This project allowed for our team to gain and develop skills in all stages of the development process as well as general teamwork skills. With our knowledge of branched based development from COMP 485, we were able to work together seamlessly from a distance; however, we were still required to practice clear communication and trust (specifically when thinking of merging). Additionally, this project challenged us to learn new subjects within the realm of Computer Science, such as Machine Learning. Before this semester, no one in our group had taken a course in/worked with Machine Learning, so it was a fun challenge to learn as we developed our application. But ML was not the only unfamiliar subject we came across. Over the course of the semester, we utilized many packages and development frameworks such as Qt, Pyside6, Matplotlib, Scikit-learn, etc., that we had little to no prior experience with. We learned the complexities of different working environments (Mac vs Windows) and the importance of researching how different packages and frameworks may present or function on different devices. For example, we enjoyed working with QSettings because it allowed the settings to save regardless of environment. Further, we gained knowledge in using packages and the command line to turn python code into applications for others to use with no dependencies.

Beyond the technical skills gained over the course of the semester, two of the most significant skills we learned were communication with each other and communication with our external stakeholder. We were very fortunate to have an expert in the field who had valuable feedback as well as a vision for the final product. Balancing the wants and needs of our external stakeholder, our busy schedules, and team structure were some of the most transferable, real world skills gained.

We accomplished most of the functionality noted on the trello cards. We did not get to the brain isolation, or filtering stored data. However, we did achieve all of the functionality that our stakeholder requested. We learned the importance of keeping our stakeholder up to date with the most recent functionality. Over the course of the semester, meeting with Dr.McAfee helped us to adjust our implementation as needed. We faced many challenges while dealing with bugs and, aforementioned, differences in our working environments. Through our meetings we were able to come up with a decisive adjustment plan for our implementation and solve these challenges more efficiently.

Some of the initial functionality that changed was our image reading plan. For example, due to limitations with real patient data, we pivoted towards storing hypothetical lesions as 1’s and 0’s in CSV files. Additionally, due to time limitations at the end of the project, we chose for the data generation parameters to simply store the prior parameter selection. This way, the end user would still be able to use the exact ground truth from the previous method.

We learned lessons in keeping one another updated on what we are working on in our respective branches. Towards the beginning of the sprint, we often found ourselves getting confused about the structure of another person's code since we weren’t keeping each other updated on our implementations. Eventually, we learned to work together as a group when merging our code and update each other on what we changed before doing so.

Overall, we grew significantly throughout the course of the semester. We faced many difficult challenges, however, we learned to work together as a group to overcome them all.

Thank you, Dr.Kugele, for yet another amazing semester!

Sincerely,

The MediViz Team