Problem Solving and Machine Learning

The creation of different kinds of technology has had a central focus on helping solve problems. An example of an efficient piece of technology that helps solve problems is an algorithm. An algorithm is “a process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer” (“Problem Solving” slide: 15). My interest comes from machine learning algorithms. I find it fascinating that you can tell a computer its objective, and it will eventually teach itself how to do that task efficiently.

The article “Machine learning is increasingly being used in UK financial services, survey indicates” by Maria Nikolova was about how UK financial services are using machine learning. The survey that was conducted found that “two thirds of respondents are already using machine learning in some form” (Nikolova). The survey also found that one third of respondents use machine learning for activities in a specific business area, most commonly found in banking and insurance sectors. Most often, machine learning is used in anti-money laundering, fraud detection, and customer-facing applications.

Nikolova’s survey also shows that most firms say, “that machine learning does not necessarily create new risks but could be an amplifier of existing ones” (Nikolova). For example, some of the firm’s applications could stop working due to governance frameworks not being
able to keep up with technological developments. To combat these risks, firms set up safeguards like “alert systems and so-called ‘human-in-the-loop’ mechanisms” (Nikolova).

Machine learning has always been a strong interest in mine, but I’ve never tried to learn how to create my own machine learning algorithm. That is until I read an article about machine learning in hedge funds. I have always had an interest in investing and when I read that hedge funds started using machine learning to predict stock market prices, I was immediately hooked. I was particularly intrigued when I read Wigglesworth says, “The $6bn-in-assets hedge fund hardly noticed the brief but dramatic reversal” (Wigglesworth) after a financial overturn that left hot stocks falling in price while stocks that were once thought of as “shunned” were revived. They hardly noticed the overturn because their algorithm was able to predict this flip before any human investor was able to.

The demand for computer science majors is extremely high. Currently, I am planning on getting a Bachelor of Science degree in Computer Science and a Bachelor of Science in Business degree in Finance. With this in mind, I do see myself with a potential career in this area. I see myself in an investment firm where I can build and develop new ways to predict the stock market more efficiently.

Machine learning makes me excited and curious for the future. The possibilities are endless for what machine learning can do for us because we don’t know what it can and can’t do for us. Machine learning has barely been touched by research which means we are still ignorant to its possibilities.

I am interested in the topic of machine learning or problem solving in general because I think technology is the answer to most of our problems. I enjoy learning about new ways
technology has improved our way of life whether it’s by creating software that can drive a car to reduce human error, building facial recognition systems that detect if a crime might occur/has occurred, or whether it’s something as small as being able to unlock your phone with your face which can’t be manipulated by a picture. I am also currently trying to learn how to create my own algorithms that can solve small problems that occur in my everyday life.

In conclusion, machine learning (or other algorithms) will always be around as long as there are problems that need to be solved in the world. The use of them is just going to skyrocket from here with the increasing amount of demand for new and innovative technology.
