Commodore John Rodgers: Tomorrow's Computer Programmers!

The Commodore robotics team after winning the coding challenges at the state tournament!

The STEM career that appeals to us most is computer programming. Computer programmers create instructions for a computer to execute by writing and testing code that enables applications and software programs to operate successfully. This appeals to us most because we have been interested in coding since we were about 5 years old playing games like Club Penguin and Animal Jam. When we would talk with our parents about how much we loved these games, they would tell us, "Someone designed that challenge, you know." We were amazed. Someone built this thing we love so much? That was when we first discovered the power and potential of computer programming.

Last school year, when we started our robotics team, we were excited to learn that we would have to code. Coding was the number one thing many of us wanted to do for our team, and that didn't change even after we started building and driving. Later that season, right before the state tournament, our entire team was working harder than we ever had. Everyone was working on designing code that would work out in a way that could get us to

Charlie and A'mirah building a robot.

worlds. It was very stressful, but we couldn't help but enjoy it. We knew we could rely on coding as another way to get to worlds. While our driving matches would be a test of our nerves, our coding runs will be the same every time. It only relies on how good the original code is.

Another thing that appeals to us about computer programming is how flexible the field is. It offers a lot of independence and an excellent salary. It would be exciting to work on interesting


The Commodore robotics team preparing for a tournament.

projects with interesting people, which computer programmers do every day with many different projects.

Rubén introducing himself to the team.

Computer programming is different from many other professional fields. Unlike being a doctor or a lawyer, you don't have to go to college for 8 years or only study specific subjects and topics for your whole life. Some people do follow a more traditional path, and they take a ton of math and science classes and major in computer science. Others go to school for different fields and end up pursuing computer programming as more of a hobby that becomes a career. There are even some people who participate in boot camps, a 3-6 month camp where they just learn everything you would need to know to be a computer programmer.

We interviewed two people who work as computer programmers to learn about their background. We spoke to Kyle Davis, a developer who works for Uber Health, and Rubén Quintero, who is an independent developer. Rubén went to school for engineering and learned a lot. He is now a software engineer. Kyle, however, did not. He was in finance for a while until he realized software development was what he wanted to do instead. There isn't a specific path you need to follow to be a computer programmer.
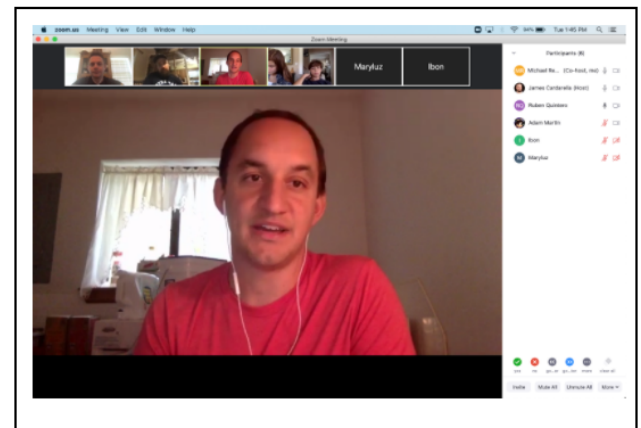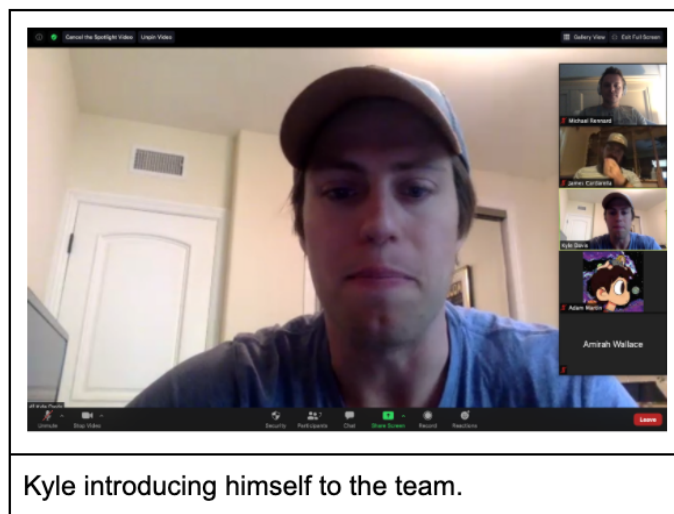
Kyle introducing himself to the team.

Not all computer programming skills are directly related to programming. Just a few important skills would be networking, collaboration, the ability to get along with people you may disagree with, effective problem solving, communication skills, flexibility, being able to work independently, and having a strong math and science background. STEM skills will help you to understand specific coding languages as well, such as HTML, Javascript, Python, Ruby, Cobol, etc. The other ones will help with teamwork because most projects aren't worked on alone, even if it is divided into sections. It's important to get along well with others who will be valuable as you get further into your career.

