To begin this list, I figured I’d give a bit of a background on what I would like to do with computer science. I have always found an interest in cybersecurity. It’s always been a really cool concept to me. Still have quite a ways to go to get there but I have done some digging today in what languages would help in this path. This is in order of what I am least familiar with to what I am most familiar with.

1. C++
   1. C++ is a low level programming language than can provide access to low-level IT infrastructure such as RAM and system processes. If these things are not well protected, they can be exploited by hackers quite easily. From what I’ve found, there are cyber security programs/tools that have been created using C++ like Nmap which is a network mapping tool.
2. SQL
   1. SQL is used to manage data within databases. There has been quite an explosion of data storage systems and SQL is widely used for. Hackers have found ways to damage and steal stored data. Hackers can orchestrate an attack called an SQL ejection which involved finding vulnerabilities to steal and modify data.
3. HTML
   1. HTML is important in the sense that it is used by just about every other website. It is also one of the most basic programming languages. HTML can be manipulated to portray false information and also circulate false information to a buyer. The language can also be manipulated to help hackers steal login information.
4. Javascript
   1. Used in 95% of internet sites. Can be used to capture cookies, exploit event handlers, and carry out cross-site scripting. Used for creating desktop, server-side, and mobile apps. The popularity of the language makes it a prime target for hackers.
5. Python
   1. Python can be used to perform malware analysis, scanning, and penetration testing tasks. It can also be used for things such as host discovery, sending and decoding packets, accessing servers, port scanning, and network scanning. Python has a short learning curve making it easy to organize teams even if the members don’t have much coding experience. Python has a huge library of tools readily available for people to use making it easy to incorporate into cyber security projects.

Languages I’m interested in learning:

1. LISP
   1. LISP is a common language used for artificial intelligence which has always been a really intriguing thing to me. While cyber security is my main focus, it would also be cool to individually dive into some AI programming.
2. Java
   1. I’ve heard a lot of things about Java being a difficult language and my dad uses it a lot for his job. I’m always intrigued with a challenge and learning something hard will make learning other languages even easier. I’ve seen that it can be used for making apps and games. It’s also the coding language that’s used for Minecraft! That brings me to my next reason, game development. Game development seems like a fun hobby to have on the side. I know I mentioned AI before this but I’m so interested in learning at least a little bit of everything.
3. C#
   1. C# is extremely popular among game development. Being a gamer makes me really want to learn about how video games are made and how they work. Something about digging into the code of games and seeing what all was done to create it fascinates me.
4. Lua
   1. Lua is language used in one of my current favorite video games and I’ve heard plenty good things about it. Like my reasoning for C#, I would love to use it to look into the code for games.
5. R
   1. I would like to learn R for its involvement in machine learning. Machine learning is kind of a scary concept but also really really cool.

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