



TRANSFERRING INTO COMPUTER SCIENCE

Your guide to making the switch.





5 SIGNS YOU MIGHT ENJOY CODING

1. You're a problem solver

Contrary to its reputation, programming requires creativity. As a coder, you're often faced with vague, large-scale problems such as "Code a program that plays Hangman as well as possible". It's up to you to figure out what algorithms and languages you want to leverage to tackle this problem.

2. You love attention to detail

Computer programs can be thousands of lines of codes. If you have a single typo in your code, your sophisticated program can be reduced to a series of angry red error messages. While this may sound daunting, this happens to every coder (seriously). Detecting errors in your code is a skill that every coder develops.

3. You're a lifelong learner

Technology is a constantly evolving field. There are new algorithms, coding languages, and computing services developed everyday. The optimal coding solution to a problem in 2021 may be antiquated by 2022. As a coder, it's critical to be able to learn new skills and grow with the rapidly changing tech world.

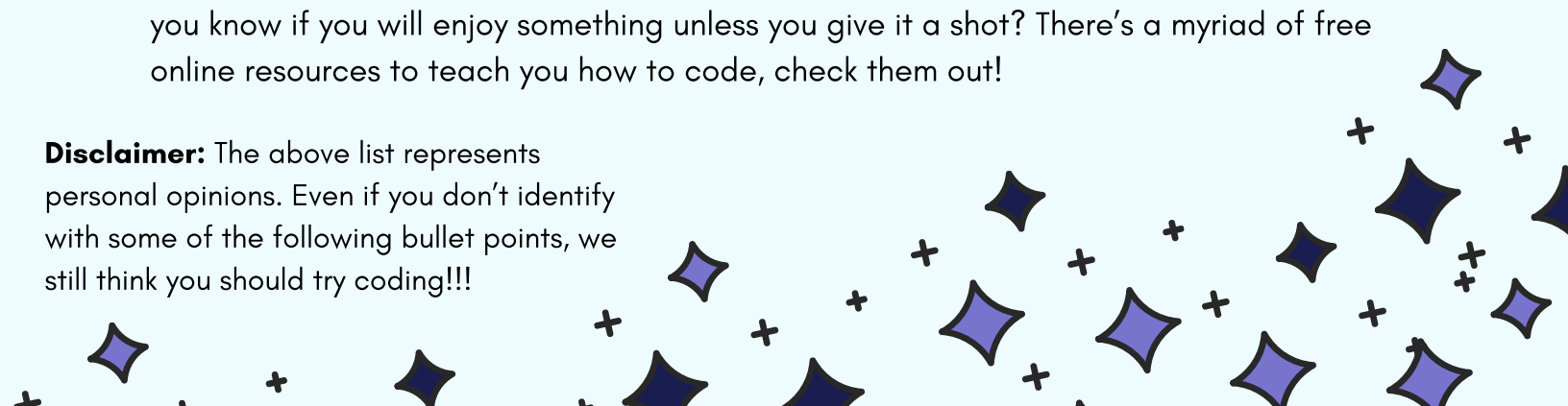
4. You can teach yourself new concepts and ask for help

Oftentimes, you won't possess all the knowledge required to solve the coding problems you're presented with. As a developer, you're expected to use the internet to get help researching the optimal strategies and debugging your code. If you're still stuck, reach out to your classmates/TAs/co-workers for additional aid. Many people are more than willing to help you!

5. You've never tried coding before

The single best way to know if a career in coding may be for you is to try it! How could you know if you will enjoy something unless you give it a shot? There's a myriad of free online resources to teach you how to code, check them out!

Disclaimer: The above list represents personal opinions. Even if you don't identify with some of the following bullet points, we still think you should try coding!!!





TOP 5 MYTHS OF COMPUTER SCIENCE

Myth: You have to be a genius to be in computer science

Fact: Computer science is just like any other field! This myth is perpetuated because CS is not taught in many high schools and so most people don't understand what it is. Much more important than your IQ is your problem-solving skills and work ethic!

Myth: Computer scientists spend all their time coding in their dark basement.

Fact: While we do have a preference for the dark theme on our computers, a lot of our work is actually talking to people and coming up with creative (and efficient) solutions! We also learn a lot more than just coding. We learn about programming logic, designing efficient algorithms, discrete math, and how computers work.

Myth: All computer science majors end up as software developers for tech startups.

