Computer Science

CAREER GUIDE

What to do with a degree in ... COMPUTER SCIENCE

If you are questioning your career options or what others like you are doing with their degree this guide is a good place to start. It will provide you with industry specific information on careers, schools, associations, labour market information, and more.

Career & Leadership Development Centre

dal.ca/cldc
Overview of Major and Job options

Why take Computer Science?

From animation and gaming to artificial intelligence and robotics, computer science at Dalhousie is much more than just programming – it is the high-tech discipline at the forefront of innovation. As technology continues to develop, so too will the demand for computer science graduates.

Graduates from computer science have many career options and new career opportunities are constantly being created. IT careers have been identified as among the top five hottest jobs in Canada. Throughout North America, there’s a shortage of workers in the information technology sector. That makes this a great time to study computer science. There are far more jobs than there are potential employees, and careers in computer science have one of the highest paying starting salaries for undergrads - $60,000 per year is not unusual.

The career options available to you will depend on your focus of study, and your career interests and goals. When considering where to start keep in mind any significant projects you were involved in, internships, personal strengths, past employment, and other background information that may guide you.

A degree in Computer Science is a starting point for many rewarding and interesting career opportunities. Though you can end up in a variety of jobs with this degree, the skills you have developed may make you especially competitive in the following areas:

-Programmer
-Computer Engineer
-Computer Support
-IT Trainer
-User Interface Designer
-Quality Assurance Director
-ECommerce Analyst

-Web Developer
-Video Game Developer
-Business Systems Analyst
-Database Administrator
-Software Analyst
-IT Director
-Quality Assurance Analyst

-Systems Developer
-IT Sales Professional
-Technical Author
-Network Security Architect
-Telcommunications Specialist
-Mobile App Developer

A Bachelor of Computer Science acts as a great foundation for many other areas that compliment the IT field. Computer Science graduates sometimes pair their degrees with additional certifications or graduate degrees. By doing so they can better target a specific area of employment or open up a variety of other career options. Here are some options available to a Computer Science graduate who has completed additional training:

-Consultant
-Researcher
-Professor
-Lawyer

-GIS Specialist
-Pilot
-Teacher

-Scientist
-Chief Information Officer
-Graphic Designer

With multiple directions a Computer Science graduate can choose, it can be hard to know where to start when looking for a career. It would be of value to try out as many different jobs, positions, and experiences to help discover what you are good at and enjoy. This will help point you in the right direction when looking for a career path.
Opportunities in Your Program

Study Abroad - see the world while you study with the faculty of computer science’s exchange and study abroad programs. You can study in Germany, China, France, South Korea, and the UK. There are also several exchange scholarships as well.

Co-op - put theory into practice and earn money while you learn.

Connect with industry - Industry Showcase Seminars bring together industry, faculty, and students to build potential research partnerships.

FCS Mentorship Program - create meaningful connections with FCS alumni.

Community Outreach Class - in this class you work on real projects for real clients.

Opportunities at School

Involvement in extra curricular activities will make you a more competitive candidate for positions in your field. It will also give you the chance to focus on any specialties you are interested in. Consider joining a program like the ones listed:

- Dal Chapter of the Association for Computing Machinery
- DalConnects
- Women in Technology Society
- Web Development Society

The Dalhousie Co-curricular record (CCR) is a great way to track your extra-curricular involvement and display it for employers. Visit dal.ca/ccr to learn more.

Summer Jobs and Volunteer Work

Summer jobs and volunteering are great ways to gain experience, develop specialties, and discover what you like in a job. Check out these resources:

Federal Student Work Experience Program (FSWEP)
A program that provides post-secondary students with experience related to their field of study.

Talent Egg
This website provides postings for internships, co-ops, volunteer opportunities and entry level jobs.

Volunteer Halifax
A posting board where non-profits in Halifax post their volunteer opportunities and positions.

Professional Associations & Conferences

Professional associations and conferences are a great way to network with professionals in your field. This is especially true for graduate students. Below is a sample listing of professional associations that may be worth examining.

Canadian Association of Computer Science
Canadian Association of I.T. Professionals

cacsaic.org/
www.cips.ca/ComputerScience
Dalhousie University

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Undergraduate

Besides the broad selection of classes offered, we’ve also enhanced the Bachelor of Computer Science program by adding four new specializations. This ensures that Dalhousie grads, while already in demand, are even more marketable to employers. They are:

- Data Science
- Communication Technologies and Cyber Security
- Graphics, Gaming, and Media
- Artificial Intelligence and Intelligent Systems

Dalhousie’s Bachelor of Computer Science degree (with/without honours and co-op) is recognized by the CIPS Computer Science Accreditation Council. It is also the largest in Atlantic Canada and home of the first Institute for Big Data Analytics, in Canada.

Graduate Studies

Our flexible and multidisciplinary computer science graduate program options allow you to combine your studies in unique ways that meet your academic and personal interests, as well as your future career goals.

Dalhousie’s Faculty of Computer Science is a collaborative learning environment, where students work alongside world-class researchers and industry partners to advance knowledge in the field. Dalhousie has a very active graduate student community.

