Journal of Samantha Hampton for Spring Semester 2015

1 1-28-2015; Reading 'Algorithms in High Dimensions'

This week I have read section 1 and the first part of section 2 of Algorithms in High Dimensions, Beylkin and Mohlenkamp. Kenny and I met to discuss the paper and the presentation we will give about the paper. It was decided Kenny will present section 1 and I will present the first part of section 2.

I think the main idea of the first part of section 2 is the separated representation of a vector. However, I do not understand what is meant by $F_i^l(j_i)$ for $l = 1, \ldots, r$ in the definition. Specifically, I am unclear about what is meant by the power l and what does it does to the vector F_i.

For next week I will read more of section 2 of 'Algorithms in High Dimensions'. I plan to meet again with Kenny to discuss the paper and prepare for our next presentation.

2 2-4-2015; Continuing Reading 'Algorithms in High Dimensions'

I have read all of section 2 of this paper. Nate was right that it only took a few hours to read the first two sections. But now I need to try and understand what I've read.

Kenny and I plan to meet early next week to discuss the final presentations. We did not meet this week.

I think this section is primarily focused on separated representations found for different functions/operators. It discusses some advantages and disadvantages of this representation in different cases. For example, we can trade an increasing condition number for a lower separation-rank for problems in high dimension. In other cases, like in the sine of a sum example, some 'obvious' separated representations can be inefficient.

What would $A(j_1, j_1'; j_2, j_2')$ look like. I am also not sure what is meant this notation in general.

3 2-11-2015; Finishing 'Algorithms in High Dimensions'

I have read all of section 2 of this paper a few times. I plan to present section 2.1-2.1.2 on Thursday to the group. Question: In (2.11), what is $\mathcal{I}_i$?

For my next project I would like to begin learning Python.

4 2-18-2015; Fancy Tool Tips

I found a document that showed some of the features of the Fancy Tool Tips package in LaTex. I noticed some of these features were not working in my browser (Google Chrome). It appears it is meant to be read in Adobe. After I finish my exams next Wednesday, I plan to further examine this package and find others that will work in Internet browsers.

5 2-25-15: Fancy Tool Tips

This week I have looked into the package fancytooltips. I wanted to create my own document with the hover feature, but I ran into some problems using the package. This is also the only package I have seen reference that has the hover feature. But this functionality does exist, and when used seems to be very nice.

On this link, you will find an example of what you are trying to accomplish:

`http://www.ctan.org/tex-archive/macros/latex/contrib/fancytooltips/examples`

Here is where you can download the package:

`http://www.ctan.org/pkg/fancytooltips`

Problems I have found: You have to preview the .pdf file in adobe, and I believe only certain tex compilers will compile the package (texlive, miktex).

6 3-11-15: The End

I have decided to no longer be a part of this project. I feel like I need to pursue a project that is oriented towards Statistics, as I will likely apply for jobs in this area next year. I would like to thank Dr. Mohlenkamp for allowing me to be apart of this project.