workforce WindsorEssex

THE STATE OF TECH

INSIGHTS INTO THE TECH SECTOR IN WINDSOR-ESSEX

Canada EMPLOYMENT ONTARIO Ontario

This Employment Ontario project is funded in part by the Government of Canada and the Government of Ontario.

Workforce WindsorEssex is a workforce and community development board whose mission is to lead regional employment and community planning for the development of a strong and sustainable workforce.

Workforce WindsorEssex is an experienced leader in the development of regional labour market tools, research, guides, and events that create positive change in the local labour market while saving others time and effort. These resources, created in close coordination with employment, education, and industry partners, are designed to help jobseekers, employers, students, and educators, as well as the community, make more informed labour market decisions using locally-responsive, data-rich, and unbiased resources.

To learn more about Workforce WindsorEssex and view our tools and resources, visit
www.workforcewindsoressex.com

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About the Author

Mikal (Kal) Fakhreddin is a Project Coordinator & Research Analyst at Workforce WindsorEssex. She holds a Master's Degree in Political Science and a Bachelor's Degree in International Relations and Development Studies with minors in French and Sociology from the University of Windsor. She has led and contributed to many projects at Workforce WindsorEssex, including the Newcomers in Agri-food Report, the Remote Work Report, and Manufacturing Day. Kal's studies have sparked an ardent interest in diversity and migration in the region, and she is excited to continue her work with the research team at Workforce WindsorEssex.

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Introduction

The Information and Communication Technology sector in Windsor-Essex has been experiencing significant growth for over a decade. Leading innovation and exemplary educational programs have propelled the region toward a thriving tech industry. Windsor-Essex produces the technology as well as the talent, but it continues to experience barriers to further growth. Most notably, lower average wages and the rise of remote work have contributed to a considerable tech brain drain in which local talent is relocating to other regions for tech employment. While remote work has presented its own set of challenges, it has also brought about significant benefits for certain regions. The 2022 Technology Council of North America Report highlighted that Windsor experienced the most substantial increase in tech workforce in Canada, with a 28% growth in tech workers from April 2022 to March 2023.[1]

This report highlights the impact and vitality of the tech sector in Windsor-Essex. Tech jobs expand over several key industries, providing essential support to the region, and its importance to Manufacturing and Agriculture, the two largest sectors in the region, continues to grow. According to CompTIA's Cyberstates report, 59% of all technology-related jobs are located outside of the tech industry.[2] By demonstrating the expansive influence of the local tech industry, from education to employment, we can encourage further investments, keep tech workers local, and attract new tech talent to support the industry further.

[1] Robinson, Seth. "The Real Story on Tech Jobs." CompTIA. September 9, 2022.
[2] Hardy, Alina. "Canada Welcomed More Than 32,000 Tech Workers Over the Past 12 Months, Report Finds." Technology Councils of North America. July 11, 2023.

Methodology

This report sources data on the number of employed tech workers, top hiring companies, average wages, growth rate, and top skills from Lightcast, a labour market analytics site, and Workforce WindsorEssex's Labour Market Insights Report by isolating National Occupation Classification (NOC) codes that pertain to tech work (see Appendix for full list of NOCs) in Windsor-Essex. Insights regarding local employment, talent, and the tech ecosystem were acquired through consultations, conducted by Workforce WindsorEssex, with local tech employers, workers, and community partners. Data on enrollment and graduates was sourced from the University of Windsor Data Centre and St. Clair College Registrar. Job posting and occupation data was sourced from Workforce WindsorEssex's Job Demand Report and Career Library. Finally, best practices and recommendations were developed with the support of online news sources and academic articles.

Tech in Windsor-Essex

5,844 jobs in Windsor-Essex (2023)[3]

$74,105 Average Wage (2023)[4]

+8.6% Projected Job Growth (2028)[5]

The tech industry in Windsor-Essex is as unique as its surroundings. Strategically located between Detroit and the Greater Toronto Area (GTA), Windsor-Essex boasts access to both Canadian and American markets and employment. Windsor tech workers and residents benefit from affordable housing and a lower cost of living, providing them with many opportunities to work remotely or partake in cross-border work while living in a more affordable city. Meanwhile, local tech businesses benefit from access to international markets, strong tech talent, and low-cost labour.

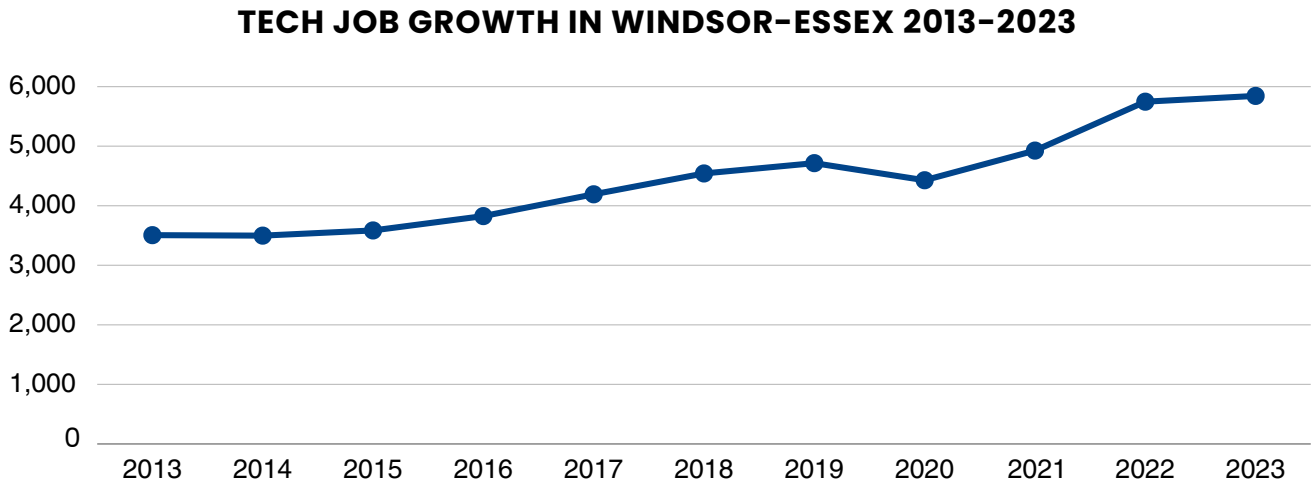


Figure 1. Tech Job Growth in Windsor-Essex 2013-2023.[6]

[3] Lightcast, https://lightcast.io/, 2023.
[4] ibid.
[5] ibid.
[6] ibid.

Local Demographics

The following data is sourced from the Statistics Canada 2021 Census of Population by isolating 3-digit NOCs that made up the highest concentration of tech occupations within Windsor-Essex (see Appendix for full list of NOCs).

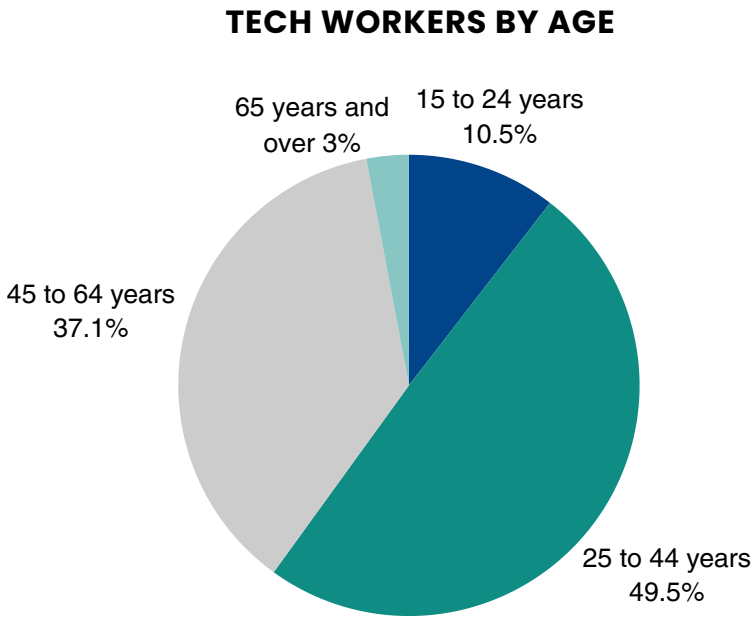


Figure 2. Tech Workers by Age.[7]

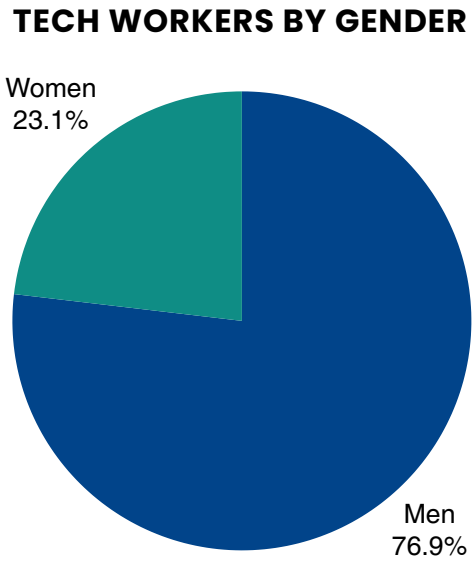


Figure 3. Tech Workers by Gender.[8]

[7] Statistics Canada. 2021 Census of Population.
[8] ibid.

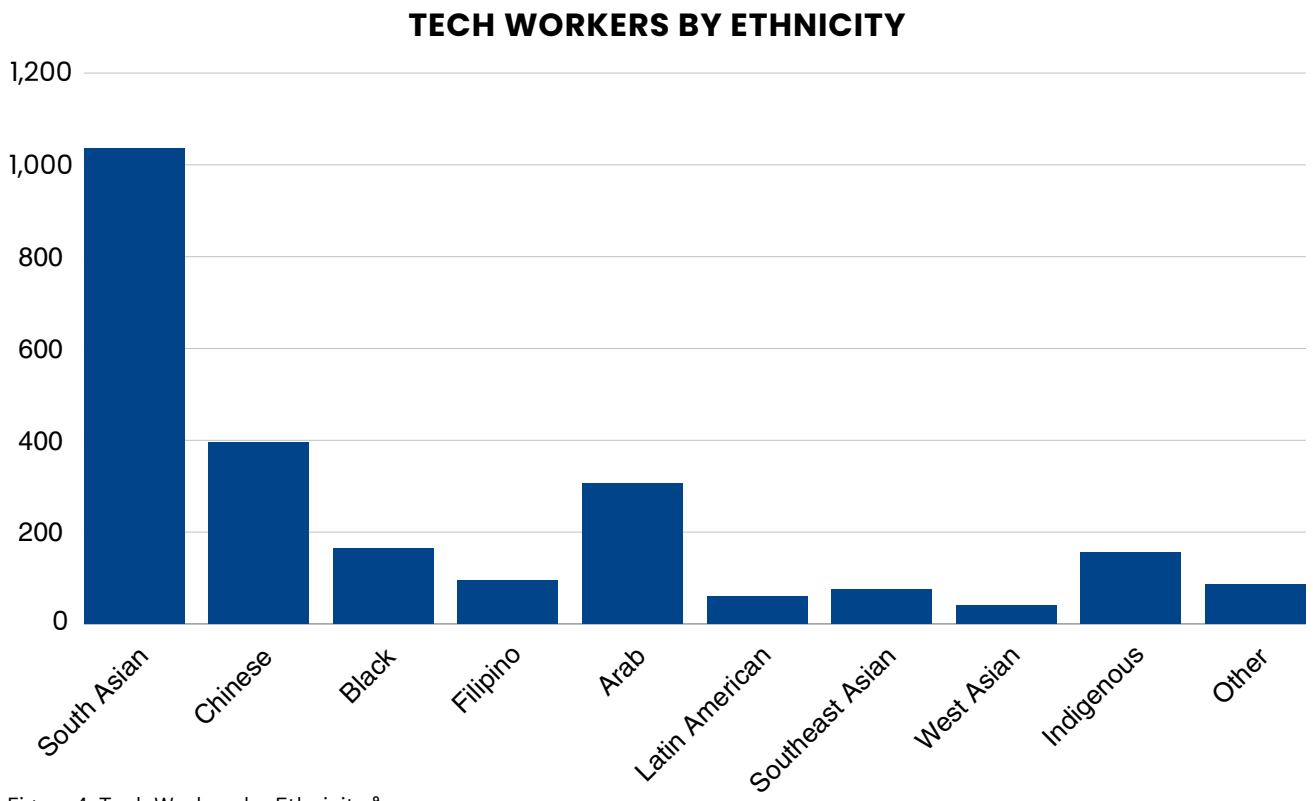


Figure 4. Tech Workers by Ethnicity.[9]

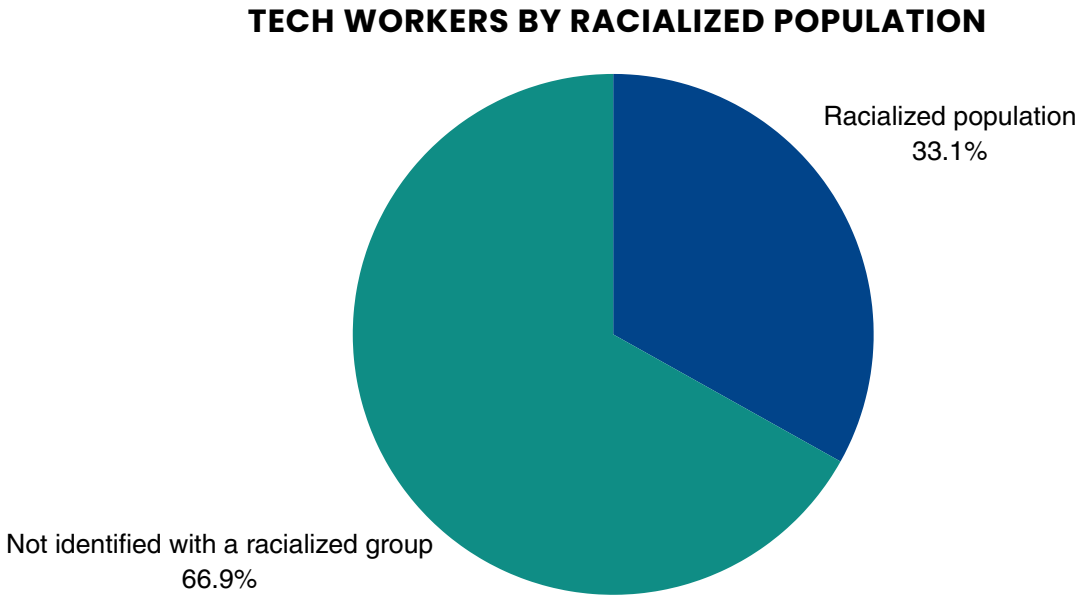


Figure 5. Tech Workers by Racialized Population.[10]

[9] Statistics Canada. 2021 Census of Population.
[10] ibid.

