To many people, the fields of computer science, software engineering, and information technology may appear to be three different ways to refer to the same field. Although there are many similarities among them, there are many individual characteristics of each field that makes it different from the others.

Computer science is the field requiring the highest knowledge of how algorithms work. In it, computer scientists must have very strong background knowledge of mathematics because they are expected to understand the mathematics of computation. In addition to this, they must also understand the true structure behind computers that make them work as they do. In order to understand the inner workings of computers, computer scientists must be proficient in many different programming languages.

Software engineers are in charge of building software systems and making them efficient. As suggested in their job title, many of them specialize in the development of the software including but not limited to operating systems, databases, and networks. Using a wide variety of languages, software engineers must understand the needs of their user base in order to design, test, and update programs that will make the jobs of their customers more effectively.

In contrast to computer scientists and software engineers, those working in information technology work mainly on the side of the user. As inferred from the title, information technology specialists manage data and help the users in corporate America get a grip on the use of the programs made by software engineers. Although they do not code as much as software engineers and computer scientists, they must still be able to understand the software inside and out.

Within computer science, there are a vast variety of fields that provide thousands of jobs in the United States. Such sublevels of computer science include the studies of artificial intelligence, cybersecurity, robotics, and the creation of computer graphics. Personally, I am most interested in the study of robotics. This is because, with it, you can build any machine imaginable and tell it what to do. There are no limitations to the many functions robots can do. They have made many of the menial tasks of the past no longer needed and since the field is still a rather new industry, there continues to be new ways every day for people to use robots.

With computers being needed in almost every industry, the demand for all three types of computer specialists is growing every year. Going into the computer science field, it is important for me to understand the purpose and job description of all three of these jobs because being educated in the positions that lie down the road will prepare me to choose a career path.