Admissions
All students must have the equivalent of a four-year undergraduate university degree and meet the admission requirements of the Faculty of Graduate Studies. Other requirements for each graduate program are available on the FCS website.
There are many other Computer Science programs in Canada and abroad. A great resource for examining post-secondary programs is Career Cruising. Career Cruising can be accessed through your Dalhousie MyCareer profile or by visiting the Career & Leadership Development Centre. Below are some notable Recreation programs:

**University of Toronto**

Location: Toronto, Ontario  
BA, MA, PhD  

**McGill University**

Location: Montréal, Québec  
BA, MA, PhD  

**University of British Columbia**

Location: Vancouver, British Columbia  
BA, MA, PhD  

**Simon Fraser University**

Location: Burnaby, British Columbia  
BA, MA, PhD  

**University of Waterloo**

Location: Waterloo, Ontario  
BA, MA, PhD  

**Université de Montréal**

Location: Montréal, Québec  
BA, MA, PhD  
Subject areas: Bioinformatics, Electronic Commerce, Mathematical and Computational Finance, Artificial Intelligence, Computer Graphics and Video Games, Quantum Computing.
When looking for directions to take your career it is important to first identify the sectors that Computer Science students work in. Looking at LinkedIn statistics on Dalhousie alumni, it appears that most alumni end up in the following fields:

- Information Technology
- Engineering
- Research
- Consulting
- Support
- Education
- Entrepreneurship
- Operations
- Program and Project Management

The following Labour Market Information (LMI) was taken from jobbank.gc.ca. It represents the 2013-2015 projection period in Nova Scotia. For jobs with a 4 digit number you can use that number on Job Bank to look up additional information on the field.

For more LMI on other jobs within your field click on 'Explore Careers'. If you search by occupations or education program then click on outlook for specific LMI.

Most outlooks for jobs in the computer science field appear to be strong for the future while only a small handful have weaker outlooks.

**Good Outlook ★★★ ★★★
(3 out of 3 stars)**

The best career outlooks for an individual with a Computer Science degree are Information Systems Analysts and Consultants (2171), Database Analysts and Data Administrators (2172), Software Engineers and Designers (2173), Computer Programmers and Interactive Media Developers (2174), Web Designers and Developers (2175), Computer Network Technicians (2281), User Support Technicians (2282), Systems Testing Technicians (2283)

**Fair Outlook ★★★ ★★★
(2 out of 3 stars)**

Jobs for Computer Science majors in Nova Scotia with a fair outlook include: Computer Engineers (2147), and Graphic Designers and Illustrators (5241)

**Limited Outlook ★★★★ ★★★
(1 out of 3 stars)**

The only job in the Computer Science field in Nova Scotia with a limited outlook is Telecommunication Carriers Managers (0131)
Online

My World Abroad - http://myworldabroad.com/
A global career site for individuals who want to go abroad to study, volunteer, intern, teach or work. To get full access to the site for free access the link in the career resource section of myCareer.

MyCareer - https://mycareer.dal.ca/
A resource for Dalhousie students to connect with jobs, employers and career related events on campus.

TalentEgg - tallentegg.ca
A great website to find internships, student jobs, and entry level positions. You can also find great advice and career guides. In addition to this, TalentEgg has challenges to help young people build transferable skills.

Tiger Society - https://tigersociety.dsu.ca/
This site lists all Dalhousie Societies and information about them. You can register to join a society through this site.

Career Beacon - careerbeacon.com
Provides job listings and corporate profiles with a strong presence in Nova Scotia and other Maritime Provinces. It can be a great resource for identifying what jobs are in your field and what skills employers are looking for.

Career Cruising - careercruising.com (log on available through MyCareer)
A comprehensive website that provides information to help you make informed choices about your career path.

Employment and Social Development Canada - National Occupational Classification
Contains occupational information and is used to find jobs that exist within Canada’s labour market.

Print


Breaking into the Game Industry (2012)

Becoming a Graphic Designer (2010)

What Color is your Parachute: A practical manual for job-hunters and career-changers (2014)

Other

Career Counselling - Dalhousie - Student Union Building 4th Floor
This free service is a confidential and collaborative process in which you work with a career counsellor who assists you in your educational and career decision-making

Career & Leadership Development Centre - Dalhousie - Student Union Building 4th Floor
This resource centre can provide you with all the career tools and resources you need. Drop in for assistance with resumes, cover letters, interviewing and more.

DALConnects - Leadership Program - dal.ca/dalconnects
This program will connect you with leadership opportunities and workshops.
IT Developer and Support for Enterprise Solutions

Position: Full Time  -  Salary: $65,000-$95,500  -  Hours: 40

We are seeking the best and brightest to join our growing team of professionals. We are looking for a full-time employee who is motivated and interested in learning using their IT skill set to improve information flow, reporting, and manufacturing in our organization.

Duties and Responsibilities

Design, develop, test, support, and maintain software application solutions within the ERP system or manufacturing environment to improve our manufacturing processes and supporting business functions.

Understanding implementation steps to ensure that changes to software systems do not have a negative effect on any users / stakeholders.