Top Hiring Sectors

Below is a list of the top hiring sectors for tech jobs in Windsor-Essex from January 2023 to December 2023, accompanied by their appropriate North American Industry Classification System (NAICS) codes and the number of jobs posted throughout the year. This data was sourced from Workforce WindsorEssex's Job Demand Report.[11]

NUMBER OF JOB POSTINGS FOR TECH JOBS IN WINDSOR-ESSEX

Industry	Number of Job Postings
61 - Educational Services	584
41 - Wholesale Trade	386
56 - Administrative and Support, Waste Management and Remediation	293
54 - Professional, Scientific and Technical Services	190
11 - Agriculture, Forestry, Fishing and Hunting	184
51 - Information and Cultural Industries	148
91 - Public Administration	147
23 - Construction	117
81 - Other Service (Except Public Administration)	50
31,32,33 - Manufacturing	14

Table 1. Number of Job Postings for Tech Jobs in Windsor-Essex, organized by NAICs.

[11] Workforce WindsorEssex. "Labour Market Insights Report." December 2023. https://www.workforcewindsoressex.com/lmi-report/?e8_page=snapshot&date=2024-01&region-type=regions&noc-version=2021.

Job Post Trends

The chart below demonstrates the trends in local job posts from January 2023 to December 2023, sourced from Workforce WindsorEssex's Job Demand Report. Organized by the number of companies hiring, new job posts, and active job posts, we can see a clear consistency in the number of local job postings, meaning there are always available opportunities for tech talent, with an average of 55 new job posts each month.

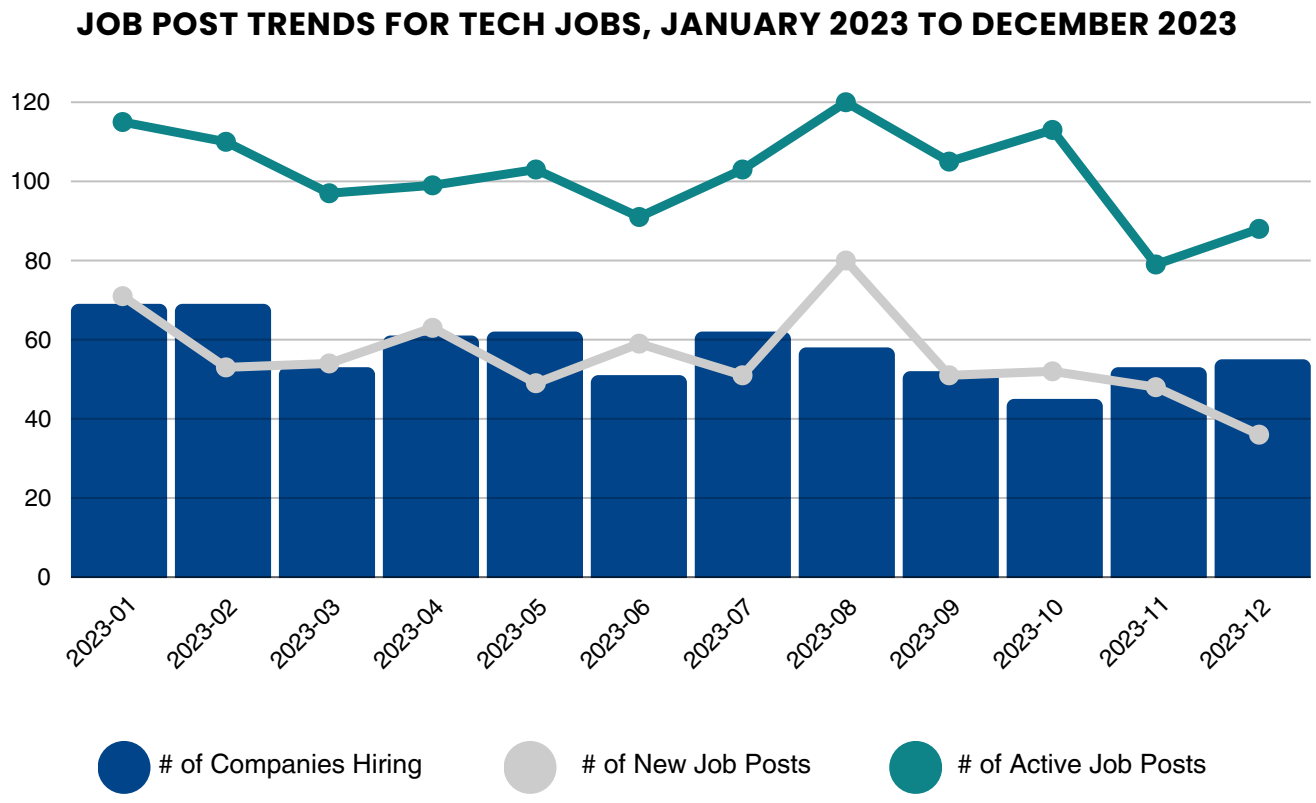


Figure 6. Job Post Trends for Tech Jobs, January 2023 to December 2023.[12]

[12] Workforce WindsorEssex. "Labour Market Insights Report." December 2023. https://www.workforcewindsoressex.com/lmi-report/?e8_page=snapshot&date=2024-01&region-type=regions&noc-version=2021.

Top Hiring Employers

Below is a list of the top 10 hiring employers for tech jobs in Windsor-Essex from January 2023 to December 2023. These companies span multiple industries, including Manufacturing and Agriculture, which are frequently hiring to support their IT infrastructure and automation projects.[13] It should be noted that the diagram below excludes local technology companies with proprietary, self-managed, and non-interoperable job platforms, as well as the myriad of international companies that recruit residents of Windsor-Essex for remote positions within their organizations.

TOP HIRING EMPLOYERS

Company	Industry
RACAR Canada Inc.	Professional, Scientific, and Technical Services
Stantec	Professional, Scientific and Technical Services
Stellantis	Professional, Scientific and Technical Services
University of Windsor	Professional, Scientific and Technical Services
Mucci Farms Ltd.	Manufacturing
The Electromac Group	Educational Services
Asamaka Industries Inc.	Agriculture
V2Soft Inc.	Professional, Scientific and Technical Services
Valiant TMS	Manufacturing
DataRealm	Professional, Scientific and Technical Services

Table 2. Top 10 Hiring Employers for Tech Jobs in Windsor-Essex.

[13] Workforce WindsorEssex. “Labour Market Insights Report.” December 2023. https://www.workforcewindsoressex.com/lmi-report/?e8_page=snapshot&date=2024-01&region-type=regions&noc-version=2021.

Top Occupations

Below is a list of the top occupations in tech posted by employers from January 2023 to December 2023. There were a total of 708 unique job postings from 212 competing employers in the region. Job titles are linked to Workforce WindsorEssex's Career Library, with their respective NOC codes.[14]

- **21310 - Electrical and Electronics Engineers**
- **22221 - User Support Technicians**
- **20012 - Computer and Information Systems Managers**
- **22220 - Computer Network and Web Technicians**
- **21311 - Computer Engineers (Except Software Engineers and Designers)**
- **22222 - Information Systems Testing Technicians**
- **21210 - Mathematicians, Statisticians and Actuaries**
- **21231 - Software Engineers and Designers**

Top Skills

Below is a list of the top 10 specialized and common skills posted by employers between January 2023 to December 2023.[15]

Top Specialized Skills

- Computer Science
- Project Management
- Automation
- Electrical Engineering
- Operating Systems
- Information Systems
- Data Analysis
- Business Requirements
- SQL (Programming Language)
- Python (Programming Language)

Top Soft Skills

- Communication
- Management
- Problem Solving
- Detail Oriented
- Customer Service
- Self-Motivation
- Leadership
- Writing
- Interpersonal Communications

[14] Workforce WindsorEssex. "Labour Market Insights Report." December 2023. https://www.workforcewindsoressex.com/lmi-report/?e8_page=snapshot&date=2024-01&region-type=regions&noc-version=2021.
[15] Ibid.

Job Multiplier

The visual below demonstrates how jobs can multiply when there's an increase in tech jobs in Windsor-Essex. This data was acquired by running an input-output scenario on Lightcast[16] with the following 4-digit NAICs:

- **5112 - Software Publishers**
- **5182 - Data Processing, Hosting and Related Services**
- **5414 - Specialized Design Services**
- **5415 - Computer Systems Design and Related Services**
- **5416 - Management, Scientific and Technical Consulting Services**
- **5419 - Other Professional, Scientific and Technical Services**

An increase in 10 jobs in the industries listed above results in an average multiplier of 1.69, meaning seven new jobs would be created from the initial increase. For example, if there was an increase in 20 jobs, 13 new jobs would be created from that change, and so on. These new jobs could be direct: a result of new input purchases by the initially changed industries; indirect: a result of the subsequent ripple effect in further supply chains; or induced: changes due to the impact of the new wages, investment, and government spending created by the initial, direct, and indirect change.

The industries that are most likely to experience an increase in jobs would be Professional, Scientific and Technical Services; Information and Cultural Industries; Administrative and Support, Waste Management and Remediation Services; and Retail Trade. The visual below demonstrates the increase in jobs as a direct, indirect, and induced result of an increase in jobs in tech-focused industries.

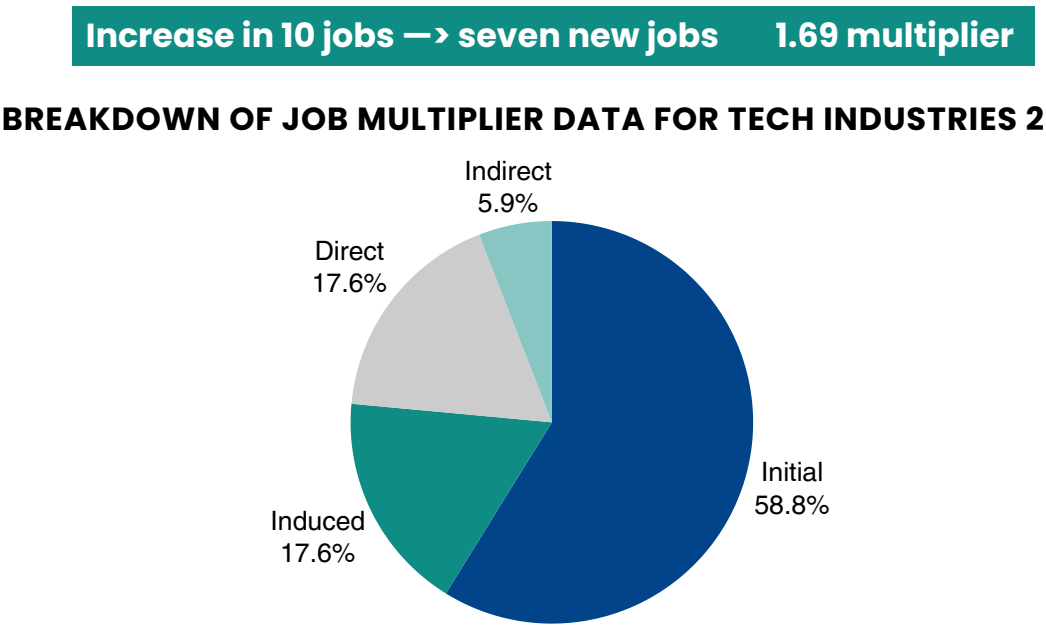


Figure 7. Breakdown of Job Multiplier Data for Tech Industries 2021.

[16] Lightcast, https://lightcast.io/, 2023.

Tech Comparatively: Canada vs Windsor-Essex

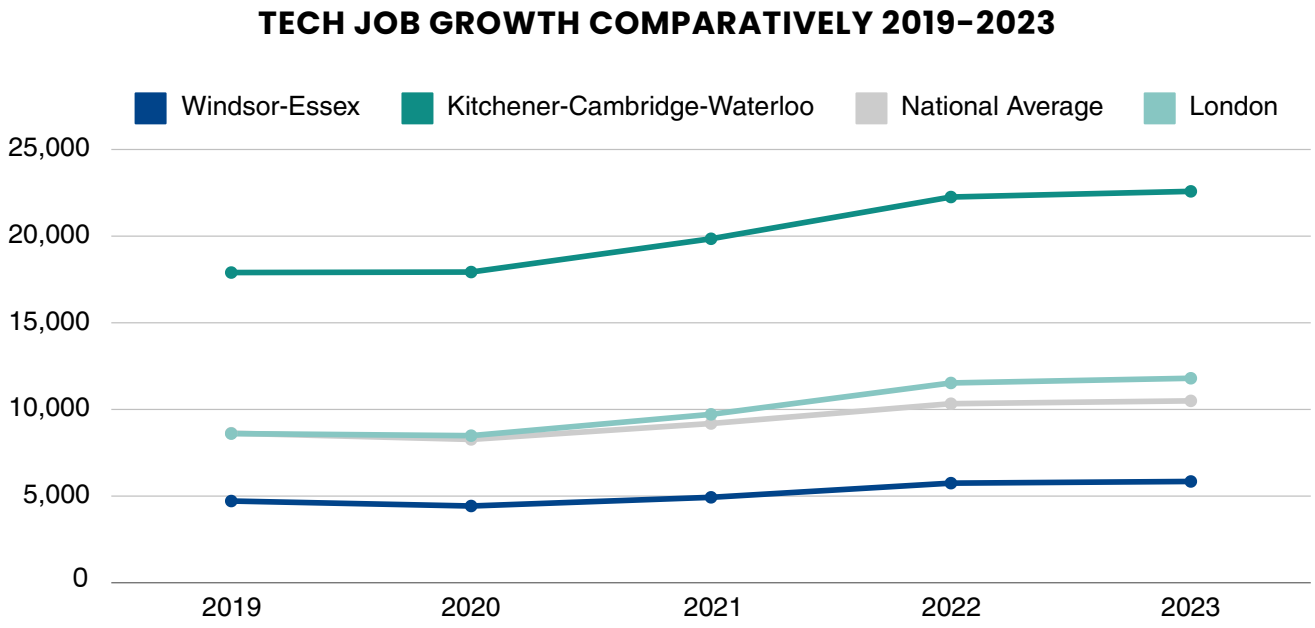


Figure 8. Tech Job Growth Comparatively 2019-2023.[17]

Though the local tech sector has experienced significant growth over the past five years, our local sector still falls short when we compare it to the national average. The chart above compares the number of tech jobs in Windsor-Essex over the past five years with the national average (adjusted for region size) and the number of tech jobs in the Kitchener-Cambridge-Waterloo CMA, an exemplary model of a booming tech hub (though it should be noted that the region has a population of 575,847 compared to Windsor's 422,630) and the number of tech jobs in London, a similar city to Windsor-Essex.[18] Despite having a relatively lower number of tech workers compared to the national average and London, Windsor-Essex has experienced a 24% increase in the number of jobs in tech from 2019 to 2023, while the national growth average is 21%, meaning Windsor is growing consistently and faster than average.

