CSCI 5525 Project Proposal

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September 21, 2023

Proposal

I want to base my project on creating a machine learning model that plays Pong, a 2D table tennis game made by Atari. At a high level, the model will be learning to predict where an object is moving, and how to intercept that object while being limited to one axis of movement. Machine learning is well suited to this problem because Pong is already a digital game, and there's no obvious approach from a purely AI approach. Additionally, a ML model is useful because Pong is a 2-player game, so having a ML agent allows a single human player to play the game.

I believe the best approach to this problem will be a reinforcement learning model. I'm yet familiar with the different reinforcement learning approaches and how they are implemented, but I'll likely use scikit-learn to assist with building the model. To simulate Pong, I will use the open source library gymnasium. I don't think it will be necessary to perform my experiments on the MSI machines, though I may utilize the CSE labs CUDA machines.