Zachary Schuster

Jason Sawin

Senior Capstone

18 May 2022

The Common Good

College is a place to learn, grow, and explore many different things about the world in a diverse space. It is also a place where many begin to care about something, and begin to find their place in the world. For many the motivation is to make the world a better place. Whether they see a need in their community or are driven by the sight of conflict between nations, this betterment of the human condition is constant. The clearest routes are in the medical field or the social field, directly helping people on a daily basis. But a pinball machine is not made by one person. It requires a variety of people with different expertise. It is an intricate mix of physics, graphic design, branding/marketing, engineering, and coding that allows the machine to come together. Society is much the same way. A doctor is on the end of that system, but it is just that, a complex system. Doctors practice based on data that is used by data scientists, that is made possible by computer scientists. In similar ways almost everything in the modern world relies on or is at least aided by the use of computers. It is this interconnectivity that has allowed the massive change and advancements in the last few decades, but it is also a responsibility to make sure these tools are used in the right way.

The projects in my portfolio are based around artificial intelligence, specifically automation of a task. The pizza finder has a method of bumping around looking for pizza as the chess engine bumps around looking for checkmate. These tasks on their own are not very important and do not particularly advance the common good. But what they do is automation and that is increasingly important in the world. If we can automate certain tasks, we can improve the accuracy and speed while removing the need for a human to do it. Automation has a mixed view in society as it appears to take jobs away from people- while the transitionary period can look ugly in certain situations, it is a net good overall when millions of man hours are saved from an unnecessary task.

As I learn more about artificial intelligence, machine learning, deep learning, it becomes clear that the upper limit is extremely high with the potential of automation. Choices for player trades in sports or play choice have long been chosen by ‘gut feelings’ and favored from comfort, instead of choosing the best option objectively. This has changed a lot in sports since the early 2000’s when the idea of Moneyball gained some traction. Outside the sports world, there are also massive inefficiencies. We produce enough food to feed everybody in the country, yet truckloads of it is thrown out of every grocery store on a daily basis. I believe with the correct automation we could avoid these inefficiencies and provide everybody with all their needs. There is a hypothetical world in my mind where our wants and needs are calculated, and we have infrastructure that can produce enough for everyone. If we made this infrastructure in a sustainable way in terms of power source and materials, we would be set in theory forever. The only work required would be routine maintenance, and searching for further inefficiencies to reduce. While this is far from the world we live in today, it is one we can make step towards bit by bit. And the first step for me to help in all of this, was for me to make the simple pizza finder.