A well-known person working in the field of computer programming is Kevin Systrom. He created Instagram with no coding background. He didn't go to school for it, he didn't take classes, and he didn't

work there automatically. But he practiced whenever he had free time and eventually studied and designed enough to create one of the world's most popular and downloaded apps. When Instagram launched, it was able to rack up 25,000 users on the very first day. He has inspired us to learn more because we find it very interesting how he picked up his programming skills and built up a massive app
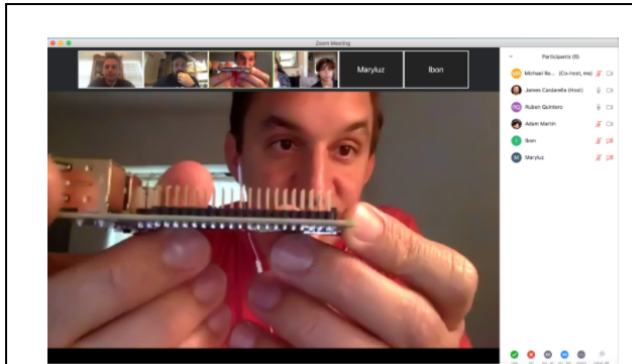
Computer programmer Rubén Quintero demonstrating how the Raspberry Pi works for the Commodore robotics team over Zoom.

from nothing, no formal training at all. He has taught us that it is never too late to pursue a passion, even if you thought you already had a specific path to follow or were going one way. With commitment and perseverance, you can reach your goals.

Rubén and Kyle are also both computer programmers who have come a long way from just being little kids interested in video games. Especially Rubén, he always knew technology was what he was interested in. He pursued it through his whole life, and it became a career instead of a hobby. As long as you commit yourself to the field and make it something you truly want to pursue, you will succeed in computer programming. No matter how you get there, when you start learning about it and pursuing it, and what you learn from. The field of computer programming is welcoming to a diverse group of learners who succeed in different ways.

Our involvement in competitive robotics is preparing us for the field of being a computer programmer in many ways. Our team excelled in the robot skills challenge, which required excellent coding skills. We didn't know anything at the beginning of the year, but we ended up being the best team in Maryland after developing our skills here, and we earned our spot in worlds. Competing in robotics has led to us being skilled coders, even if we still have a lot to learn. Our team has also been doing VEXcode VR coding challenges since the very beginning of quarantine, and though they started easily, they have slowly gotten harder, and we are currently coding on an advanced level. This is helping because not only are we getting actual practice on coding, but we are learning to do challenging things and solving problems.


The sixth grade robotics team members, deciding what the first design of that year's robot should be.

Many people working on many different projects in the computer programming fields didn't even learn to code until high school, maybe even college or past that. We are middle schoolers working on coding weekly, and that definitely gives us an advantage as we get older and start advancing in our academic lives. Many coders also say that the first job they worked, they hated. They didn't have enough experience built up yet to show that they were ready for a full job. However, learning all of this coding this early will either automatically boost us up to a job we like or will get us our first job and experience earlier.

Robotics is very important if anyone wants a future job in computer programming, we've only been in it for a year, but we've already learned so much giving us an advantage for our future. Even at the beginning of this year, we learned many skills that we will have to use in a future job of computer programming, such as working with a diverse team with different skill levels, communication styles, and personalities. You have to overcome challenges in order to solve a problem together, and that is what robotics has helped teach us.

Rubén Quintero showing us lines of code over a Zoom screen-share.

Computer programming as a career will evolve in numerous unpredictable ways in the future. Just think about how different the world was ten years ago: nobody had smartphones, Netflix wasn't really a thing, you couldn't rideshare or get food delivered to your house with your phone, and so on. After talking to Kyle and Rubén, we learned that it is very hard to predict the coming changes in programming. Everything happens and changes very quickly when you're working in this field, so it is almost impossible to guess what will be happening in the next ten years. Since the world is changing so rapidly, what is needed from computer programmers will probably change often, like it did when quarantine started.

We were pretty good at programming before quarantine - we did win the state championship, after all - but we have become significantly stronger using VEXcode VR in adapting to this unforeseen change. Many new projects were developed and many old ones were put aside for a while. It is predicted, however, that over the next few years robots and AI will continue to be developed and coded so they can have more human-machine interactions and begin taking on jobs meant for humans. Both Kyle and Rubén mentioned how there is a lot of uncertainty, but these jobs and fields are growing and changing daily. Programmers might switch from coding websites and computers to coding more advanced technology such as developing and coding robots that can work like a human. We are still
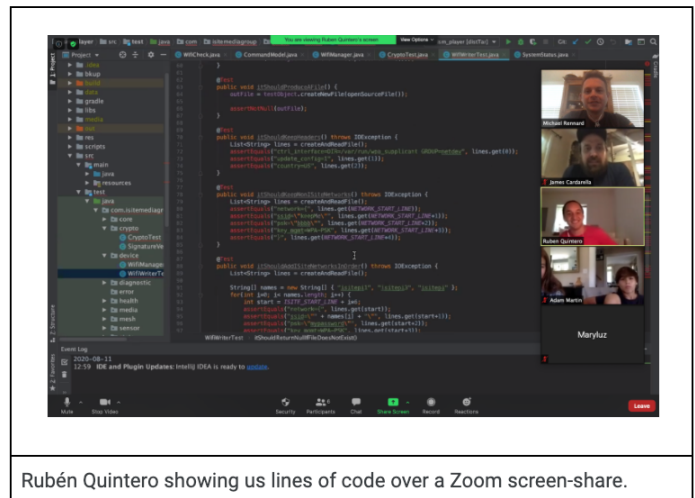
very young, but we are excited because no matter what the future holds, we will continue pursuing our passion for robotics and soon enough, we will be computer programmers!

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