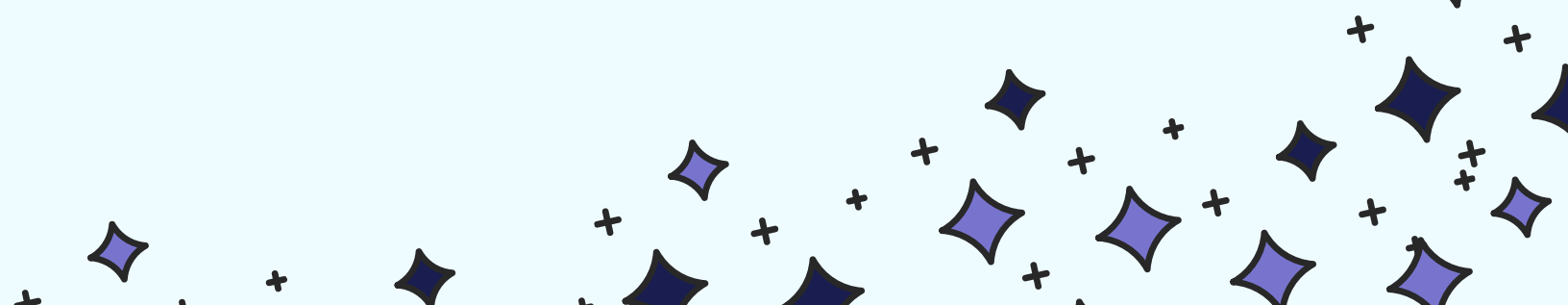
Fact: There are a lot of jobs that require a computer science degree but don't involve coding! You can be a consultant, database manager, software architect, and many others. The field is expanding every day and the real question is what can't you do with a computer science degree?

Myth: Computer science is all about working individually

Fact: The first couple years of CS at Queen's involves mostly individual projects. But once you learn the necessary building blocks, you can start working in groups on really interesting projects! Almost all work in the industry is done as a team, and so we actually find ourselves working together far more often than working alone.

Myth: Computer science is just for people with a strong background in math and science. You can't transfer into computer science from an Arts degree.

Fact: The applications of computer science cross into all disciplines, and there is a way to fit computer science into every field of study. Computer science is about the automation of calculations and finding the best solutions, it is not just for people who took physics in high school. Queen's also has a great program that mixes computer science and the creative arts!



WHAT CAN YOU STUDY WITHIN COMPSCI AT QUEEN'S?

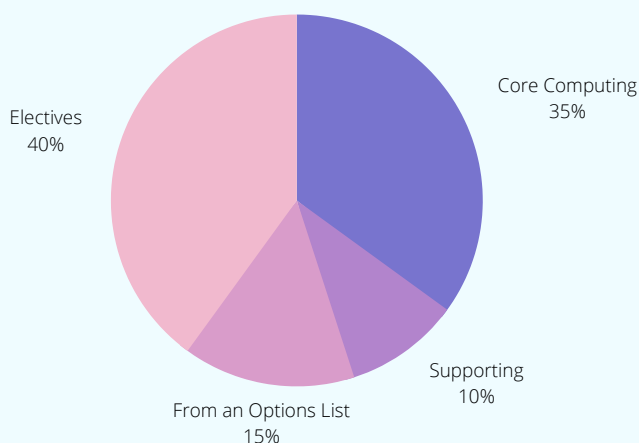
Queen's Computer Science has two main branches:

1. Computing majors
2. Computing specializations

Here is a quick overview of their similarities and differences:

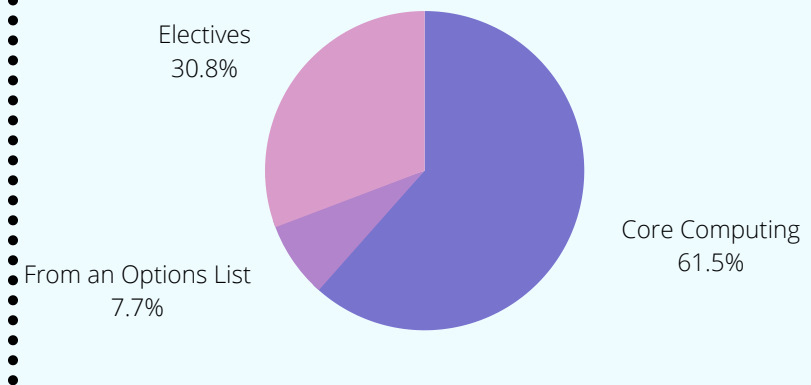
Computing Major

- You can minor in anything else in ArtSci
- You can complete a certificate in any participating Queen's programs*



Computing Specialization

- You complete all the required CS courses from a major, plus more CS
- You cannot do a minor as well
- You can complete a certificate in any participating Queen's programs*



* Queen's certificates are mini-credentials (like a small minor) that appear on your transcript and can help demonstrate your well-rounded education and stand out on your resume. Participating programs at Queen's include Commerce, Sexual and Gender Diversity, Mohawk Language and Culture, and Media Studies.

Source: <https://www.cs.queensu.ca/applicants/undergraduate/>




COMPUTING MAJORS

There are 6 majors to choose from:

1. **Fundamental Computation** - A broad degree with opportunity to focus on specific areas if you desire.
2. **Data Analytics** - Learn how to understand complex systems through computer models based on observed data.
3. **Artificial Intelligence** - Explore the process of designing and programming computers to act like humans.
4. **Game Development** - Learn the fundamentals of game design and development, including AI, graphics, and human-computer interaction.
5. **Biomedical Computation** - Combine traditional computer science with advanced techniques of life sciences and healthcare.
6. **Computer Security (Cybersecurity)** - Learn about preventing cyberattacks and the ethical implications of computer science as an industry.

