DISCOVER YOUR STORY IN COMPUTER SCIENCE
YOU+
WATERLOO

cs.uwaterloo.ca

Programming your future.

The David R. Cheriton School of Computer Science is the largest academic computer science research centre in Canada. With access to 16 research areas and deep connections to Canada’s growing tech sector, you’ll have the chance to pursue cutting-edge research, make your mark building your own entrepreneurial adventure, and learn from the best through classes taught by leading experts.

95.7% OF GRADUATES EMPLOYED within two years (2018 Cohort)

#25 IN THE WORLD FOR COMPUTER SCIENCE
(QS World University Rankings by Subject 2022)

#1 IN CANADA tied for first in computer science and mathematics (Macleans University Rankings 2022)
YOU’RE IN THE DRIVER’S SEAT

RAY
HONOURS COMPUTER SCIENCE
CO-OP

Ray put his coding skills to work with WATonomous, Waterloo’s undergraduate student-run autonomous car team, and quickly earned the role of Team Captain. Through this experience, a new passion was discovered: management. Now his future plans have expanded to include an MBA, consulting work, and starting his own business. “If there’s any advice I would give to a first-year student, it’s to constantly search for and go after Waterloo’s many opportunities. That’s how I discovered what I want to do.”

MORE TO EXPLORE

Meet us online for more tips and stories:

Waterloo.Math
WaterlooMath
UWCheritonCS
It’s more than just theory and practice at the David R. Cheriton School of Computer Science. It’s about creating the future that you want to see. Through a wide variety of courses, combined programs, and options, you’ll apply computer science to help solve the problems of today and predict the problems of tomorrow.

YOUR CUSTOM FIT DEGREE
With world-leading research, 60+ courses, and tons of options and electives to choose from, Waterloo allows you to customize your experience to match your interests. From artificial intelligence to quantum computing, to cybersecurity and beyond, build your experience in high-demand fields.

SUPPORTING YOUR GROWTH
Making the leap to university is exciting, and it’s also a life-changing step. At Waterloo, we have the resources to help you succeed. You can access academic support through the Computer Science Consulting Center, academic advisors, and the Student Success Office. Professional and peer counselling services are also available whenever you need support with any aspect of life.

IN-DEMAND JOB SKILLS
Today’s employers look for strong technical skills and effective communication – and we have you covered. After completing two communications courses, you’ll expand your knowledge and develop skills that will set you up for success.

cs.uwaterloo.ca/computer-science/advising
uwaterloo.ca/math/communication-skills
GET A JUMP START

Did you know that Waterloo offers free, open courseware that can teach you new skills or supplement your programming knowledge to help you prepare for university? You’ll have access to lessons designed by world-class instructors, interactive worksheets, and unlimited opportunity for practice!

uwaterloo.ca/mathematics-online-learning

BECOME A WARRIOR FOR A DAY

Experience the Waterloo difference firsthand! Check out our facilities, hear from fellow students, and get a taste of life as a Warrior, whether through a campus visit or from home. Visit our website for information on in-person and virtual tours to see what campus life is really like.

uwaterloo.ca/math/campus-tours

CHALLENGE YOURSELF

Put your mathematical problem-solving abilities to the test and have fun doing it! Participation in contests like the Canadian Computing Competition, Canadian Senior Mathematics Contest, and/or the Euclid in your final year of high school can give your application a boost and is required to be considered for scholarships. Find more information and contest dates on page 17.
CO-OP

EXPERIENCE THAT ADDS UP

UNIVERSITY OF WATERLOO
Get ahead of the competition with up to two years of relevant work experience on your résumé when you graduate. Co-op is a great way to explore potential careers, build your network, master new skills, and earn a salary.

**HOW CO-OP WORKS**

You’ll alternate study terms and work terms. Computer Science has multiple study/work sequences available, which you will request when making your course selection.

The Centre for Career Action is there for you every step of the way – from helping you polish your résumé to developing your interview skills and offering advice as you navigate your career path.

[www.uwaterloo.ca/co-operative-education](http://www.uwaterloo.ca/co-operative-education)

**EXPERIENCE MATTERS**

At Waterloo, you’ll take on new challenges and make an impact through our renowned co-op program with the largest network of employers of any university in North America. Waterloo revolutionized experiential learning with the groundbreaking concept of co-operative education and continues to lead the way.

