

COMP 340 - Research Project

Spring 2014

Task

For this research project you must:

1. delve into one of the algorithmic problems found in Skiena's Hitchhiker's Guide and familiarize yourself with the problem
2. Pick an area of focus for the problem and do some deeper research on that area
3. Prepare a survey-style paper about your focus area. Papers should be no longer than 6 pages.
4. Give a 10-12 minute presentation about your findings

The goal here is not just to read and report on Skiena's overview of the problem, but to use his overview as a jumping off point for a more focused, in-depth research area. Skiena's overview provides context, background material, and a place to start.

Topic Focus

There are a lot of ways that you can focus your research. The key is to choose a very specific topic and not something broad. Here are some possible things you can do as a focus:

- Benchmark a set of existing algorithm implementations
- Study source code of *credible* implementations in multiple languages/paradigms and evaluate ease of implementation
- Implement an algorithm from scratch, profile and benchmark your implementation against existing implementations
- Implement an algorithm in several languages/paradigms and compare ease of implementation
- Survey progress on the problem since publication of the Skiena's overview
- Deeper inspection of specific algorithm including close examination of primary source and historical context
- Close examination of a specific application and its challenges with respect to the algorithm(s)

You are not limited to these options. If you have another idea as to how you'd like to focus your research, feel free to discuss it with the instructor.

Timeline

April 1st	Topic Claiming period Opens
April 9th	Topic and focus must be approved
April 17th	Annotated Bibliography Due
April 27th	Papers Due by end of day
April 30th	Reading Responses Due
April 30th and May 2nd	Presentations

Topics must be unique to each student and will be claimed on a first come first serve basis beginning on April 1st. Your annotated bibliography should include all of the sources you believe you'll use for your paper. Annotations should be no more than a paragraph, should give a high-level overview of the source, and highlight its importance and/or relevance to your topic and focus area. **Digital copies of your paper should be mailed to the class mailing list by the date given above.** You'll be expected to read everyone else's paper before presentations start and fill out a basic peer-review form before presentations begin. Presentations should utilize slides or some kind of visual aid. Be prepared to answer questions regarding your topic and your paper.