**Project:** 30% (%10 will be Presentation/Poster.)

You can pick a project type from below.

* **Reading Project**
  + Pick an interesting research topic.
  + Find a few (expected to be at least five but can be mutually considered) interesting but challenging theoretical papers on this coherent topic. The papers should be the recent ones.
  + Write up an exposition that synthesizes, and compares their ideas.
  + You will be graded on how much clearer/more informative your exposition is than that of the original papers.
  + While you need not give all proofs in full detail, the reader should come away with a good understanding of why it all works.
  + The comparison should include all important aspects (time and space complexity of algorithms, implementation difficulty, authenticity, and etc.)
* **Implementation Project**
  + We will study many algorithms, and their performances. Their behavior against the conditions may be surprising when implemented.
  + Grab one research topic that interests you, and pick one of the challenging theoretical papers on this coherent topic
  + Implement the algorithm and test it with various conditions.
  + This kind of project will be graded on how well you explain the algorithm you are implementing, correctness of your implementation, what interesting test cases you ran them against, and how well you interpret the results.
* **Design Project**
  + In this project type, you will develop and design a new algorithm.
  + Grab one research topic that interests you.
  + Make a through survey on the topic, and find out a possibility to develop a solution. It may be more efficient or may be simpler than an existing solution.
  + If would be better if the solution is for a real problem, but if it cannot be for real problem you can add some imaginary dimension to the problem and develop an algorithm to solve the problem with additional dimension.
  + You will presumably need to do some background reading; there is no set lower bound on it so long as you are able to advance beyond what is known.
  + This kind of project will be graded on the correctness and success of the developed algorithm, and extent of the improvement on previous results.
* ***Presentations***

Presentation quality will be a factor in your grade.