[17] Lightcast, https://lightcast.io/, 2023.
[18] Statistics Canada. 2021 Census of Population.

Wages Comparatively: Windsor-Essex, Canada, and the United States

Windsor has room to enhance its compensation packages, which could significantly contribute to retaining tech talent. The median salary in Windsor for tech positions is $74,105, while the national median salary is $80,720, Kitchener-Cambridge-Waterloo is well above at $90,928, and London falls below at $72,722. With wages that are 8% lower than the national median and 18% lower than K-C-W, local tech talent is more motivated to relocate or work remotely for tech hot spots, creating local employment gaps. On the other hand, with the accessibility of remote work, it has become increasingly easy for local talent to seek better compensation elsewhere while taking advantage of the lower cost of living in Windsor-Essex - emphasized by a 41% lower housing cost than the provincial average, making it easier to retain our residents.[19]

Having to compete with the national wage median has been a barrier for Windsor; however, the city also has the unique advantage of cross-border employment. The pay gap between Canada and the U.S. is 46%, and 36% when it comes to full-time and full-year workers only.[20] Though the appeal of American wages has created local employment gaps, it has also presented local tech talent with a great opportunity to live within Windsor-Essex, where they reap the benefits of a lower cost of living and affordable housing for high U.S. compensation. The chart below demonstrates the median wages for non-tech workers and tech workers in Canada and the U.S. The Canadian median tech wage is nearly $40,000 less than the American median tech wage, but we can see that the median wage for tech in Canada is still much higher than non-tech, demonstrating the overall higher value of tech work.

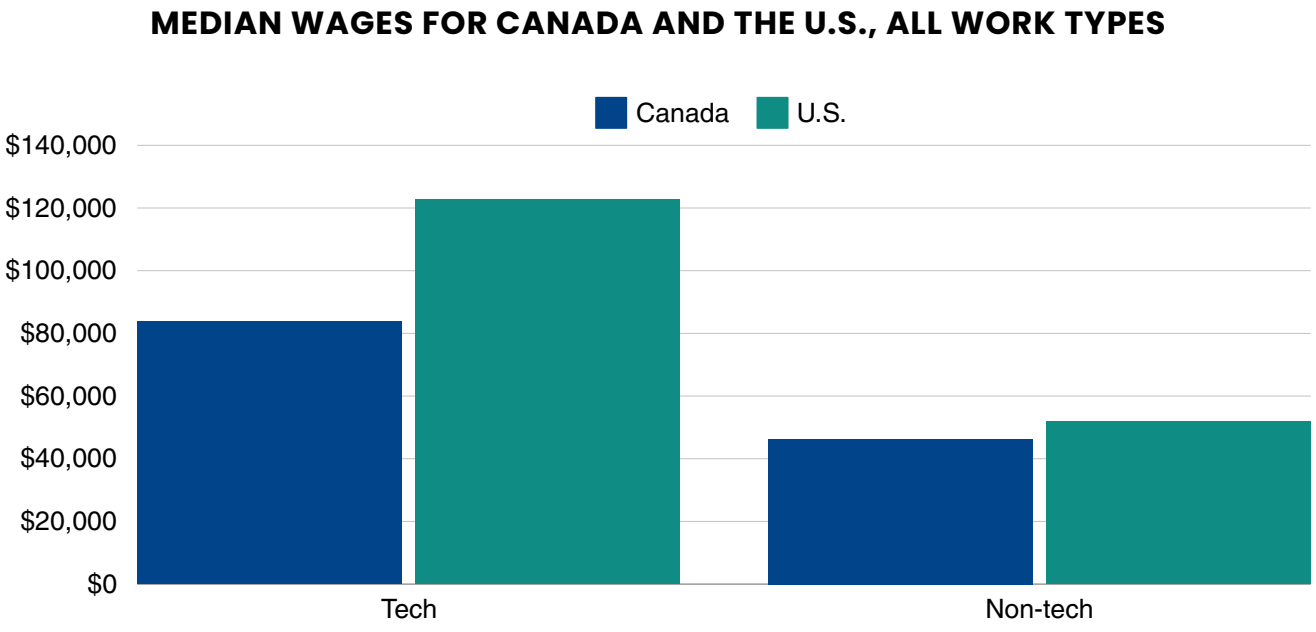


Figure 9. Median Wages for Canada and the U.S. 2021, Tech and Non-tech.[21]

[19] "Why WindsorEssex." Invest WindsorEssex. 2023.
[20] "Mind the Gap: Compensation Disparity Between Canadian and American Technology Workers., Future Skills Centre. October 2023. https://dais.ca/reports/mind-the-gap-compensation-disparity-between-canadian-and-american-technology-workers/#:~:text=In%20percentage%20terms%2C%20the%20incremental,24.4%20percent%20in%20the%20US.
[21] ibid.

When it comes to gender and race, both Canada and the U.S. have demonstrated significant gender and racial pay gaps. When it comes to tech in Canada, women make almost $13,000 less than their male counterparts, as demonstrated in the chart below, while the median wage gap outside of tech is about $10,000. Comparatively, there is a $26,000 gender wage gap in the U.S.[22]

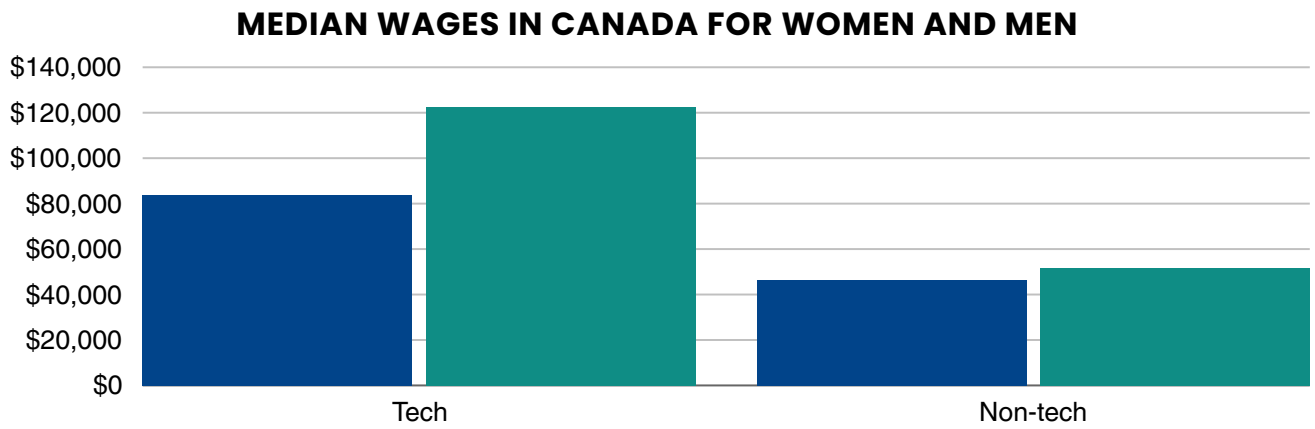


Figure 10. Median Wages in Canada for Women and Men 2021, Tech and Non-Tech.[23]

When it comes to race, Black and Arab Canadian tech workers make a disproportionately lower wage than other visible and non-visible minorities, with a difference of nearly $20,000.

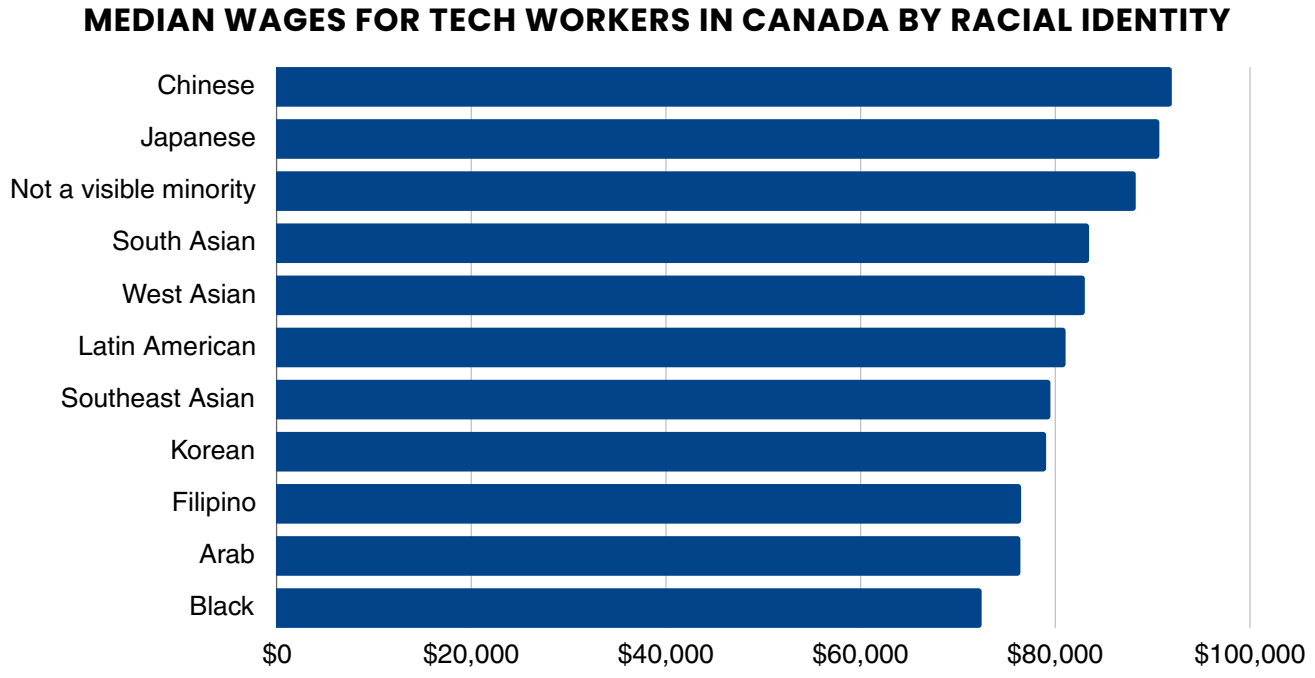


Figure 11. Median Wages for Tech Workers in Canada by Racial Identity 2021.[24]

[22] "Mind the Gap: Compensation Disparity Between Canadian and American Technology Workers., Future Skills Centre. October 2023. https://dais.ca/reports/mind-the-gap-compensation-disparity-between-canadian-and-american-technology-workers/#:~:text=In%20percentage%20terms%2C%20the%20incremental,24.4%20percent%20in%20the%20US.
[23] ibid.
[24] ibid.

Education

This section outlines local tech programs at the secondary and post-secondary levels. According to consultations with local tech businesses, employers have had positive experiences with new grads at both the college and university levels. Most stated that the co-operative education (co-op) programs are beneficial to the business, as well as the students, and many co-op students are hired after graduation. Since many tech businesses utilize a specific set of practices, new grads require a lot of training once they enter employment; however, employers stated that they were satisfied with their base knowledge and happy to invest in shaping the type of employee they need from there. Some critiques on local education included creating standardized testing for tech students, so tech grads are guaranteed to enter the industry with a standard set of knowledge. Other critiques mention how educational institutions should consider maintaining a higher level of communication with local tech businesses to keep up with industry needs. It would be beneficial to local businesses if tech students were taught to use the most up-to-date coding programs, and since the industry changes so rapidly, creating and maintaining a line of communication between education and industry would aid students and businesses alike.

Secondary

Greater Essex County District School Board (GECDSB)

The **Specialist High Skills Major (SHSM)** is a specialized program that allows students to gain credits toward their high school diplomas in a specific sector. One of many options for specialization, the Information and Communications Technology SHSM program is offered in three secondary schools within the GECDSB, with 60 grade 11 and 12 students currently enrolled. Students in this program have participated in industry-partnered experiences, and the program at Vincent Massey Secondary School is linked to their FIRST Robotics competition team. These SHSM programs aim to develop skill sets directly transferable to the EV sector in Windsor-Essex.

Moreover, the GECDSB has focused on effective outreach, targeting grade 7 students in 2022-23 to explore different sectors. Their outreach efforts have engaged over 550 grade 7 students and 45 elementary staff from 16 schools. To further promote the tech sector, portable outreach continues through a newly acquired SHSM and Ontario Youth Apprenticeship Program (OYAP) Tech Trailer, enabling the board to bring tools, projects, and materials to community events and elementary schools for promotion.

GECDSB also offers a range of technology courses offering students opportunities to learn and develop skills through interactive and hands-on learning environments, coined TakeTECH. These courses cover diverse areas such as Communications Technology, Computer Technology, Construction Technology, Exploring Technology, Manufacturing Technology, Technological Design, and Transportation Technology. Students can customize their education through these courses, enhancing their prospects for success in school, career, and life.

Windsor-Essex Catholic District School Board (WECDSB)

To prepare their students for a future in tech, the WECDSB initiated a revitalization of tech programs, starting with its Construction Academy, which directly feeds talent into the manufacturing, construction, and skilled trades workforce. Science, Technology, Engineering, and Mathematics (STEM) programs have also been implemented from junior kindergarten to grade 6, emphasizing science, technology, engineering, and math, with a focus on robotics.

There are currently three secondary schools within the WECDSB established STEM programs, and one more will be added in the fall, all aimed at developing specialized tech and robotics skills for the EV sector.

