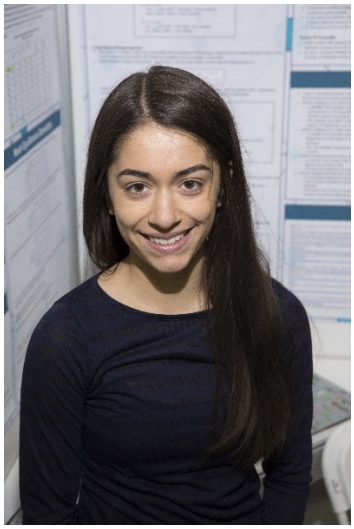
CWSF 2019 - Fredericton, New Brunswick



Avery Parkinson

Girls vs. Machine

Challenge: Discovery
Category: Intermediate
Region: Ottawa
City: Ottawa, ON
School: Elmwood School
Abstract: Last year, I did a game theory oriented science fair project that determined whether school aged girls could achieve the Nash equilibrium (optimal behaviour) through playing a simple card game. Building of that idea, this year, I wanted to use reinforcement learning to establish whether or not a computer could learn to play the same simple card game and achieve equivalent behaviour.

Biography

Hi! My name is Avery Parkinson, and I am 14 years old living in Ottawa. My favourite subject in and out of school is math, and in my spare time I enjoy running and volunteering. In regards to the latter, I spend two Sundays a month making sandwiches for a local homeless shelter and help maintain the website for Quail House - a group home for developmentally challenged adults. For the last 9 years, I have also been training in a classical style of Indian dance called Odissi. My inspiration for this project came from a previous experiment I had done to see if school aged girls could achieve optimal behaviour through competitive play. This year, I wanted to extend my project and train a computer to behave comparably. Having learned a lot about artificial intelligence, moving forward, I would like to apply it's principles to higher level problems, particularly sustainable agriculture. In terms of giving advice to a student who is pursuing a science fair project, I would recommend applying a topic they are knowledgeable about in a different context. In this way, they gain new insight regarding the problem, and the project itself remains a challenge.