1   Journal Entry for 21 Aug 2023 to 27 Aug 2023

Activities: This week I continued writing the first paper to build up a foundation of our research. I found more sources, read them and inserted them into Zotero and was able to develop a more solid understanding of what I was learning. I made a lot of progress this in week of terms of our first paper and I think I have a very solid understanding of the history of our field as that was the task I was assigned to writing for our paper. I think that there is a lot of existing literature on the subject but with the rise of modern computing there is a lot more to do, so I think our topic is a good balance of both and will yield a good research paper. Furthermore, we started developing a simple prototype for our model to gauge its feasibility. We were able to query data from the SDSS and only took a small sample for the initial purpose to see some level of success, and currently we are working on it to get some results. We started out with a K-Means model and we are going to try to develop that but we might switch over to a SVM model as it might more accurately reflect how galaxy emission-line classification works. We will continue working on that up to the next meeting, and continue developing the paper even more but I think we have a pretty good hang of it going into it now.

Challenges: This week the biggest challenges I faced was with my code. I had some trouble getting the K-Means model to work and processing and filtering data. I did get past the initial preprocessing state with data, and am now trying to effectively fit it to a K-Means model and visualize it. However, the K-Means model might identity alternate patterns then what we are trying to discover so it might be more advantageous to switch to a SVM model which is what we should gauge. The paper writing is not posing too much of a challenge, it is just time consuming, but I do find it interesting to go through reserach papers and talk about what I am getting from them.

Plans: For next week, I continue to keep refining our paper and try to get a working model of our prototype. We just want a model that classifies galaxies to some level of success, so that we can keep expanding on that model throughout the semester. It would provide a good basis for working off of and would show us that our project is feasible to some extent. We will also keep writing our paper and attempt to getting a working rough draft by this week so we can assemble a solid final copy by the due date.

Comments: Overall this week was a solid amount of work with writing the paper and developing a simple prototype for our model. I think that it will get a little less stressful as we continue throughout the semester, and establish more of an idea on how we are continuing on our research and what results we are getting out of everything. Also, it may take some more time and effort to get some code working but we should be able to figure it out this week.