WECDSB also collaborates closely with post-secondary institutions and industry partners in developing programs and curriculum for students. Industry partners have subsidized programming and donated materials directly to programs and classrooms to support the school board and further strengthen ties. Moreover, the WECDSB has initiated many outreach and career guidance efforts to educate and assist their students in their future careers. They've conducted extensive outreach, including communication to families of students in grades 7-12, announcing the development of a skilled trades centre. Efforts have also been made to train guidance counsellors to better inform them about viable career paths for students, with a focus on introducing various career path options regularly.

Post-Secondary

University of Windsor

In the **Computer Science programs** at the University of Windsor, students learn how to use existing computer programming languages to create content and solutions to problems; design, adapt, and modify computer programming languages, simulations, and systems analysis to address specific needs; and thoroughly understand the complex ways in which modern digital technologies store, transmit, and process information across networks. **Programs in this department include:**

Business Administration and Computer Science (BComm)

This program combines STEM and business to emphasize technology in a business setting. This is a program with hands-on learning and many networking opportunities to give students a competitive advantage in the worlds of computer programming, gaming, banking, pensions, and more.

Bachelor of Information Technology (BIT)

Upon completing this program, students will leave with the skills and experience to be an IT professional with practical expertise in basic hardware concepts and in-depth knowledge of software development, programming, data management systems, web and mobile applications, customer services systems, and networks.

Computer Science (BSC)

This general three-year program offers hands-on learning opportunities and support as students learn computer languages, operation systems, and the mathematics behind computation. University degree holders from another subject area can fast-track through this program.

Computer Science (BSC)
- Applied Computing (co-op available)

In this program, the University partners with industry to get students career-ready and lets them specialize in the area that interests them most. If students choose to pursue a paid co-op, they will find flexible sequencing of four, eight, or 12 months.

Computer Science (BSC)
- Computer Information Systems (co-op available)

In this program, students will graduate with a strong foundation in the application of computer technology in industry and commerce. They will also gain insight into the latest technologies from dedicated professors.

Computer Science (BSC)
- Software Engineering Specialization (co-op available)

Students develop the hard skills they'll need for creating, designing, and maintaining software in this specialized program. Students will learn to apply the technologies and practices from computer science, project management, engineering, application domains, interface design, digital asset management, and other fields to software engineering.

Enrollment and Graduation Data

The charts below demonstrate the number of students that have enrolled in Year 1 computer science programs and the number of degrees awarded (Ph.D, Masters, Bachelors, and undergraduate certificates) at the University of Windsor from 2019 to 2022. The number of enrollees has increased over the past four years, averaging over 200 students every year. Similarly, the number of awarded bachelors and masters degrees has increased in the past two years, while PhDs have experienced a minor decrease.

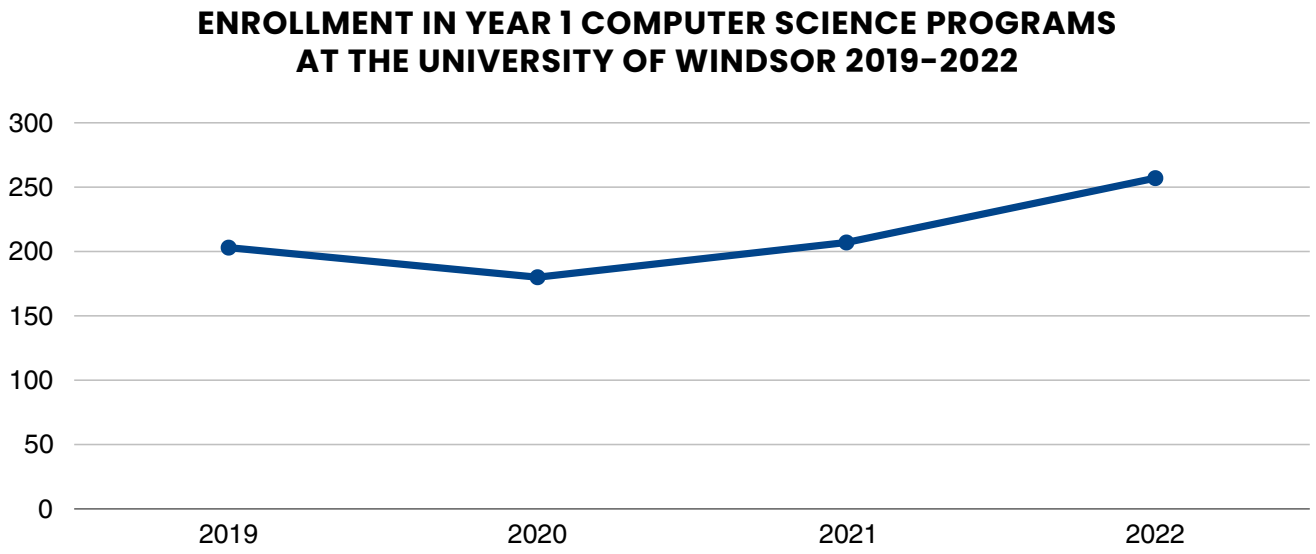


Figure 12. Enrollment in Year 1 Computer Science Programs at the University of Windsor 2019-2022.[25]

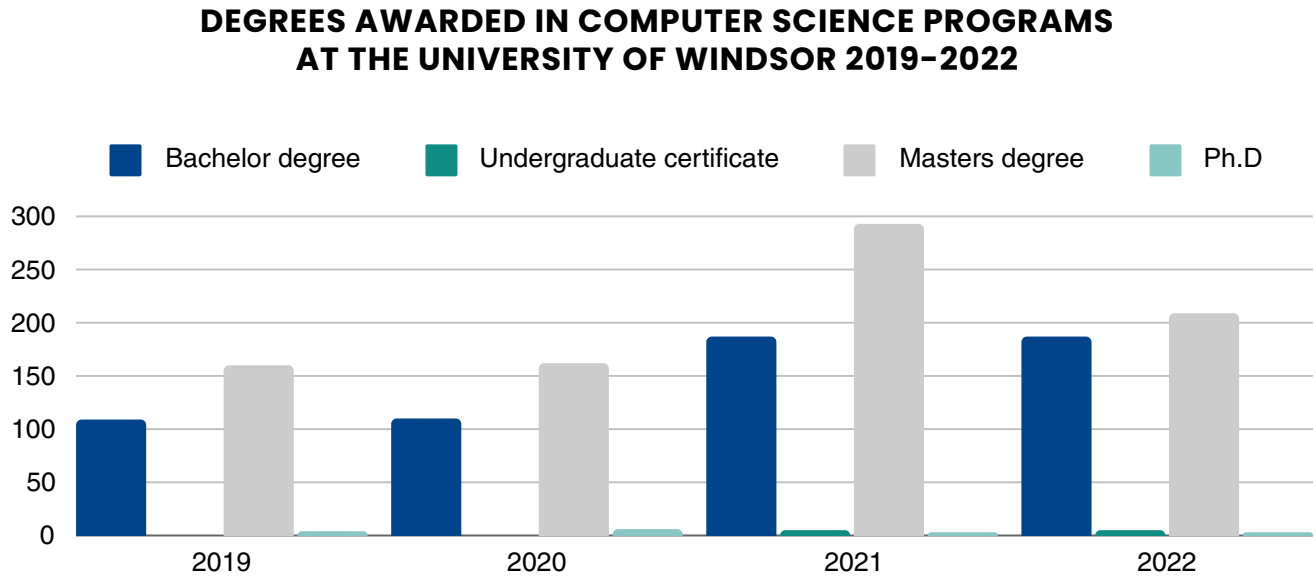


Figure 13. Degrees Awarded in Computer Science Programs at University of Windsor 2019-2022.[26]

[25] "Data Centre." University of Windsor. https://www.uwindsor.ca/institutional-analysis/303/data-centre.
[26] ibid.

Gender

The charts below demonstrate the number of undergraduate and graduate degrees awarded in computer science programs at the University of Windsor from 2019 to 2022, organized by gender. Women remain underrepresented in tech, accounting for only 18% of the undergraduate degrees awarded over the past four years. However, when it comes to advanced education, women account for 37% of all graduate degrees awarded over the past four years.[27] The significant increase in representation on the graduate level could be due to existing barriers to entry for women and, in response, women feeling the need to bolster their odds by pursuing advanced degrees.

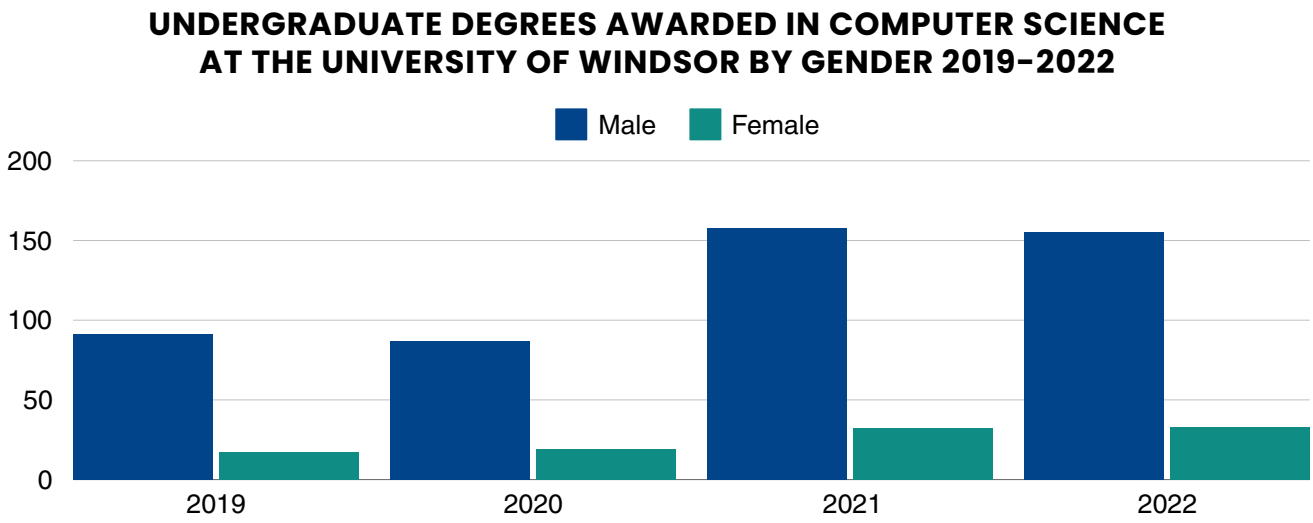


Figure 14. Undergraduate Degrees Awarded in Computer Science at the University of Windsor by Gender 2019-2022.[28]

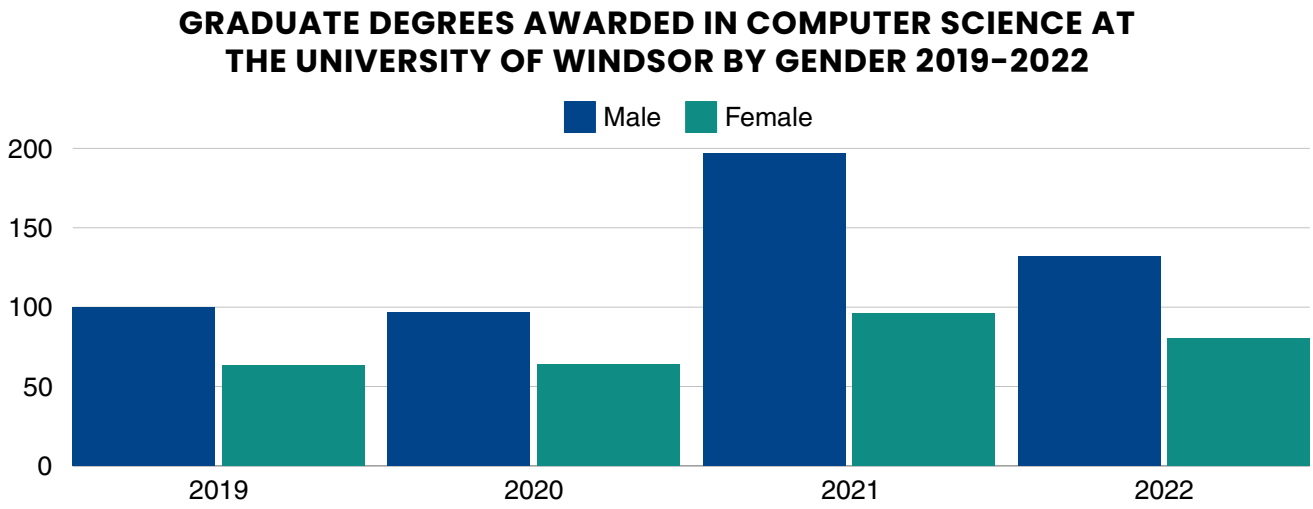


Figure 15. Graduate Degrees Awarded in Computer Science at the University of Windsor by Gender 2019-2022.[29]

[27] "Data Centre." University of Windsor. https://www.uwindsor.ca/institutional-analysis/303/data-centre.
[28] ibid.
[29] ibid.

International Students

The charts below demonstrate the number of undergraduate and graduate degrees awarded in computer science programs at the University of Windsor from 2019 to 2022, organized by citizenship. While international students represent approximately 25% of all undergraduate degrees awarded over the past four years, they make up 97% of all graduate degrees awarded in the same timeframe.[30] Comparatively, international students at the University of Waterloo have been awarded 57% of the total number of graduate degrees over the past four years. Considering international students make up the majority of advanced tech talent, efforts should be made to better connect these students to local industries so they remain in Windsor-Essex and fill the tech gap.