**TYPICAL POSITIONS INCLUDE:**

- Full stack developer
- Game programmer
- Web developer
- Technical systems analyst
- Research assistant
- Software developer

[www.uwaterloo.ca/co-operative-education](http://www.uwaterloo.ca/co-operative-education)

**APPLY YOUR SKILLS**

JONATHAN

**COMPUTER SCIENCE, CO-OP**

Jonathan made his mark during a co-op placement as a back-end developer for online grocery services supporting communities during the COVID-19 pandemic.

“I’ve really enjoyed learning the coding and theoretical underpinnings [in class] and then getting to put that knowledge to work in my co-op terms. With the skills I’ve developed in classes and in my co-op terms, I could get a software engineering job, I could go to grad school, or I could even create my own tech startup.”

7,500+ employers across the globe
EXPERIENTIAL LEARNING

BRING YOUR LESSONS TO LIFE
Go beyond the classroom with experiential learning.

Our students are taking their technical skills beyond the classroom to show the world the power of computing. We’re the home of Hack the North, StarterHacks, WATonomous, The Data Open, ASA DataFest, iGEM, and more.

FORGE YOUR OWN PATH

Waterloo is home to a thriving entrepreneurial community. If you have an innovative idea you want to explore, we have the resources and ecosystem available to help turn it into a reality. Waterloo’s unique innovation ecosystem includes a wide variety of funding opportunities, coaches and mentors, events, and individualized supports to help you find success, however you define it.

Each term, Velocity’s experiential innovation hub at the University of Waterloo and The Problem Lab award up to $50,000 to students with creative tech ideas. CS students have pitched great ideas that are as diverse as they are – AI training apps to fantasy e-sports – in front of local entrepreneurs for their chance to help fund their innovations.

innovation.uwaterloo.ca

BIG IDEAS, BIGGER REWARDS

ALYSSA, TRINITY, SUSAN, AND ANGIE, SAFELANE

Alyssa, Trinity, Susan, and Angie met on campus and decided to take on Hack the Valley in their first year – and they won! They created SafeLane, a web interface designed to protect drivers by helping them pick the safest route while on the road, which won them Best Mapping and Travel Hack. They tested their knowledge and expanded their skills to bring their idea to life, and it paid off.

"The hackathon was our first step into the real world, really seeing how to apply our knowledge and learn new things from mentors, and put it all into a great project," says Alyssa.
PROGRAMS

COMPUTER SCIENCE
CUTTING-EDGE ART

EVE
COMPUTER SCIENCE, CO-OP

Our Computer Science students can focus their studies with upper-year courses that draw from our 16 unique research areas. Eve came to Waterloo because of the world-class Computer Science program, but she found her perfect blend of interests after she got here. She’s combining her artistic talent with her love of programming in our Computational Fine Arts specialization. While gaining experience with deep learning and software engineering in her co-op roles, Eve gets creative by programming interactive works of art.

From cybersecurity to artificial intelligence, you’ll learn how our future is being shaped by computer science.

Combining theory, practice, and application, you’ll develop a broad understanding of systems and networks, algorithms, and software engineering, with the opportunity to dive deeper into research areas that interest you. Be a part of solving real-world problems and creating tomorrow’s solutions by applying mathematical and computer science skills in a wide variety of fields.

› Co-op or regular
› Earn your Bachelor of Computer Science (BCS) degree

SPECIALIZE YOUR SKILLS

Pursue your passion with our interdisciplinary specializations:

› Artificial Intelligence
› Bioinformatics
› Business
› Computational Fine Arts
› Digital Hardware
› Human-Computer Interaction
› Software Engineering

CAREER POSSIBILITIES

Software architect or developer
Software engineer
UX designer
New technologies are being developed every day, and software engineers are the driving force behind making these advancements more affordable, faster to build, and easier to maintain.

In Waterloo’s Software Engineering program, you’ll apply computer science alongside engineering principles and practices to design, create, and maintain computer software. Through project-intensive classes and co-op, you’ll learn to develop complex software systems that ensure the reliability, performance, and usability expected by today’s industrial and business applications. Through teamwork and collaboration, you’ll hone skills in communication, business, and strategy.

