

Journal of Jyothsna Jakka, Winter 2008

March 17, 2008

Week 1: January 10 to 16

Getting Started with Research

First week after the vacation was cool. I didn't have much work to do. It was just scheduling meetings and going through previous work. Our goal for this quarter is to get started from the point where we left in Fall quarter, verify if it is the right method, check for duplicates and do it for general rank.

Week 2: January 16 to 22

This week I was preparing for the presentation and making slides. I tried to read the New Multi Linear Algebra paper, which was modified from last quarter. Some of the stuff is still confusing to me. I am trying to think of how to start with the task which I was assigned last week i.e. to look for (-1) terms in the determinant. But I don't understand how to start with it or where to start.

Week 3: January 22 to 29

New Multi Linear Algebra

We started to work on $(C + D)[k]$ using the new method which Chelsie was talking about in the presentation. With the help of the example she showed we were able to figure out how to solve the sum of determinants. We tried to write all the terms in $C[0]$, $C[1]$ and $C[2]$ etc. for the rank 2 case and it came out well. We are supposed to work on $D[k]$ with i 's and j 's interchanged and also work on the final formula.

Week 4: January 29 to February 6

Working on rank 2 case using New Multi Linear Algebra

Having successfully worked out individual terms of $C[k]$ and $D[k]$ this week we worked on different combinations of these terms, i.e. $C[0]D[1]$, $C[1]D[2]$, $C[2]D[2]$..., which we got from last quarter. We worked out all those terms then the next task was to somehow arrange all these terms using

different arithmetic operations so that it is equivalent to left hand side which is $(C + D) + |(C + D)|I$. Prashanth has done it for the (1,2) position and we have to check if this combination works for other positions, i.e. (1,1), (2,1) and (2,2).

Week 5: February 6 to February 12

We tried to equate the terms again and found that the combination which we thought will work is no longer working. There needs to be a few more terms included in the final formula. We started working on the report including what we got for the rank 2 case using new multi-linear algebra. We are almost done with most of it and plan to complete it by this weekend.

Week 6: February 13 to February 20

Writing Report

This week we finished the report. Dr. Martin has suggested a few changes in the report. We made the necessary changes and modified it. The next step is to work on the $(C + D)[2]$ case.

Week 7: February 20 to February 27

We tried to solve for $(C + D)[2]$ in the same way as we solved for $(C + D)[1]$. We tried to find all possible combinations and equate the terms. But this time our approach did not work. The next step is to think how to solve it.

Week 8: February 28 to March 5

This week we had to give a presentation on whatever we have done till now. So we worked on slides and prepared for the presentation.

Week 9: March 5 to March 12

I didn't do much work this week. We were given a paper to read and verify the formula. I am just trying to understand what is there in the paper. After understanding the new approach we have solved $(C + D)[2]$ using this new approach.

Week 10: March 12 to March 19

This week we are supposed to turn in our updated journals with suggested corrections by Dr. Martin. We have to turn in our updated report with whatever we have done this quarter. We are also supposed to include the terms which we calculated this week $\langle A[0], B[1] \rangle_{(0,0,0)}$, $\langle A[1], B[2] \rangle_{(0,0,1)}$, $\langle A[1], B[1] \rangle_{(0,1,0)}$, $\langle A[2], B[2] \rangle_{(0,1,1)}$ etc. So with this we are done for the winter quarter.