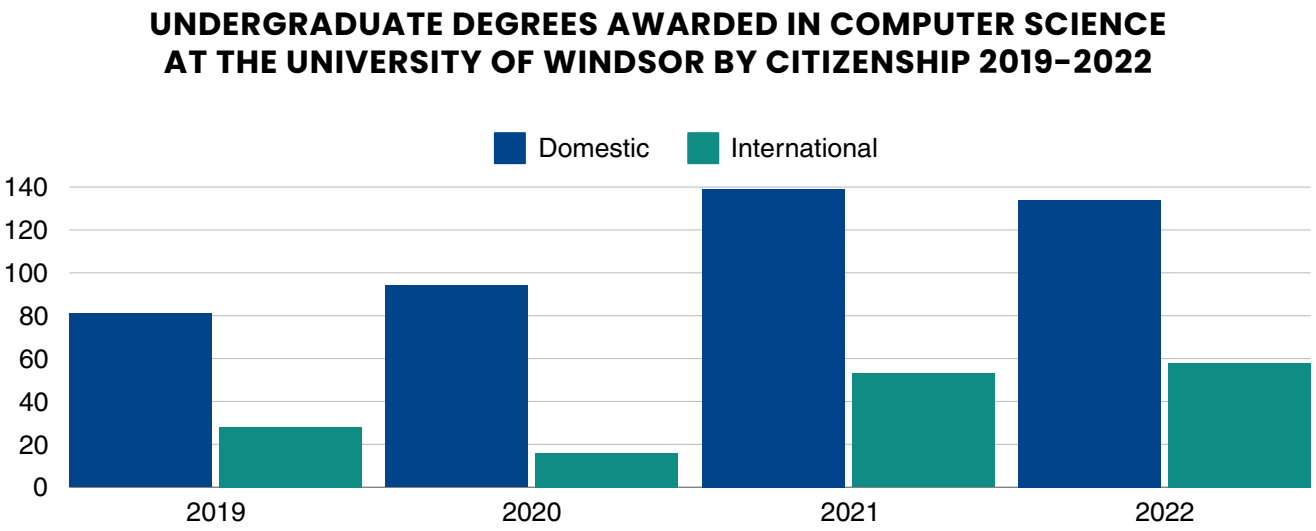


Figure 16. Undergraduate Degrees Awarded in Computer Science at the University of Windsor by Citizenship 2019-2022.[31]

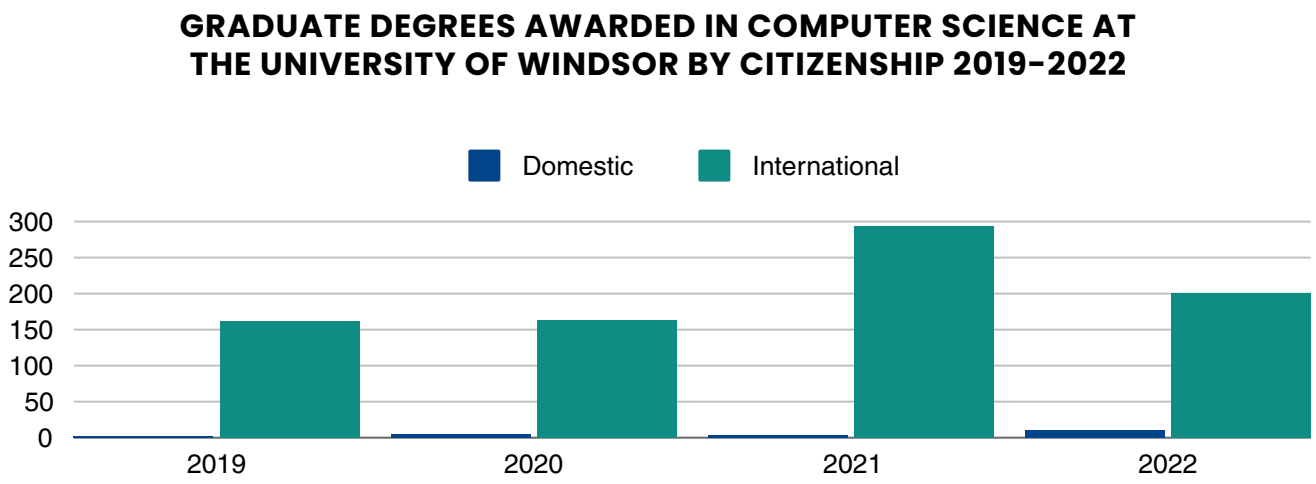


Figure 17. Graduate Degrees Awarded in Computer Science at the University of Windsor by Citizenship 2019-2022.[32]

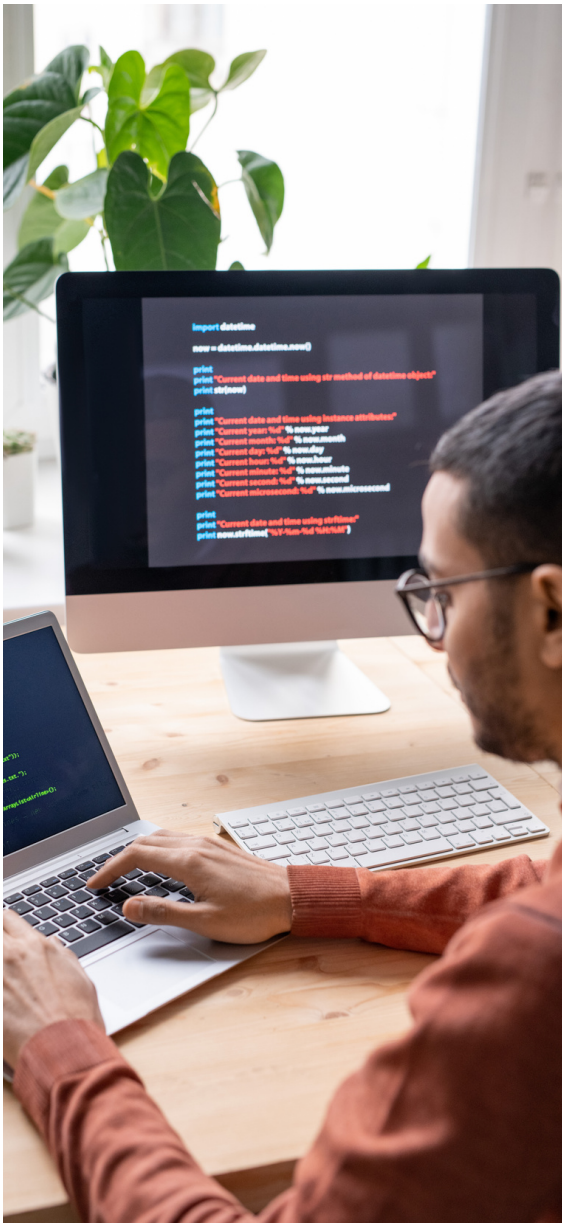
[30] "Data Centre." University of Windsor. https://www.uwindsor.ca/institutional-analysis/303/data-centre
[31] Ibid.
[32] Ibid.

St. Clair College

Tech programs at St. Clair College are expansive and diverse, ranging from two-year diploma programs to four-year Honours Bachelor's degree programs. Capstone projects and 14-week internships allow students to develop necessary soft skills, such as team-building, problem-solving, and communication. As a result, graduates from the college have often been praised for their hands-on experience and work readiness. More information regarding tech programs, student testimonials, and capstone projects can be found on their student-led **tech site**.

Computer Programming

Students in the Computer Programming Program will acquire the expertise to develop, test, and deploy program code. They will learn how to work individually or as part of a team to gather requirements and support the recommendations for the improvement or automation of organizational workflow that corresponds to the day-to-day requirements of individuals and organizations.



Computer Systems Technician - Networking

Computer Systems Technicians have the skills to plan, administer, configure, and maintain individual and networked computer systems. Graduates are trained to provide technical support for computer users in a business environment. This program will appeal to students who are problem solvers with good analytical skills.

Computer Systems Technology - Networking

This program focuses on advanced computer network administration including network security. Computer systems technologists also have project management, systems analysis, and design skills. This program will appeal to students with a keen interest in highly complex network systems.

Cybersecurity

This one-year graduate certificate program is designed to equip students with cybersecurity knowledge and skills necessary in the public and private sectors. Students will learn cybersecurity concepts of cryptography, cyber forensics, and network security, in addition to topics such as mobile network security, cloud security, and ethical hacking techniques and tools. Coursework in this program also addresses social, legal, and ethical considerations of cybersecurity. The program is designed as a blend of theoretical and practical learning opportunities.

Cybersecurity - Automobility

This program provides students with key concepts of information security, technical, and practical job skills necessary to secure, protect, and defend network infrastructures and an organization's valuable data assets. The curriculum provides a broad understanding of cybersecurity concepts, industry best practices for information security, and key security concepts that will protect an organization against fraud, data breaches, and other vulnerabilities.

Data Analytics

The Data Analytics one-year graduate certificate prepares students to visualize past, present, and future patterns by linking and presenting information in meaningful ways. The area of data analytics offers deeper insights and meaning of data sets for users by telling the story behind the information. This type of detailed and defined information enables graduates to effectively predict trends, understand the needs of customers, as well as make more informed business decisions.

Data Analytics for Business

Students will learn a unique blend of theoretical knowledge and advanced applicable skills. Students will also learn large-scale data manipulation, how to collect, curate, encode, and store data sets, which can be analyzed and mined in ways that can be reused and repurposed to solve challenges and predict future patterns for business decision-making. Students will gain critical thinking skills that demonstrate the ability to use existing and discoverable data to solve business problems.

Honours Bachelor of Business Administration (Information Technology Communication)

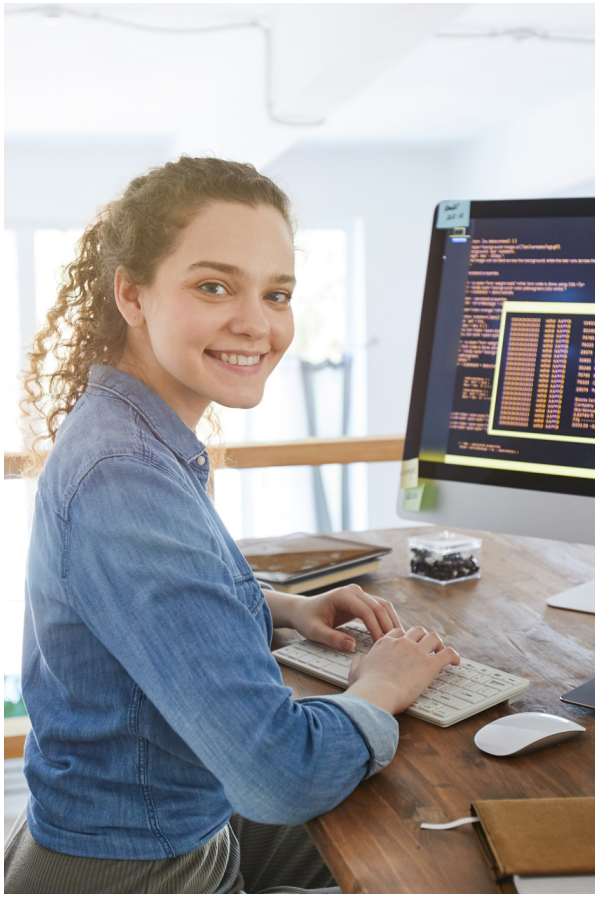
The Honours BBA (ICT) program is a unique blend of business and information technology courses seasoned with leadership and management foundations. Students will participate in paid work-integrated learning after the successful completion of the sixth semester. This internship will integrate academic studies with valuable industry work experience and will support the application of classroom theory. It is also an opportunity to receive a BA with a more hands-on learning experience.

Mobile Applications Development

This advanced diploma program is designed for those who are interested in developing mobile applications for smartphones, tablets, and the web. Students will learn and apply techniques in writing apps for major platforms common in today's mobile application marketplace. In addition, students will develop a deep understanding of object-oriented programming principles, cross-platform development both web and native, user interface design, database fundamentals, systems development, and project management, as well as be introduced to game development techniques.

Web Development and Internet Applications

In this two-year diploma program, students will learn the foundations of programming (e.g., Object Oriented), practice with a variety of popular platforms, explore core languages, and design web applications. Students will develop skills across a wide breadth of languages (e.g., HTML5, CSS, JavaScript, PHP, C#) and technologies including ASP.NET. This program also includes a final capstone project where students will have the opportunity to demonstrate mastery of the crucial skills employers are seeking while building the confidence to potentially start a business of their own.



Enrollment and Graduation Data

The following charts demonstrate enrollment and the number of graduates in tech programs at St. Clair College from 2019 to 2023. Over the past five years, St. Clair has had steady enrollment in these programs, averaging around 1,100 new students each year. As new programs have emerged in recent years, slight reductions in enrollment and graduates can be observed in certain programs (most notably, the Computer Systems Technician program), but there is also a noticeable increase dispersed in other programs as the department continues to expand.

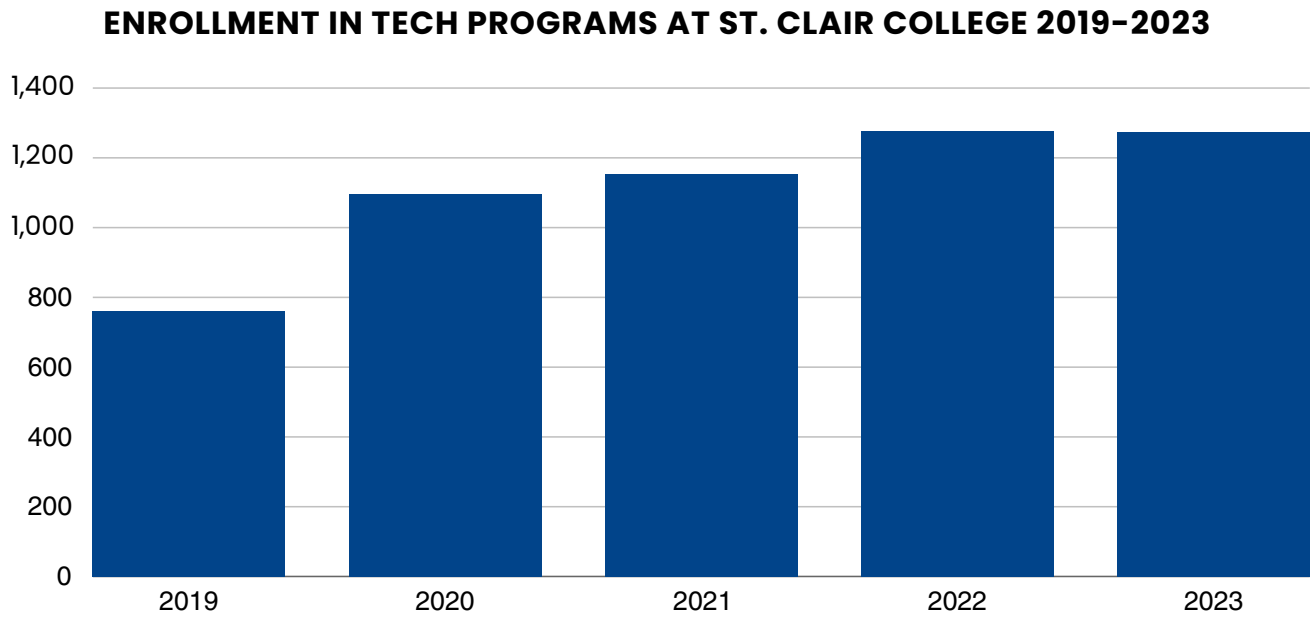


Figure 18. Enrollment in All Tech Programs at St. Clair College 2019-2023.[33]

[33] St. Clair College. https://www.stclaircollege.ca/.