Provide End-User Support for the company's service infrastructure including network, application servers, database servers, web servers, file servers, workstations, phone systems, wireless networks, photocopiers and printers, content management system, document management systems, backup systems and disaster recovery systems.

Updating IT documentation to ensure network configuration drawings, inventory controls, and software license controls are up-to-date.

Communicate, provide guidance and mentoring to employees who are using technical solutions to increase productivity.

Qualifications & Skills

Post-secondary education in Computer Science

Programming and Scripting Experience for Microsoft technologies including: ASP.NET (C#), VBA, MS365, Microsoft Server Applications such as Exchange, Sharepoint, and Access, Server Operating Systems, MS SQL Server, Server, and Desktop Virtualization, and Computer Operating Systems.

Understanding of ERP Systems (SYSPRO) or Manufacturing Systems (AEGIS), and able to develop systems to enhance their use.


Knowledge/Experience in any of the following is an asset: IT in Manufacturing and/or Research environment or Business Intelligence systems, Dell EqualLogic SANs, Symantec Backup Exec, Backup Technologies, Software for Lighting Layouts, Software for Engineering Design (CAD), DNS / ISP-specific technologies for the Internet, and Storage Area Networks.

Understanding processes to support an IT Environment, Application Development, Troubleshooting, Training and Testing.

Energetic team player with a high degree of initiative and innovation.

Able to clearly communicate technical concepts or troubleshoot with employees who have varying levels of computer experience.

Able to work independently with minimal supervision, while handling multiple tasks and changing priorities.

Experience that can be developed by joining a school society or the Student Union.

Skills you can develop as a student or during a part-time or summer job, and further develop after graduation.

Learned during your degree and can be kept up-to-date by attending conferences and joining a professional association.
# Example Resume

**Charlie Computer**  
226 Vernon Street • Halifax, NS • B3R 5T9  
Phone: (902)-472-9760 • Email: charlie.computer@dal.ca

## Education and Certifications

<table>
<thead>
<tr>
<th>Bachelor Computer Science (Honours)</th>
<th>2012-2016</th>
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<tbody>
<tr>
<td>Dalhousie University, Halifax, NS</td>
<td></td>
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<tr>
<td>• GPA 3.6</td>
<td></td>
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<tr>
<td>• Senior Project: Data encryption using brain signals</td>
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| Microsoft Certified information technology professional | 2016 |
| .Net Certification From HCL Technology               | 2015 |
| Microsoft Exchange Server Certification              | 2015 |

## Technical Skills

- Languages: C#, VB.Net, C++, Java
- RDBMS Packages: MS-SQL Server
- Web Technologies: ASP.Net
- OS worked on: Windows 7, Windows XP, Windows VISTA, Windows 8
- Pattern and Architecture: Model-View-Control, 3-tier Architectures
- Able to explain highly technical concepts in accessible ways to clients and users

## Relevant Experience

### ITS Help Desk  
July 2015-Present

Dalhousie University, Halifax, NS  
- Provided various front-line technical support to faculty, staff and students  
- Met demanding pace, handling approximately 30 tickets daily  
- Trouble shot user problems while maintaining high level of customer service

### Software Engineering Co-op Student  
April 2015-August 2015

Coreperture Inc, Calgary, AB  
- Worked with a team of 4 to develop new classroom scheduling software for Universities and colleges  
- Developed user manuals for scheduling software  
- Liaised between various departments to develop in depth knowledge on products used to produce informative guides.

### Presenter (Digital Mediation)  
Feb 2014

Dal Lead, Dalhousie University, Halifax, NS  
- Prepared and presented a 45 minute workshop to 40 university students on conflict management through the use of technology  
- Listened and respectfully responded to student's questions regarding the presentation  
- Fostered a safe and inclusive environment in which students felt they were able to share personal stories
Robotics Camp Leader
Lego Robotics, Hamilton, ON

- Planned and delivered lessons and games around robotics to over 15 students aged 14-18
- Created engaging and educational lessons that were met with enthusiasm from students

Extracurricular Activities

Events Coordinator
Dalhousie Computer Science Society

- Planned monthly events and coordinated outreach to membership of 30+ students
- Planned the CSS Snowball, the biggest event of the year which showcases student accomplishments

Head Leader - Orientation Week
Leader - Orientation Week
DSU, Dalhousie University, Halifax, NS

- Coordinated a diverse team of 6 orientation leaders where we created, organized, and implemented various strategies that were aimed to engage first year students which included inclusive house cheers and social gathering to promote a welcoming and respectful environment at Dalhousie
- Communicated actively to students by developing a strategic marketing strategy involving the orientation leaders which resulted in an increasing number of students attending each event

Awards and Certifications

Dean's List
Dalhousie University

- 2012-2015

Change Agent Certificate
DALConnects, Dalhousie University

- Volunteered more than 60 hours, attended workshops, and wrote a reflective assignment

DSU Certificate of Distinction
Dalhousie Impact Award

- Awarded based on demonstration of significant contributions to campus life

- 2014

- 2015
For more information, comments, or questions please contact:
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