1 Major Changes

I’m still satisfied with the overall goals of my project, and relatively optimistic about their feasibility, although I feel like I will not be able to know that for sure until sometime next semester. I don’t need any resources.

2 Accomplishments So Far

I have read through the first two sections of the lecture notes at http://sumofquares.org/public/index.html for Boaz Barak and David Steurer’s course on the Sum of Squares algorithm taught at Harvard and MIT, which were recommended to me by Professor O’Donnel as a thorough introduction to the Sum of Squares algorithm.

I have read through Professor O’Donnel’s most recent manuscript (currently unpublished) proving lower bounds on the complexity of refuting a random CSP with a sum of squares algorithm, at a high level, although I will need to do more reading on some of the underlying math to be able to more fully grasp some of the technical details.

I haven’t really met my first milestone yet, mainly because the reading has been more dense and slow going than I was hoping. I plan to spend time over winter break finishing reading I was hoping to do so that I will hopefully be on pace to follow the rest of my milestones for 15-400.

3 Surprises

Reading research papers is hard and slow. I need to give myself more time for it than I expected, and perhaps be more selective about what papers I try to really understand, and which ones I just need to get the key ideas from.

It’s very easy to fall behind in communicating with faculty when you don’t feel like you’re accomplishing enough. I need to establish a clear plan for meeting with O’Donnel, and hopefully his PhD students from the beginning of next semester.

4 Revisions

I want to include logistical goals in my first milestone for next semester, since I wasn’t really thinking about them this semester. In particular, I want to develop a clear plan with Professor O’Donnel by the first week of next semester with regards to when and how long we’ll meet, how his PhD students will be involved, what his goals/expectations for the whole project are, and what I should do if things seem to be getting off track going more poorly than expected.

I may also need to add more time for literature review into my milestones for next semester, and perhaps condense some of the wring bits accordingly, but I’ll see how much reading I can get done over break first.