Journal of Prashanth Thogaru for Spring 2008

Prashanth Thogaru

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Week1(April 9th)

With the help of the formula for (C+D)[1], Dr.Martin has generalized the formula for (C+D)[k] in the last quarter. We (Jyothsna and I) were asked to verify the formula for different cases. We worked on verifying the formula for (C+D)[1] taking C and D as 2×2 tensors but the formula didn't work for this particular case. Dr. Martin advised us to come up with the typed version of the work done by us so that we can easily go through the verifying process of the formula and we are presently working on that.

Week2(April 16th)

We found the mistake we did in verifying the formula and we corrected it. We also typed what we did and have shown it to Dr.Martin. The formula is now working for the (C+D)[1] case using some constants and arranging them to get the R.H.S is equals to L.H.S. But the thing is instead of just guessing the constants we should have a proper formula for the constants that we are using. The main goal of us is to figure out a formula for the constants. We started working on that.

Week3(April 23rd)

I went through the proof again and we discussed some doubts regarding the proof with Dr.Martin. To derive the general formula for the constants, We are starting with guessing the formula for the constants of the (A+B)[1] case. Here we are going to use the constants that we used in verifying the formula for (A+B)[1], We may get more than one formula.

Week4(April 30th)

As we have more equations than variables (8 equations and 4 variables) we are getting infinitely many solutions for the constants formula and for now we put that formula derivation aside. This week Dr.Martin gave us a new task regarding the $|A + B|$ formula. Our new task is to reduce the number of computations required to compute the determinant. We are looking at the existence of recursiveness in finding the determinants of lower rank matrices i.e by choosing r out of n rows and columns.

Week5(May 7th)

We figured out some sort of recursiveness in between the determinants of the size 'n' and '(n-1)' square matrices (here size 'n' square matrix contains size '(n-1)' square matrix). To find determinant of the matrix of size n we used size n-1 square matrix and with some elementary operations we were able to get back the determinant of the size n square matrix. Now we are going looking at the pseudo code for finding the determinant of size 'n' square matrix using '(n-1)' square matrix. As an example we took 3×3 matrix and verified it.

Week 6(May14th

In last week's meeting it was suggested us to start working on our poster as we have poster presentation on 30th of this month and at the same time we are continuing with our 'Determinant' project. This time we split our work and I decided to work on the pseudo code of the above mentioned recursiveness of determinants and Jyothsna started working on the poster. Actually I tried to implement the code in python but as I am new to python scripting Dr.Martin suggested me to come up with pseudo code and then start working on the python scripting.

Week 7(May21st)

I went with the pseudo code(Draft) to the Monday's meeting and this time we discussed on the pseudo code and Dr. Martin has suggested lot of changes to the poster. Dr.Martin has sent a sample poster to us and this time I helped Jyothsna in some areas in preparing the poster.

Week 8(28th)

In this week's two groups meeting we went through the poster and Dr.Martin and the other team members suggested some changes to our poster and we made them and now the poster is ready to present.

Week 9(June4th)

The poster presentation went well and this is the first time ever I presented a poster. We have learned new things with this poster presentation. We started working on the report.