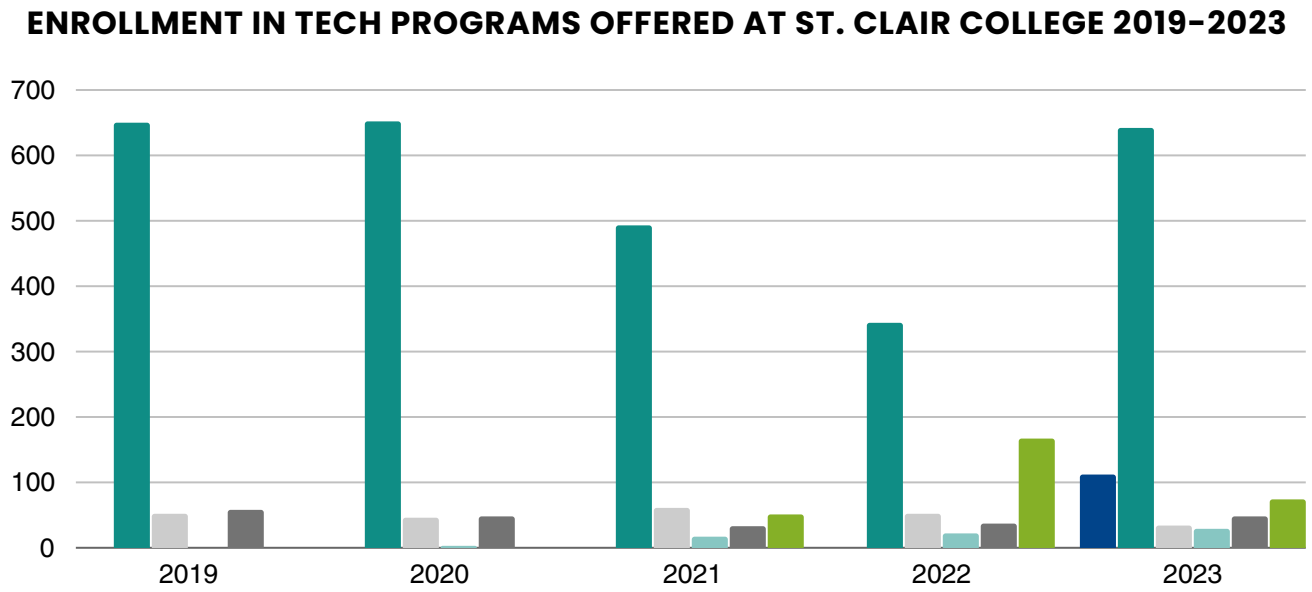


Figure 19. Enrollment in Tech Programs Offered at St. Clair College 2019-2023.[34]

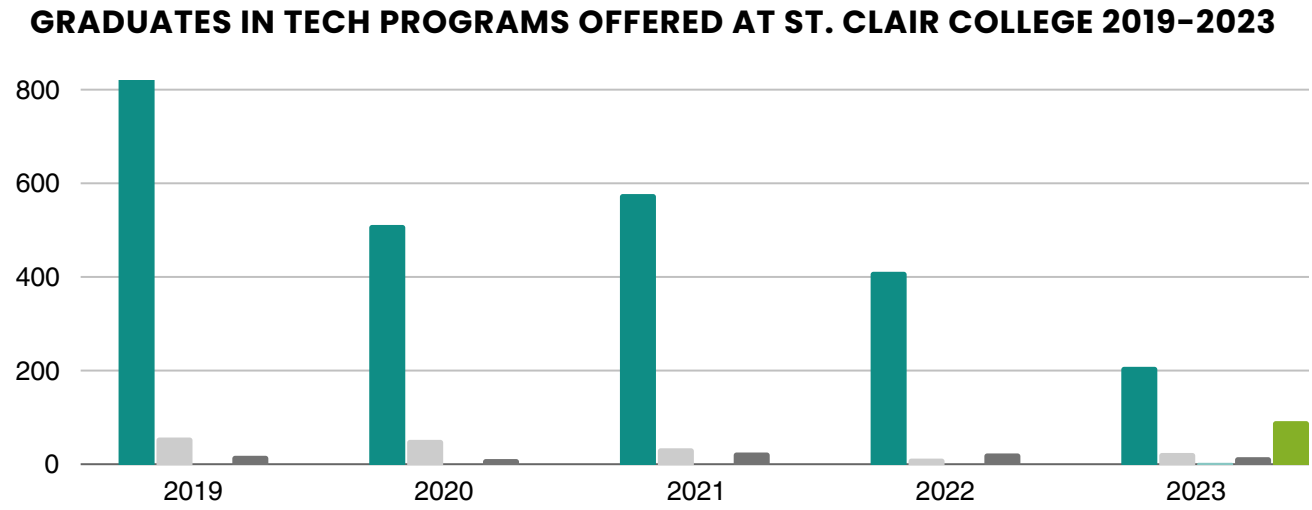


Figure 20. Graduates in Tech Programs Offered at St. Clair College 2019-2023.[35]

[34] St. Clair College. https://www.stclaircollege.ca/.
[35] ibid.

triOS College

Information Technology Administrator (Cloud)

This 62-week diploma program includes hands-on learning with real hardware and software, alongside practical projects, to quickly build the practical skills students need to succeed in the IT industry. Students can also take advantage of a 12-week internship to gain real-world IT experience and make themselves job-ready by the time they graduate. **This program qualifies students to pursue industry certifications from CompTIA and Microsoft.**

Information Technology Administrator (Cybersecurity)

This 62-week diploma program includes a 12-week internship and will teach students how to design, implement, and audit security within an enterprise and cloud environment. Students will also cover detecting, responding to, and investigating the common types of security breaches. **This program qualifies students to pursue industry certifications from CompTIA and Microsoft.**

Information Technology Professional (Infrastructure, Cloud, and Cybersecurity)

This 82-week diploma program covers all of the major areas of information technology including infrastructure automation, cloud computing, and cybersecurity. Plus, students learn hands-on with real hardware and software and work on practical projects in small class sizes to receive personalized help from instructors. **Upon graduation, students can pursue industry certifications from CompTIA, Cisco, CWNA, and Microsoft.**

Mobile Developer

This 62-week diploma program centres on comprehensive development courses such as Web Development Fundamentals, Design and Development Fundamentals, and Mobile Development. On top of those, students will also take preparatory classes, namely Student Success Strategies and Career Management, to help them succeed not only as a students but also as jobseekers.

Mobile Web Developer

This 82-week diploma program will teach students how to develop applications that run on mobile and web platforms. This Mobile Web Developer program comes with a 16-week internship to give students real-world, hands-on experience and make them job-ready by the time they graduate.

System Administrator

This 42-week diploma program offers comprehensive courses and an eight-week internship to gain real-world, hands-on experience to make students job-ready by the time they graduate. Plus, students can take advantage of exam vouchers they'll receive to help them achieve their CompTIA and Microsoft designations.

Video Game Development

This 69-85 week diploma program covers the full breadth of creating video games — from conceptualization to production — under the tutelage of industry experts. Students can also build a gaming portfolio and participate in a 16-week internship to get valuable hands-on experience.

Web and Development Fundamentals

This 42-week program focuses on software development basics that provide the largest number of junior and intermediate developer jobs — mobile development and web development. With an eight-week internship, students can experience working in a real-world environment and get the opportunity to apply the theories they will learn.

Web Developer

This 62-week diploma program will teach students a combination of fundamentals on web development and design, plus core web development principles. With triOS College's Web Developer courses, students will be qualified to take three industry certification examinations.

Barriers and Opportunities for Tech in Windsor-Essex

Barriers for Tech in Windsor-Essex

According to consultations with local employers conducted by Workforce WindsorEssex, despite evident growth in the tech industry, there are barriers to further expansion that exist. Most notably, employers have revealed that there is a significant lack of a market for tech businesses in the region as the region's core verticals of Manufacturing and Agriculture have integrated tech functions within their business. This blurring of the lines creates an opportunity for these employers to recruit tech workers into non-traditional tech industries as 59% of tech roles are not in the actual tech sector.[36]

Interestingly, many businesses also state the majority of their clients are American or from other areas within Canada. Windsor's strategic border location allows them access to a vast American market, which encourages tech businesses to settle here. However, to build a strong tech ecosystem, businesses and markets need to work in tandem. A larger local market for tech would draw businesses to the area and create an even more collaborative tech system in Windsor-Essex.

Another barrier is the persistent tech brain drain. Not unique to Windsor, this is a larger symptom of the brain drain experienced in Canada due to the country's commercialization deficit[37] - which leads to diminished tech employment opportunities due to less companies being created on the backs of these ideas and few growth opportunities being available. Moreover, according to employers, there can be difficulty when attempting to recruit senior tech workers. New grads are often eager to enter the local workforce, but finding workers with experience becomes challenging, identifying an opportunity for governments to take action in subsidizing the on-boarding of entry level tech workers - while the ecosystem simultaneously works to articulate incentives to attract senior tech workers. With our proximity to the U.S. and GTA, experienced tech workers have been relocating to secure higher wages. On the other hand, lower wages and operating costs have motivated stateside businesses to relocate or expand into the region, creating employment opportunities for locals and growing the relative size of the tech industry, which will in turn increase competition and offered wages.

[36] Robinson, Seth. "The Real Story on Tech Jobs." CompTIA. September 9, 2022.[21] St. Clair College. https://www.stclaircollege.ca/.
[37] Schwanen, Daniel. "Canada's Commercialization Deficit." C.D. Howe Institute. December 17, 2021.

Opportunities for Tech in Windsor-Essex

While the tech sector in Windsor-Essex - like tech sectors in communities across Canada - has its share of common challenges, it also has unique opportunities unlike anywhere else that make it a region to watch. Beyond the concrete data shown in this report that highlights the exciting growth in the sector, numerous recent developments are adding to the fabric of Windsor-Essex.

One of the key catalysts for this growth is the Downtown University of Windsor tech hub. The University of Windsor's acquisition of 300 Ouellette Ave. marks a significant expansion of its downtown campus, with plans to transform the site into a hub for community learning, technology, and innovation. This initiative aligns with the University's strategic priorities of strengthening community ties and enhancing student experiences. The space, previously occupied by the Windsor Star, is envisioned to foster tech innovation, experiential learning, and community engagement, offering new opportunities for collaboration with research, public, and industry partners. The location's high-profile corner is ideal for continuing efforts to revitalize the city's core. The availability of commercial real estate downtown, especially near the University of Windsor tech hub, offers ample space for startups and established companies to set up operations. This proximity to the university and its resources is an invaluable asset for companies looking to collaborate on research and development projects and tap into the talent pool of students and graduates.

Furthermore, the **Windsor Works** report, an economic development strategy for the city, highlights the strategic direction and action plan aimed at enhancing the city's economic growth and diversification, with a strong focus on the tech sector. This is complemented by the establishment of NextStar Energy in the region, which not only signifies the expansion of the tech industry but also promises to create numerous job opportunities and attract additional investment.

Record levels of funding and interest from large companies in Windsor further underscore the region's potential as a burgeoning tech hub. This influx of investment and attention from major players in the industry is a testament to Windsor-Essex's growing reputation as an attractive location for tech businesses.

The diversity of programs offered by the University of Windsor and St. Clair College is another key factor contributing to the region's tech sector growth. These institutions provide a wide range of courses and research opportunities in fields such as engineering, computer science, and information technology, which are essential for cultivating a skilled workforce that can meet the demands of the evolving tech landscape. In fact, a recent partnership between the University of Windsor and the Kanata North Business Association (KNBA) exemplifies the collaborative efforts underway to bridge the industry talent gap and connect students with leading companies in Canada's tech sector. This partnership is expected to enhance the university's capacity to offer experiential learning, internships, and co-op placements, thereby enabling students to gain real-world experience and develop skills crucial for thriving in the tech industry.

Windsor-Essex is on the cusp of a tech sector boom, driven by strategic initiatives, educational programs, and collaborative efforts between academia, industry, and government. These developments not only promise to transform the local economy but also position Windsor-Essex as a key player in Canada's tech industry landscape.

Best Practices:
Building a Tech Ecosystem

Detroit, Michigan, U.S.

One crucial step to establishing a tech ecosystem is location. For example, Detroit's thriving tech hub is largely based in downtown Detroit. By focusing their efforts on one condensed space for the majority of their tech businesses, they've allowed for easier connectivity and collaboration between tech companies. In contrast, Windsor's tech businesses are widely dispersed, leading to a lack of connections between businesses and organizations. In recent years, more tech players have established or moved their businesses to downtown Windsor, adding to the potential of an integrated tech hub. However, many more investments would have to be made to further develop downtown to fully realize the same success as Detroit. Creating spaces for start-ups in the downtown area, as well as improving safety and accessibility similar to Detroit, would be a good start to creating a stronger tech ecosystem.

Another factor in Detroit's booming tech hub is the involvement of U.S. automakers. Detroit is taking in billion-dollar investments from Ford, General Motors, and Stellantis "...as the car and computer start to blend even more."[38] The recent investments in the Michigan tech system have been comparable to Silicon Valley, as automakers are aiming to create a digital hub of automobility and innovation to support their dense manufacturing industry. Windsor's large manufacturing industry and recent investments in Electric Vehicles (EVs) from Stellantis make us poised to follow a similar path toward a booming tech ecosystem, but local manufacturing companies would have to commit to move away from traditional manufacturing and toward innovation, similar to American companies.

[38] Jake Lingeman "U.S. Automakers Aim to Make Detroit the Next Silicon Valley," Newsweek Magazine, February 3, 2023. https://www.newsweek.com/2023/02/17/us-automakers-aim-make-detroit-next-silicon-valley-1779611.html

Making a Difference in Our Community:

A Spotlight on Rocket Innovation Studio's Commitment to Social Responsibility

Rocket Innovation Studio, part of Rocket Companies (NYSE: RKT), is a technology leader and a community beacon that will soon be celebrating its fifth anniversary in downtown Windsor. Rocket Innovation Studio is passionate about creating meaningful change through active participation, building strong partnerships with organizations like Habitat for Humanity Windsor-Essex and United Way/Centraide Windsor-Essex County and fostering successful academic relationships with institutions like the University of Windsor. Rocket Innovation Studio actively promotes a culture of volunteering among its team members. This is deeply embedded in their identity and culture, reflecting their commitment to making a tangible difference in the city where we live, work, and play.

