Glen Salyer
3/28/19
Fields Report

Dear Mom,

School is going great, and I'm really enjoying my Software Engineering major! I know that a lot of computer related things are a little confusing for you, so I'll try to break computer science down for you. There are many things to learn and know, but I believe that comparing and contrasting a few possible careers as well as defining some subfields would be a good start.

First things first, in the world of computers, there are three main sectors: Computer Science, Software Engineering, and Information Technology. While these each overlap with each other, they are also distinct in some subtle ways. Computer Science is defined as being a subfield of science and technology that specifically deals with computers and how they produce or modify data and information [1]. Software Engineering is a little more concrete, as it deals with using all of the scientific and technological knowledge Computer Scientists discover and applying it to create software [1]. Information Technology, on the other hand, can be described as utilizing technology to facilitate the use and spread of information and data, as well as maintaining the technology [1]. In short, Computer Science somewhat encapsulates both Software Engineering and Information Technology, and from there, Software Engineering moreso deals with software while Information Tech deals with hardware.

From there, many different subfields of Computer Science exist [2]. The three of those that I am most interested in are Software Development, Security, and Systems Administration. Computer Science is applied in each of these subjects heavily, but each in their own individual ways. For starters, the Software Development field would use different algorithms developed from Computer Science research to optimize their software. The Security field also relies on Computer Science in order to develop different cryptographic methods to protect our data, and as a result, we see these methods change frequently [3]. Finally, Systems Administrators also rely on Computer Science, but in a little bit of a different way. System Administrators must guarantee that their computer systems are working correctly and effectively, and as such, Computer Science is applied to ensure the soundness of their computing systems.

Now that you have a grasp on most of the prerequisite terms, you're probably curious about which career I'm most interested in. While I haven't entirely decided, I am currently looking at Software Development most seriously. I have always enjoyed trying to discover and

[1] SE Vocab - https://pascal.computer.org/sev_display/search.action
[2] Computer Science Online - https://www.computerscienceonline.org/careers/#
[3] - https://www.nist.gov/news-events/news/2014/04/nist-removes-cryptography-algorithm-random-number-generator-recommendations

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flesh out project details and specifications, designing the systems behind different programs, and finally actually sitting down and writing code. However, I am also interested in the cybersecurity realm. I really enjoy trying to reverse engineer code, understand foreign systems, and other similar tasks. They are often very challenging, and somewhat like a puzzle, which really flexes my mental muscles. Anyways, I hope you now can understand more about Computer Science and Software Engineering, as well as know what parts I am most interested in.

Love,
Glen.

[1] SE Vocab - https://pascal.computer.org/sev_display/search.action
[2] Computer Science Online - https://www.computerscienceonline.org/careers/#
[3] - https://www.nist.gov/news-events/news/2014/04/nist-removes-cryptography-algorithm-random-number-generator-recommendations