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In the modern world, we live today, data transfers all around us. Whether it is the YouTube video playing on your phone, the order you made at Starbucks, or the timestamp you checked into work, data is flowing all around us. Many of us may wonder, why do we need these numbers, and why did we only hear about data science today?

In the real world, the data collected can be analyzed by data scientists to formulate sensible explanations or the “right” choices. For example, through obtaining COVID-19 data from hospitals and patients, data scientists are able to give advice and explanations based on scientific findings and real-world data. Sports coaches are able to compile films of players into computers to formulate better practice techniques and formations that the team previously had success in. With daily traffic data, some GPS systems are able to inform the driver of the best routes to each one’s destination without all the hassle. These are simply the few helpful pieces of advice that data science utilizing the data type called Big Data, for its high variety and large volume, contribute to our lives today.

Growing up, I have always been fascinated with numbers and most importantly, statistics or data science. Whatever I do, I frequently weigh the rates of success to failure and a variety of factors for me to make the theoretically, “right” decision. There are simple situations, such as what are the chances of me passing the exam if I don’t study, and complex situations, such as the chances of me selecting the elective I want to while being last to pick as a freshman. With data science and algorithms, I am able to answer the questions above without breaking a sweat while taking in factors that my mind might have never accounted for! I am inspired by the immense power and potential the field has for the world. By simply writing a set of algorithms for computers to obtain data from sites and graphs in real-time, data science makes decision-making efficient and convenient, while remaining logical and persuasive.

In the military world, specifically the Navy, data science is nothing new. It has been under the attention of military intelligence for a long time. It is common knowledge that modern intelligence is based on Internet-based attacks for the latest insider information of another country’s weaponry, equipment, combat technologies, etc. Armed with those data, the Navy and the Marine Corps can form effective counterattack techniques and tactics to minimize our losses while maximizing their impact on the opponent. Data science is also very important in analyzing the health of soldiers. With the data coming from tens of thousands of veterans and active-duty members, the Navy and Marine Corps can form and adjust training schedules to improve performance while maintaining health, as well as providing better therapy and medical care for common health issues among veterans. Lastly, analyzing data can provide reasonable funding distribution among the departments of the Navy to keep up its technological developments with the rest of the world to remain as one of the most dominant forces on the sea across the globe. The disciplines of data science in the Navy and Marine Corps can provide a basis to assert information dominance and make decisions with a great level of certainty in future outcomes.

Aspiring to major in data science in college and curious about the Navy’s stances on the field, I decided to watch the Naval Horizons video featuring Reece Koe, a data scientist working at the Naval Surface

Warfare Center in Port Hueneme, California. Part of his duty is to create a system that effectively stores the obtained information for the Navy to provide easy access, ensuring storage safety, and preventing data overloads. Throughout his childhood, Reece aspired to be an engineer to be like his father. However, through the SEAP (Science and Engineering Apprentice Program) and the NREP (Naval Research Enterprise Program), Reece decided that engineering was not his true passion and fell in love with computer coding and computer science. Later on, he was awarded the SMART (Science, Mathematics, and Research for Transformation) scholarship, in which two years of his college tuition had been paid off, and in exchange, he was assigned to work with the Navy for two years. Now, Mr. Reese is currently working to create the infrastructure of data science for the naval ships and commanders while exploring the field's early avenues.

I can form connections with a lot of Mr. Reeve Koe's experiences. I used to aspire to be an engineer because my strong suits are physics and mathematics. However, I was always passionate about computer science and enjoyed exploring its functions. Although I never had an opportunity to be a Naval Apprentice, I worked on personal projects, such as an Arduino seismometer, during my sophomore year of high school related to the field of computer science. Through that period of self-improvement, I realized that working as a data scientist can certainly still integrate one of my strong suits (mathematics) into my passion (computer science) and yet can still relate to engineering. As a Pioneer Academics Research Scholar this year, I am currently working on a project on creating an algorithm to simulate and predict the effect of COVID-19 on certain areas that are still free or have not been severely affected by the disease. To create this project, the algorithm has to include a function to obtain real-time data constantly to form an accurate simulated result. My current project is very similar to Mr. Reeve Koe's current project with predictive maintenance, where he created algorithms to provide a tentative date for ship maintenance, and his previous project, an AI agent to maneuver around enemy ships. As Mr. Reeve works towards improvements within the Naval community, I will be continuing to work on projects of my own so hopefully, they can contribute and improve society sometime in the future.

At the rate data science is being developed and utilized today, I expect that it will be a booming yet essential field of occupation by the year 2040. Like what Dr. Reeve said: "It's like a huge upcoming field and every company every industry have data right now." With that being said, the demand for data scientists will skyrocket over the next 15 to 20 years. I imagine that sometime in the future, people will be able to obtain the possibility of winning the lottery with the starting number of 5 or the possibility of running 300 yards based on your physical condition will be at their fingertips. Conclusions from datasets are going to be right on smartphones or whatever technologically advanced devices there will be in the future. As for future technologies within the Navy and Marine Corps, I anticipate new combat technologies and computer-generated tactics during warfare. By inserting past warfare technologies, tactics, counterattacks, and statistics, the computer would be able to generate feedback that will suggest the best strategy to face an opponent, detailed down to the corps the Navy should implement, the number of soldiers they should deploy, and even the best time to declare war. Data science's future is unpredictable with the power and potential people have not thoroughly explored yet.