Co-op only
Earn your Bachelor of Software Engineering (BSE)

CAREER POSSIBILITIES

Full-stack or simulation software developer
Android developer
Web development engineer

1,500+ technology companies in Waterloo Region means many local co-op and employment opportunities
DATA SCIENCE

2.5 quintillion bytes – that’s the amount of data people produce every day. Learn how every industry – from medicine, to business, to advertising, and entertainment – is using this information to take data-driven approaches to strategic planning and decision making.

Immerse yourself in data science by taking courses in computer science and statistics to master the methods used to analyze large data sets. You’ll help predict future trends to improve medicine, public health, business strategy, products and services, marketing campaigns, and safety.

› Co-op or regular
› Earn your Bachelor of Computer Science (BCS) or Bachelor of Mathematics (BMath)

DISCOVERING DATA

MEAGAN
DATA SCIENCE, CO-OP

Meagan explored multiple program options before she found her perfect fit with Data Science.

“I think once I decided I wanted to do data science, my motivation and drive to succeed changed a lot. I’m really interested in the statistics behind things because I’ve done a lot of programming courses and I’ve taken stuff like artificial intelligence with a little bit of machine learning. It’s fun to write programs that do really cool things and solve problems. And it’s interesting to be able to understand why it works.”

INCREASE YOUR ODDS

we recommend applying to both the Computer Science and Mathematics programs to maximize your chance of admission.
Combine the worlds of bytes and business in this diversified program. In just five years, you’ll earn two full degrees – a Bachelor of Computer Science degree from the University of Waterloo and a Bachelor of Business Administration degree from nearby Wilfrid Laurier University. Through a variety of courses you’ll learn about software development, algorithms and data structures, and artificial intelligence while sharpening your business acumen in brand communication, accounting, human resources, marketing, and finance.

› Co-op only

› Earn two degrees: Your Bachelor of Computer Science (BCS) from Waterloo, and your Bachelor of Business Administration (BBA) from Laurier
Fintech (financial technology) is a trillion-dollar industry that needs professionals who have a unique skill set: a thorough understanding of complicated financial concepts and the technical knowledge needed to create software tools that solve complex problems.

Major in both computer science and finance to grow your skills for the ever-evolving fintech industry. Work with insurance companies, banks, or technology firms during co-op terms to develop your talents for a successful career

- Co-op only
- Earn your Bachelor of Computing and Financial Management (BCFM) degree
- Become a Chartered Financial Analyst (CFA). Your finance courses will prepare you to write the Level 1 CFA exam as early as your fourth year.

Keshav has always been interested in computer science and finance and discovered he could pursue both his passions simultaneously through Waterloo’s Computing and Financial Management program.

“There is never a dull day while studying at Waterloo. Every class creates new learning opportunities, and there are an endless number of ways to discover your interests. Going above and beyond is the Waterloo way, and my peers and I have embraced that mentality to learn and explore our future career prospects.”

Check out our Mathematics Business and Accounting programs for similar career paths.

uwaterloo.ca/math-business-accounting-programs
Life is more than just work.

We want Waterloo to feel like a home away from home – so when you’re ready to put the books down to re-energize, there’s something for everyone. With more than 200 clubs and student groups on campus, you can meet new friends with similar interests.

“I love participating in Waterloo Women’s Impact Network events. It’s a wonderfully supportive community that discusses current topics and holds interesting talks for the network. I encourage every woman in math, and allies, to attend an event or become a member to see themselves represented and hear inspiring stories. Representation matters.”

“Not only did going to the gym help maintain my health, it also helped me beat some of the stress and take my mind off a lot of the work. It helps me get a clear head afterward.”

“MathSoc hands out about 1,400 slices of pie on Pi Day. That’s a heck of a lot of pie! It’s a fun event to volunteer at because you get to meet so many Math students excited to celebrate.”

“CS 246 (Object-Oriented Software Development) is my favourite course as it’s the first deep dive into software development. I learned about designing, testing, and debugging programs and applicable, tangible skills like Git, Valgrind, and testing suites that I continue to use daily and on co-op.”
“It’s really special to be a part of a group of people who are like me and are passionate about math and computer science in the same way I am.”