Source: <https://www.cs.queensu.ca/applicants/undergraduate/>






COMPUTING SPECIALIZATIONS

There are 5 specializations to choose from:

1. **Software Design (SODE)** - Dive deep into designing computer software and pushing the boundaries of computer system capabilities.
2. **Computing, Math, and Analytics (COMA)** - Learn a combination of research-based computing and both pure and applied mathematics. Primarily intended for students interested in graduate work or further research.
3. **Cognitive Science (COGS)** - Explore the science of the mind and thought in the context of AI and programming computers which can think like humans.
4. **Computing and the Creative Arts (COCA)** - Learn a solid foundation in computer science and math while also pursuing advanced courses in the creative arts. (Note that this is a Bachelor of Arts degree)
5. **Biomedical Computing (BIOMED)** - Similar to the biomedical computing major, but more focused on computer-integrated surgery, genetics, computational biology, and software development.

Source: <https://www.cs.queensu.ca/applicants/undergraduate/>



TESTIMONIALS



Brooke Clouston (Computing '20)

1. When did you transfer to Comp Sci?

I officially transferred to comp sci in 3rd year however I started taking introductory courses at the beginning of 2nd year while working towards a degree in math. I had no previous experience with coding but within a couple weeks of taking CISC 101 I knew I wanted to make the switch. Changing majors half way through my degree meant I didn't get to take too many comp sci electives if I wanted to graduate in 4 years, however I found the core courses of my COMA degree incredibly fun.

2. What surprised you about transferring to Comp Sci?

Before transferring to comp sci I thought there were only a few fields in computer science to pursue. It wasn't until I began taking courses, joining clubs, and completing side projects did I realize computer science has so many exciting avenues to explore. It sounds cheesy but there truly is an area of computer science for everyone – whether that's user interface design, operating systems, app development, artificial intelligence or game development (and so many others)!

TESTIMONIALS



Mudra Patel (Computing '22)

1. When did you transfer to Comp Sci?

I officially transferred into Computer Science at Queen's after my second year in Science. I actually wanted to transfer after taking CISC 121 during the summer of my first year, but I wasn't familiar with the transferring process. I had never taken any Computer Science courses in High School, but I knew I loved math and solving ambiguous problems, so I told myself it was worth the risk.

2. What surprised you about transferring to Comp Sci?

What surprised me the most was the plethora of course options Comp Sci has. When I thought about CS, I thought about the generic coding courses, including Python, Java, C++ etc., and a few math courses, but that was not the case. Courses range anywhere from Human-Computer Interactions to Game Design to Graph Theory; it has something for everyone. Another thing that surprised me was how much group work there is, especially as you go into your third and fourth year. This is an excellent way to meet new people and learn from a diverse group. Finally, I was shocked by the different career paths there are besides from the generic SWE and IT roles.

TESTIMONIALS



Victoria Armstrong (Computing '20)

1. When did you transfer to Comp Sci?

I transferred into comp sci after my second year. I initially started university in French and math thinking that I wanted to be a high school teacher. I'd never done any coding before and completely switched on a whim. If you asked me 10 years ago if I would ever do a comp sci degree I would have laughed, but I'm so glad that I decided to switch!

2. What surprised you about transferring to Comp Sci?

I think the biggest surprise was all the job/research possibilities within computer science. In high school, we talked about robots for about a week and that was all we did related to comp sci so I had this impression that the only jobs you could get were software development, or like a hacker in a basement that you'd see in movies. That's so different from the experience I had - I met a ton of people with diverse backgrounds and goals. I was also really surprised to learn that coding becomes less about knowing how to code in a particular language and more about the way you think about and tackle a problem.

TESTIMONIALS

Ellie Sekine
(Computing '21)



1. When did you transfer to Comp Sci?

I transferred to compsci from general sciences in second year after loving CISC 101 and CISC 121 in first year! Coding classes made me feel excited about school in a way that I had never felt before so I went with my gut, and it ended up being one of the best decisions I've ever made.

2. What surprised you about transferring to Comp Sci?

What surprised me most about comp sci is how much you can learn in one year. After every year of school, I felt like my knowledge and abilities were on a completely new level then they were the previous year. What seems like a total mystery in the fall will seem like common sense in the winter. You will be surprised at how fast you grow!

TESTEMONIALS

Danielle Mott
(Computing '21)



1. When did you transfer to Comp Sci?

I transferred into Comp Sci at Queen's after my first year in general sciences. I had zero coding experience so pursuing a degree in Comp Sci was a shot in the dark.

2. What surprised you about transferring to Comp Sci?

What surprised me most about transferring to Comp Sci was how much I loved coding. Computer science has always been described to me as extremely "geeky" and a field that only geniuses can succeed in. Much to my surprise, I was hooked on the challenge of coding after my first coding class. I loved designing efficient programs, hunting down bugs in my code, and the thrill of watching my code run properly for the first time.

Comp Sci is something that I never thought I would be interested in until I tried it. I highly recommend giving coding a shot regardless of whether or not you think you would be "good" at it!