

## **CS5002 Senior Design Self Assessment:**

**Tim Neale**

*Part A: What was your individual contribution to this project? Did you apply and build upon the skills identified in your initial assessment from last Fall? What did you do and how did you do it? What did you learn and what competencies did you build? What were your successes, what were your obstacles?*

For our project, individually, I contributed a lot of time and energy into the research and development of our GAN. I was personally responsible for half of the project, as it was just Daniel Hackney and I, so we had very similar workloads and time investment into project parts. We both learned similar skills on how to build a neural network and spent time learning more about machine learning and what goes into a GAN, which is what we set out to do initially last fall. In collaboration with Daniel, I made a GAN from a small starting point, initially only working for 28x28 black and white written numerals, to working for 128x128 color cat faces.

From this experience, I've learned a good amount, including a starting point of experience with neural networks and how complex they can be, even with already existing libraries. I also learned how to better present my work to other people that are from outside the field and would have no idea what I'm saying when I would describe my project (as it came up often). Some of our best successes was getting GPU integration, which sped up the training process for our GAN, as well as learning enough about neural layers to shape our data to work with larger and larger images as we progressed. Some obstacles included starting with so little experience, having to try to understand some of the mathematics behind neural networks, and how many hours we had sunk into training iterations of our network that didn't do what we expected/wanted it to do.

*Part B: What did your group accomplish? What did you learn about group work? What aspects of teamwork were successful and what aspects of teamwork were not successful? How did your efforts on the project compare to that of your teammates? Do any team members deserve special recognition?*

As a group, we accomplished the goal of our project, though not completely ideally, by having a GAN that outputting original pictures of cat faces. For groupwork, we learned how to schedule times that work for both of us to work together rather than separately, as it worked best for both of us, and this helped with our team's success. Working separately happened a bit, but it was for specific things that could be done without too much thought, as well as for training, which just took a lot of time and not a lot of teamwork. The things that were unsuccessful were trying to make sure we could both do every part of the work, and that we both knew every aspect that went into it, because we both had our own personal computers that didn't have the same capabilities, so I personally could not get the network to train as well as he did.

Comparing my efforts to that of my teammates, I feel as though we did very similar work, though he did a lot more interpersonal communication for our team, as he emailed with OSC to try to get our program to run on the supercomputer to save time. I feel as though our technical work was very equal, and we both probably put in similar hours of work toward the final product. Of the two of us, I definitely think Daniel deserves the recognition more, as he will continue the project into next semester for his master thesis, and he has a much easier time presenting our work than I do, though this comes

with practice. Much of our work was made to be equal, but he was also very on top of it and made sure things got done, and was definitely the face for our project.