JONATHAN

“What sets Waterloo apart is the focus not only on application, but also the theoretical skills needed to succeed. We’re encouraged to approach problems by understanding the theory behind them.”

JULIA

“Orientation Week is one of the most blissful parts of first year. While not in the itinerary, getting lost around campus, meeting new people, and sporadic game nights all frequently occurred. The real value of Orientation was the social aspect to meet new people from other programs and faculties.”

KESHAV

“The Math CnD is one of my favourite places on campus! Most of my time between classes is spent there, grabbing a quick coffee, attending a board games night, or simply catching up with friends while working on assignments – the relaxed atmosphere is a welcome change from my usual study spaces.”

NIDHI

“My time with the Problem Lab, UW Data Science Club, and undergraduate research has been influential – expanding my CS academic exposure with the tenacity to execute my ideas and the experience to design rapid-prototyping processes for innovation.”

NAVIYA
**ADMISSIONS**

**HOW TO APPLY**

1. Apply online and pay fees through the Ontario Universities’ Application Centre (OUAC).
2. Watch for an acknowledgment email with your next steps and Waterloo ID number.
3. Submit any additional required documents, including your AIF, on time.
4. Accept your Offer of Admission through OUAC and submit your Residence Guarantee Application Form and deposit.

For detailed info:

uwaterloo.ca/math/future

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**AN ADMISSION INFORMATION FORM IS REQUIRED FOR ADMISSION!**

Your Admission Information Form (AIF) is submitted through Quest after you complete your OUAC application. It includes questions about your extracurriculars and work experience. It’s your opportunity to tell us what makes you a unique and well-rounded student and will help us make admissions decisions.

**TIPS**

- Show us how you’re involved in activities outside of the classroom and in the world around you
- Demonstrate your ability to manage multiple activities and priorities while performing at a high level
- Use the “Additional Information” fields to highlight what’s special or different about your extracurriculars, awards, and/or employment
- Strongly consider writing our Euclid Math Contest, Canadian Senior Math Contest, and/or Canadian Computing Competition

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**2023 REQUIREMENTS**

<table>
<thead>
<tr>
<th>PROGRAM (apply to)/ System of Study</th>
<th>REQUIRED COURSES</th>
<th>ADMISSION AVERAGE (includes required courses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration (Laurier) and Computer Science (Waterloo) Double Degree Co-op</td>
<td>Advanced Functions, Calculus and Vectors, any 12 U English, one other Grade 12 U course, Admission Information Form</td>
<td>Individual selection* from the mid 90s</td>
</tr>
<tr>
<td>Computer Science Co-op or regular</td>
<td>Advanced Functions, Calculus and Vectors, any 12 U English (min 75%), one other Grade 12 U course, Admission Information Form</td>
<td>Individual selection* from the low-to-mid 90s</td>
</tr>
<tr>
<td>Computing and Financial Management Co-op</td>
<td>Advanced Functions (min 70%), Calculus and Vectors (min 70%), Chemistry (min 70%), English (min 70%), Physics (min 70%), Admission Information Form, experience in developing well-structured modular programs is also required</td>
<td>Individual selection* from the low-to-mid 90s</td>
</tr>
</tbody>
</table>

*Individual selection refers to content submitted on the AIF. Admission decisions are strongly based on academic performance, but extracurricular activities listed on the AIF and a good contest score (if applicable), are also taken into consideration.

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**IT’S WORTH THE WAIT!**

In an effort to base our decisions on the most relevant grades possible, most Offers of Admission are made in mid-May. We base our final decisions on your interim or final grades in your admission average and your AIF. In some cases, a strong score on the CSMC, CCC, and/or Euclid contest can also help improve your chances of admission.
ENGLISH LANGUAGE REQUIREMENTS

If English is not your first language and your four most recent years of full-time education have not been taught in English, you’ll be required to submit one of these English language test scores.