Their partnership with Habitat for Humanity goes beyond building homes; it includes significant involvement in their ReStore and involvement in the Repair Revolution program, focusing on providing safe and habitable homes for individuals and families in need. Their relationship with United Way is extensive, addressing various community needs. Rocket Innovation Studio is particularly proud of its involvement with the "Living in My Shoes" application, a groundbreaking initiative developed to foster empathy and understanding for those facing life challenges in our communities. Through their efforts with the University of Windsor, Rocket Innovation Studio has successfully run 10 cycles of a co-op program, providing students with real-world experience and often extending full-time job offers to keep talent local. Additionally, Rocket Innovation Studio participates in workshops, guest lectures, and capstone projects, equipping students with practical skills and industry insights. These partnerships are a testament to their commitment to nurturing the potential and ambition of future talent right here in our community. At Rocket Innovation Studio, they're building more than partnerships, they're building a better world.

Kitchener-Waterloo, Ontario, Canada

Another important case study on the development of a tech ecosystem is Kitchener-Waterloo (K-W). Though many would attribute K-W's rise as a significant player in the tech world to their big break with BlackBerry[39], much of their success can be attributed to how they reacted to and capitalized on that breakthrough. Building on the momentum of BlackBerry and with a coordinated concert of support from all levels of government land organizations like Communitech, they maintained that supporting and developing their local tech talent and investing in their local entrepreneurial companies was the core focus of their growth.[40] They also thrived by connecting their sectors, finding opportunities for tech to breach other industries (most recently, the healthcare system post-pandemic), and maintaining a relatively lower cost of living. They've noticed the trend of gentrification, increased cost of living, and decreased access to affordable housing in cities with growing tech industries, and they remain aware of the responsibility and importance of growing "smart and sustainable."[41] Since one of Windsor's primary selling points is our lower cost of living, we can learn from K-W by maintaining this advantage and increasing/promoting affordable housing for local tech talent and the attracting of new tech talent.

[39] Tyler Kelaher, "The forefront of Canadian innovation': First BlackBerry phone introduced 25 years ago," CTV News, January 20, 2024. https://kitchener.ctvnews.ca/the-forefront-of-canadian-innovation-first-blackberry-phone-introduced-25-years-ago-1.6735122.
[40] Heather Senoran and Colton Wiens, "Waterloo region's tech industry growing faster than expected," CTV News, April 29, 2022. https://kitchener.ctvnews.ca/waterloo-region-s-tech-industry-growing-faster-than-expected-1.5881973.
[41] Heather Senoran and Colton Wiens, "Waterloo region's tech industry growing faster than expected," CTV News, April 29, 2022. https://kitchener.ctvnews.ca/waterloo-region-s-tech-industry-growing-faster-than-expected-1.5881973.

Portland, Oregon, U.S.

Portland, Oregon is another recent example of a shocking expansion into tech. Now dubbed the Silicon Forest, Portland has increased their number of tech workers exponentially over the past few years and is home to over 400 start-ups. Their growth, as well as Vancouver's and Detroit's, has demonstrated to labour market researchers that the push behind tech expansion is an untapped labour market, the capacity to take on more jobs, and a supply source for talent. Strong educational programs were also linked with up-and-coming tech hubs, as Portland was able to tap into the graduates from the Oregon Institute of Technology.[42] Windsor-Essex has the basis for advancement, similar to Portland, with strong tech programs and an untapped talent pool; however, it lacks the infrastructure to support new businesses.

In contrast, Portland is home to many incubator and accelerator programs for tech start-ups, dedicated to mentoring and growing entrepreneurship, as well as a myriad of venture capital firms and angel investment firms that are willing to fund new projects.[43] Windsor-Essex has made improvements in this realm, most notably through **WEtech's ScaleUP Accelerator Program** and the **University of Windsor's EPICentre** for students and alumni, but further investment is necessary, including from venture capital firms. Demonstrating how and why Windsor-Essex has the potential to be home to the next booming tech hub is the first step to attracting investments. This could potentially be done by creating promotional pieces on local success stories, from businesses to entrepreneurs to students.

[42] Kenrick Cai, "Vancouver, Portland Leap In Ranking Of Best Cities For Tech Jobs," Forbes, July 15, 2019. https://www.forbes.com/sites/kenrickcai/2019/07/15/best-cities-for-tech-jobs-vancouver-portland-leap-rankings/?sh=40e2ddc437b6.
[43] "The Silicon Forest: Oregon Tech Jobs and Companies." 2023. https://www.thesiliconforest.com/funding.

Local 2024 Pulse Check Survey Findings

The following data was sourced from **WEtech Alliance's Tech Connect Pulse Check Survey,**[44] which ran throughout early 2024.* The survey was circulated to tech jobseekers, students, employees, and employers, to understand the current needs of the tech ecosystem. Undergraduate and graduate students made up 53% of the respondents, 36% were tech workers, and 5% were employers. Respondents were first asked how familiar they were with the tech scene in Windsor-Essex, and the majority (55%) claimed to be somewhat or very familiar with the local tech scene.

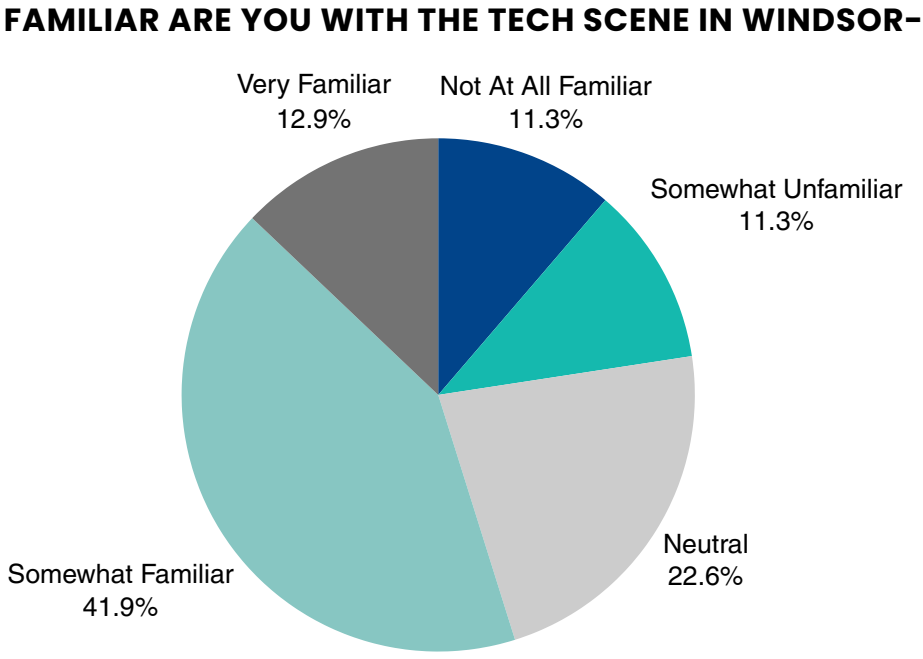


Figure 21. How familiar are tech workers/students with the tech scene in Windsor-Essex.

[44] "Tech Connect."" WEtech Alliance. 2024. https://www.wetech-alliance.com/connect/
*62 responses were collected at the time of publishing, mid-February 2024. The survey continued to collect responses past this time.

When respondents were asked how they connect with regional tech companies and tech organizations when seeking employment, the top five answers were:

1. **Social Media (e.g. Facebook, LinkedIn, TikTok, etc.)**
2. **Online Job Boards (e.g. Indeed, regional job boards, etc.)**
3. **WEtech Alliance Tech Jobs Board**
4. **Company Websites**
5. **Professional Networks**

When respondents were asked how many tech-related regional events they've attended in the last three months, 61% of respondents answered 1-5, 35% of respondents answered none, and 3% of respondents had attended over 10 events in the past three months. Regarding the types of regional events or programming they've participated in, the most-attended events were networking events (e.g. meetups, socials, etc.), soft skills training (e.g. public speaking, leadership, professional communication, etc.), and peer groups. Furthermore, the most-participated-in tech-related groups or organizations were the **Google Developer Group/Student Club** (62%), **Windsor Hackforge** (24%), and **Women in Cybersecurity/WiCyS** (19%). Respondents were also asked how prepared they felt for their career, 68% claimed they were somewhat/very prepared and only 14% claimed they were somewhat/very unprepared, which reflects well for local educational programs and organizations teaching career readiness.

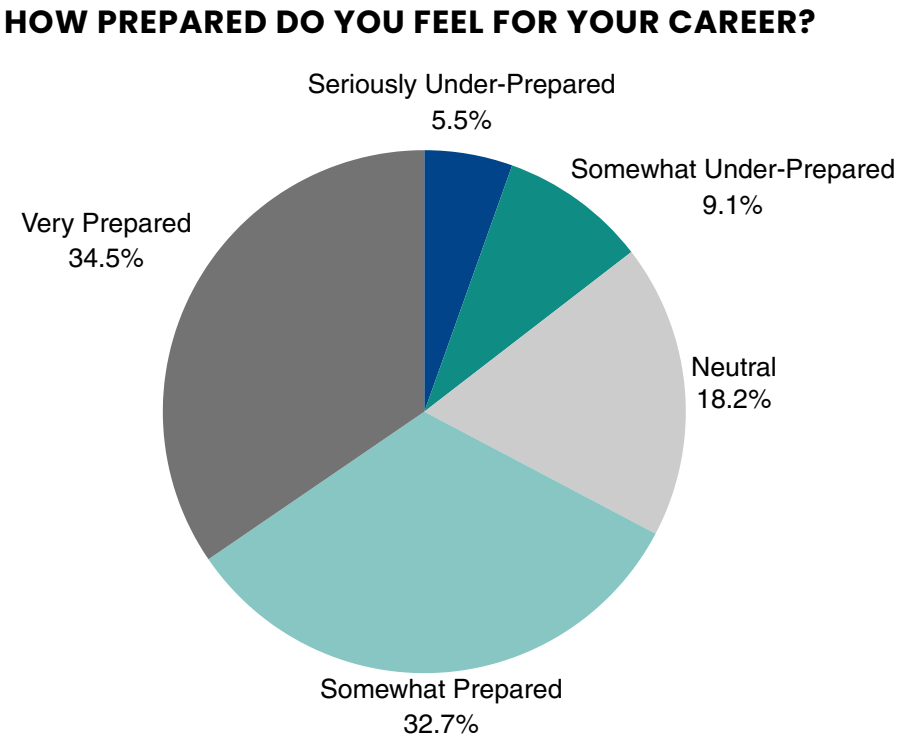


Figure 22. The level of preparedness that local tech workers/students feel for their career.

Moreover, respondents claimed that the top five skills/abilities that have helped them feel prepared in their career were:

1. **Communication**
2. **Technical Skills**
3. **Teamwork/Collaboration**
4. **Ability to learn quickly**
5. **Ability to adapt quickly to different circumstances/needs**

In the same vein, the top five skills/abilities that would make them feel more prepared for their career were:

1. **Technical Skills**
2. **Communication**
3. **Public Speaking/Presentation Skills**
4. **Project Management**
5. **Creativity**

The main reasons respondents claimed they would not consider seeking employment in Windsor-Essex were a lack of job opportunities, the quality or size of companies elsewhere, better compensation (salary/benefits) elsewhere, the reputation of the tech scene in another place, and better cultural and/or recreational activities elsewhere. The primary factors that would encourage them to seek employment in Windsor-Essex were the cost of living, cost of housing, proximity to the U.S., the weather/climate, and safety of the community.

Respondents were also asked about how strongly they agree or disagree with the following statements regarding the current tech ecosystem, opportunities for upskilling and networking, and their sentiments toward Windsor-Essex as a good place to live. In general, the majority of respondents agreed/strongly agreed with the statement that there are many opportunities to train and connect with the industry locally. However, 47% of respondents disagreed/strongly disagreed that Windsor-Essex could be considered a strong tech hub, denoting a need for further development or better promotion of the local tech ecosystem.

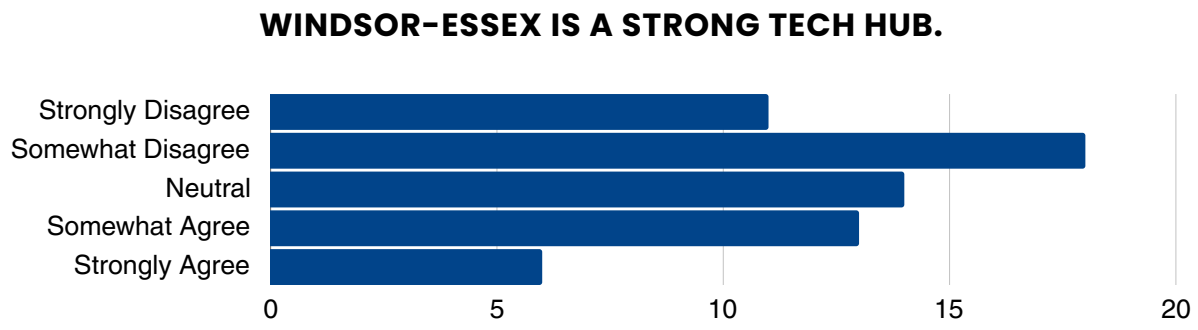


Figure 23. The level of agreement with the statement 'Windsor-Essex is a strong tech hub'.

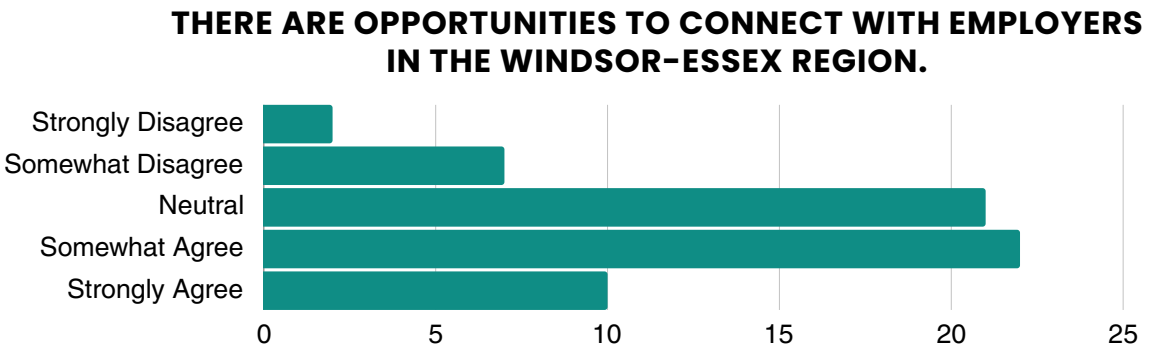


Figure 23. The level of agreement with the statement 'There are opportunities to connect with employers in the Windsor-Essex region'.

