

Journal of Krishna Chaithanya Palavarapu for Spring 2008

June 11, 2008

1 Week 1 : April 9

After the spring break I am back to work. I met Dr. Martin on last Friday, last quarter we have plotted rank 2 points on the plane using Alternating Least Squares algorithm. We were able to plot black points in some areas of the plane and in some areas we were not able to plot black points. So this quarter we are starting with a technique to find out what areas we are unable to plot black points. I met Nam on Tuesday and discussed about the technique which Dr. Martin told us to work on.

2 Week 2: April 16

This week I have implemented the technique in Python which I explained in last week's meeting. I took a grid of (x,y) points and converted them into rank 3 point. Then I converted it to $2 \times 2 \times 2$ tensor. Then I converted the $2 \times 2 \times 2$ tensor to rank 2 point. Then again converted that rank 2 point to (x,y) point to plot it. I tried to get some pictures. But I am not getting pictures what I am expecting. I need to talk to Dr. Martin about this. I hope I will get pictures by next week.

3 Week 3: April 23

As I said last week, I talked to Dr. Martin regarding the code I have written. Dr. Martin found that, we have to swap the values in the rank 2 point which we are getting it from converting the $2 \times 2 \times 2$ tensor. We have changed the code and got some pictures. The goal for next week is, we need to understand the curves we are getting in the pictures. One more thing is we have to perform

Alternating least squares algorithm, which I did in the last quarter, for those points we are getting imaginary values. Nam and I met on Friday and Tuesday to discuss the work assigned to us.

4 Week 4: April 30

As I said on Wednesday's meeting, I have performed the Alternating Least Squares algorithm on the points which have Rcore or Score values negative. As we expected, we got light colored points near the curves and as we go near to the $G3$ point we have white color, that mean we are unable to plot rank 2 point in that area. The next thing I have to work on is to get the equations of the curves formed by Rcore and Score and have to understand them. I hope by next week we may get the equations of the curve. Nam and I met on Friday and Tuesday and discussed this.

5 Week 5: May 7

This week we had to solve the equations of Rcore and Score. We needed to get the Rcore and Score equations in terms of the x, y . We have calculated it and got an equation in the fourth power of x, y . That equation looks really complicated. So next week we may plot that equation using Matlab and hope what kind of curve or figure it represents.

6 Week 6: May 14

This week we have plotted the Rcore curve and got some picture, but Dr. Martin asked us to plot that curve in 2 dimension. We hope we will get that by next week. And one more thing Dr. Martin wanted to do us is to take the $D3$ $2 \times 2 \times 2$ tensor and we got the basepoints from them. We tried to plot a grid of x, y points using those basepoints. I tried to plot them, but I am getting an error in the PS file. I need to figure that out and hope I will get the picture of that one by next week.

7 Week 7: May 21

We have got an error in the post script file last week while I am trying to plot the (x, y) points using the basepoints we got from $D3$ $2 \times 2 \times 2$ tensor. Actually last week we have given wrong indexed basepoints, so I have changed them and tried again with the new basepoints. All the (x, y) points I took got divide by zero. So I ended up with plotting the basepoints and the $D3$ point. I also started working on preparing my Poster. I would be done with the final draft by Friday.

8 Week 8: May 28

I worked on preparing the poster this week. Nam and I together prepared the poster. I submitted the draft of the poster to Dr. Martin and he made some corrections. I am working on preparing the final poster now.

9 Week 9: June 4

Last week we presented the poster, I enjoyed presenting the poster. This was the first time I have presented a poster, I was excited. People who came to see the poster may not have understood everything, but they understood the goal and what we are trying to do, some people said "this is interesting". I really enjoyed presenting the poster, maybe because it was first time to me. I am working on preparing the draft of my final report of this quarter.