<table>
<thead>
<tr>
<th>Internet-Based TOEFL</th>
<th>IELTS</th>
<th>CAEL</th>
<th>PTE (academic)</th>
<th>DUOLINGO</th>
<th>Cambridge Assessment (C1 or C2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 overall; 6.5 writing; 6.5 speaking</td>
<td>70 overall; 6.0 per band</td>
<td>63 overall; 65 writing; 65 speaking</td>
<td>120 overall; subscore results must be submitted</td>
<td>180 overall; 176 writing; 176 speaking; 176 reading; 176 listening</td>
<td></td>
</tr>
</tbody>
</table>

Get deadlines and other details: [uwaterloo.ca/future/elr](http://uwaterloo.ca/future/elr)

CONTESTS

Get contest preparation resources, registration details, and deadlines: [cemc.uwaterloo.ca](http://cemc.uwaterloo.ca)

EUCLID MATHEMATICS CONTEST

While the Euclid Mathematics Contest is not required for admission, your participation is strongly encouraged and is an asset to your application. You must participate in the Euclid Contest or CSMC to be considered for a Math entrance scholarship. The contest will be written in your high school in early April 2023.

CANADIAN SENIOR MATHEMATICS CONTEST (CSMC)

While the CSMC is not required for admission, your participation is strongly encouraged and is an asset to your application. You must participate in the CSMC or Euclid Contest to be considered for a Math entrance scholarship. The contest will be written in your high school in mid-November 2022.

CANADIAN COMPUTING COMPETITION (CCC)

The CCC is not required for admission, but a high score may be an asset for admission to Computer Science programs. The CCC will be written in mid-February 2023.

FINANCING YOUR EDUCATION

When thinking about university, it’s important to prepare a realistic budget for your first eight months (two terms).

- List your financial needs: tuition and other student fees, residence fees, books, supplies, and living expenses.

[Get contest preparation resources, registration details, and deadlines: [cemc.uwaterloo.ca](http://cemc.uwaterloo.ca)]

- List the financial resources available to fund your education: savings, RESP, and co-op earnings (if applicable).

- If you’re eligible, augment your resources with scholarships, provincial financial aid (such as the Ontario Student Assistance Program), and a Waterloo Entrance Bursary.

- You pay only four months (one term) at a time.

- Participate in contests and apply for entrance scholarships.

ENTRANCE SCHOLARSHIPS

<table>
<thead>
<tr>
<th>SCHOLARSHIPS</th>
<th>VALUE</th>
<th>REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>President’s and Merit Scholarships</td>
<td>Scholarships ranging in value from $1,000 to $5,000 - awarded to all students who meet marks criteria</td>
<td>Based on marks: 85-89.9% = $1,000, 90-94.9% = $2,000, ≥95% = $2,000+ (up to $5,000*)</td>
</tr>
<tr>
<td>Faculty of Mathematics Entrance Scholarships</td>
<td>Scholarships ranging in value from $10,000 to $50,000</td>
<td>Based on application, high academic performance, and outstanding extracurricular achievements</td>
</tr>
<tr>
<td>Faculty of Mathematics Entrance Scholarships</td>
<td>200 scholarships ranging in value from $1,000 to $40,000</td>
<td>Based on marks, AIF, Euclid Contest and/or CSMC</td>
</tr>
</tbody>
</table>

*Entrance scholarship plus $1,500 International Experience Award and/or $1,500 Research Award. International Experience and Research Awards are available in upper years, should you choose to claim them. Students must complete their first-year courses with an 80% average.

[Get contest preparation resources, registration details, and deadlines: [cemc.uwaterloo.ca](http://cemc.uwaterloo.ca)]

MATH/BRIDGE TO ACADEMIC SUCCESS IN ENGLISH (MATH/BASE)

If you’re a strong applicant who needs additional training to meet our English language requirement, you may receive an alternate offer of admission to MATH/BASE instead of a direct offer of admission to the program you applied to. Find out more: [uwaterloo.ca/base/math](http://uwaterloo.ca/base/math)
ACKNOWLEDGEMENT OF TRADITIONAL TERRITORY

The University of Waterloo acknowledges that much of our work takes place on the traditional territory of the Neutral, Anishinaabeg, and Haudenosaunee peoples. Our main campus is situated on the Haldimand Tract, the land granted to the Six Nations that includes six miles on each side of the Grand River.

YOU+WATERLOO

Our greatest impact happens together