison of the best known algorithms (relevant for Type 2)
5. A theoretical comparison of these algorithms (relevant for Type 3)
6. Your new algorithm and its analysis (relevant for Type 1)
7. Your conclusions and recommendations (on which algorithm(s) are the best and under what conditions)