Capstone Assessment – Anurag Neti

For my Senior Design, I will design and build a Neural Network that performs Sentiment Analysis on movie reviews to determine the sentiment of those reviews i.e. are those reviews positive, negative, or neutral. The project will leverage a Long Short-Term Memory (LSTM) network, a type of Recurrent Neural Network (RNN) architecture.

The knowledge I have obtained from various College Courses I have taken during my time at the University of Cincinnati. The project will be implemented in Python, so CS 2021, which I took in the Fall of 2016, will aid my approach to this project. Additionally, CS 4033, which I studied during the FALL of 2018, introduced to various topics relevant to this Capstone, such as Natural Language Processing and Machine Learning.

I also spent two semesters on co-ops dedicated to building projects relevant to my Senior Design. During the spring of 2018 for Professor Fred Annexstein, and spent 4 months experimenting with a Social Network related to Donald Trump that leveraged Sentiment Analysis. The experience acquainted me with various python Machine Learning packages such as tkinter, as well as IBM Watson's Natural Language Understanding (NLU) API. During the summer of 2020, I spent my second co-op of pertinence working for Kohl's as a Big Data Engineering Intern. Big Data is a major concept in the retail space, and I interviewed many employees working there who gave me insight into how the company uses data and leverages machine learning to provide customer with an enjoyable shopping experience.

Finally, I will elaborate on why I wish to pursue this project for my Senior Design; being a visual learner, I was drawn to the field of neural networks and deep-learning. I enjoy visualizing how those networks work, and have read numerous articles about how successful deep learning models have been in the past. For instance, AlphaGo, a deep-learning based AI successfully beat Lee Sedol, a world champion at the game of Go, an ancient Chinese board game.
I am also fascinated by languages and how we, as people, use them to navigate and find meaning in our world. I had purchased a book on Natural Language Processing a few years, and spent a considerable amount of time working through that book. Finally, I watch movies voraciously, and pursue screenwriting as an endeavor outside of curricular requirements. Thus, this project seemed like a terrific opportunity to combine multiple areas within and outside of Computer Science that I feel strongly passionate about.