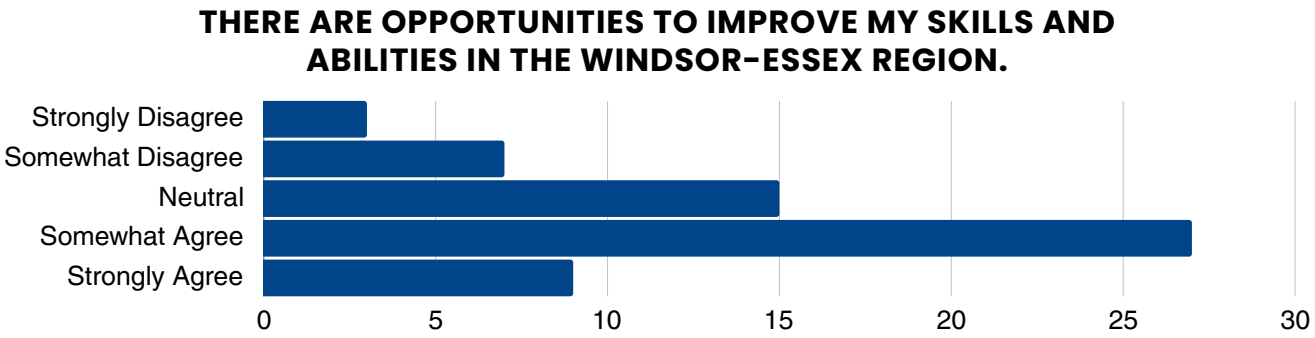


Figure 23. The level of agreement with the statement 'There are opportunities to improve my skills and abilities in the Windsor-Essex region'.

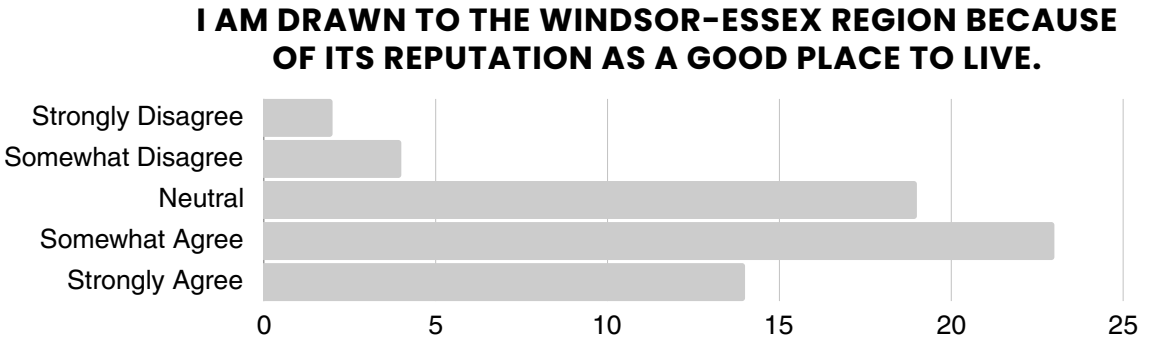


Figure 23. The level of agreement with the statement 'I am drawn to the Windsor-Essex region because of its reputation as a good place to live'.

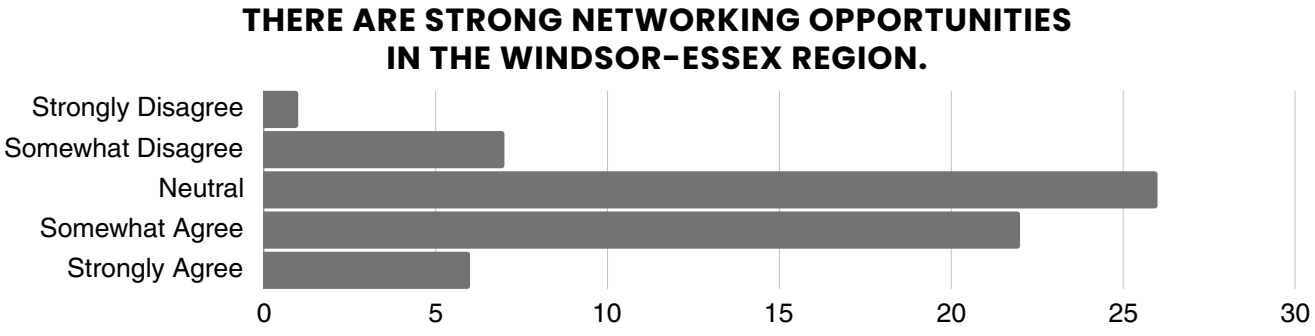


Figure 23. The level of agreement with the statement 'There are strong networking opportunities in the Windsor-Essex region'.

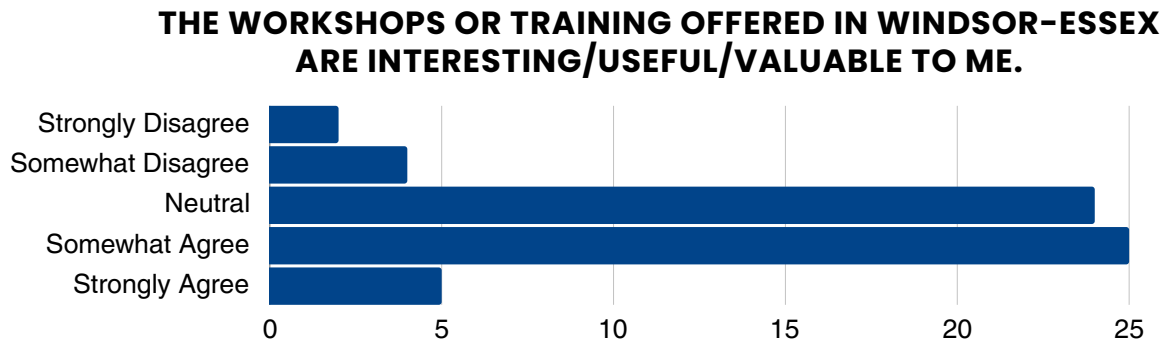


Figure 23. The level of agreement with the statement 'The workshops or training offered in Windsor-Essex are interesting/useful/valuable to me'.

Finally, respondents were asked how likely they were to grow and/or continue their career in this region: 70% of respondents claimed it was very/somewhat likely and only 5% claimed it was somewhat unlikely (zero respondents claimed it would be very unlikely). Despite the evident room for progress when it comes to the development/awareness of our local tech scene, a general consensus seems to be that Windsor-Essex has the potential for growth, and many are willing to remain in the region to experience/aid in our advancement.

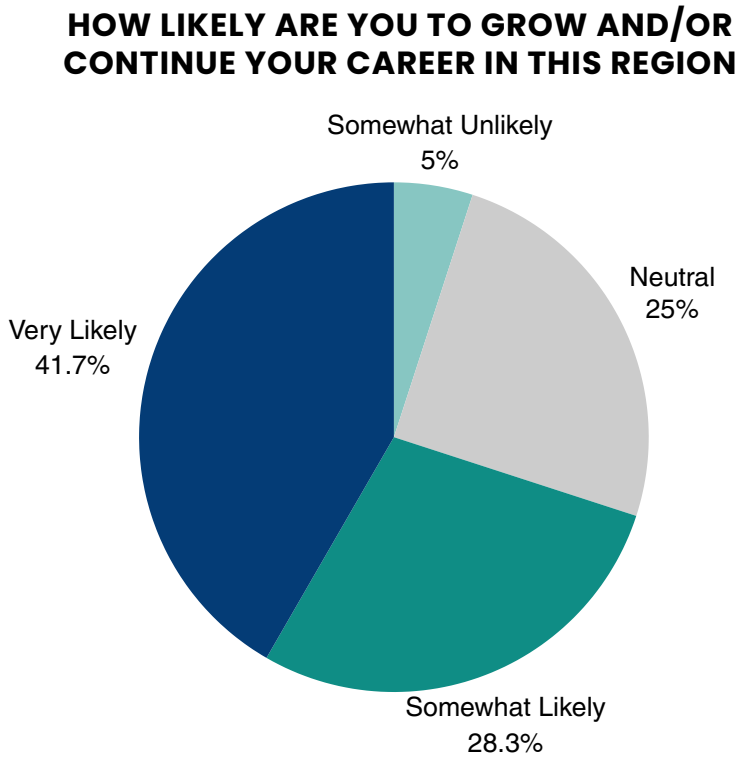


Figure 24. The likeliness of tech workers/students to grow and/or continue their career in Windsor-Essex.

Resources and Recommendations

Resources and Recommendations

For Students and Jobseekers

Make connections.

Connect with tech professionals to expand your network. Take advantage of events organized by WEtech Alliance that often include socializing with other tech workers or informative online seminars led by experienced professionals in the tech industry and check out **WEtech's Community Event Calendar** for upcoming learning and networking opportunities. Also, consider utilizing local shared coworking spaces, such as the **Downtown Windsor Business Accelerator**, **CO: Workshare Ford City**, and the **EPICentre**, to meet other tech workers. To further expand your network, try working out of Bamboo Detroit, another shared space that could offer cross-border opportunities for connection.

Research tech roles and businesses.

Tech roles can be extremely diverse, especially in a region where the largest industries are Manufacturing and Agriculture. Research tech jobs outside of the stereotypical roles to broaden your interests and skill sets. Check out the Workforce WindsorEssex **Career Library** to learn more about occupations in tech, or **CompTIA's** IT Career Centre to remain informed on IT career paths or to take an IT personality test and discover where your interests align best within the tech industry. Another option includes exploring WEtech Alliance's archive of past **Tech Connect Thursdays** and registering for upcoming sessions. Tech Connect Thursdays offer a chance for individuals interested in or currently working in the tech field to network, discover exciting local career prospects, and gain insights into industry trends, initiatives, and developments both locally and globally.

Take advantage of local resources.

There are many local resources geared toward jobseekers and tech students. These organizations promote connectivity and offer relevant upskilling programs through collaborative meeting spaces and organized events.

Identify opportunities to stand out.

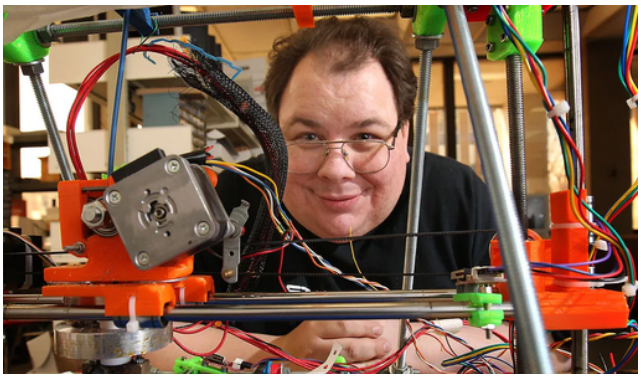
Amid challenging macroeconomic circumstances and at a time when roles are in high demand with more applicants than ever, it is crucial for candidates to stand out to employers. Creative problem-solvers, collaborative communicators, and critical thinkers will always be in high-demand. These core competencies can be demonstrated through participation in events like hackathons (Windsor is home to **WinHacks** and **BorderHacks**, among others), skill building competitions, organizing collision opportunities, pursuing passion projects, and more.

Have an open mind regarding what defines a tech job.

With the aforementioned understanding that 59% of tech roles are at non-traditional tech companies, it is important to realize that jobseekers may need to look beyond big tech to find their dream tech role, taking advantage of the regional imperatives of Manufacturing and Agriculture. Conversely, employers should also take advantage of recent large-scale layoffs at these big tech firms to attract tech workers into their industries to create a healthy pipeline of highly-skilled and adaptable employees, adding yet another attraction to Windsor-Essex.

Hackforge

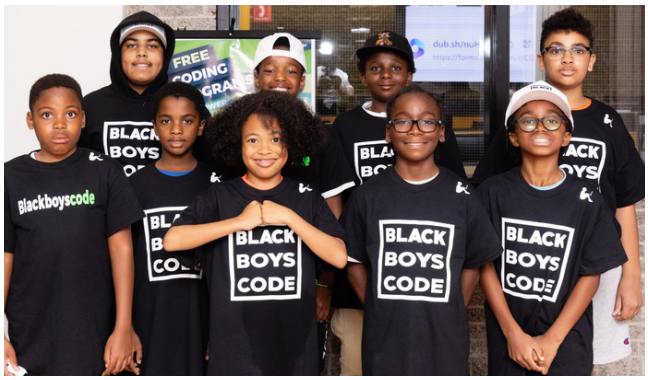
Windsor **Hackforge** is a registered non-profit in Windsor, Ontario. Since 2012, they have focused on building community and capacity around technology. The organization aims to be the meeting place for local technology professionals, students, and enthusiasts. Their programming — 99% of which is free — includes lectures, hands-on workshops, and social events. Membership to Hackforge is free, and based on contribution to the community. In recent years, Hackforge has run community projects focused on cycling and walking tours. In the near future, they have plans to investigate and fill gaps in the local education ecosystem, and to broaden regional conversations around open data.



Black Boys Code

Black Boys Code is the largest organization in Canada dedicated solely to empowering Black youth with digital literacy skills to become tomorrow's leaders in tech. With 12 chapters across Canada, including Windsor, and new chapters expanding into the U.S., they're poised to make a meaningful impact in the lives of Black youth by providing them with the essential training and tools to carve out their destinies and thrive in the ever-evolving landscape of the innovation economy.

Through their exposure workshops, hackathons, after-school programs, and summer tech camps, they've reached thousands of boys in the Black community and sparked their interest and aptitude for technology. As they continue to expand, their programs have been developed for Black girls as well. Their mission is clear: to empower Black youth to have a brighter future through computer science and technology education. Black Boys Code is igniting a spark in the hearts and minds of the next generation of young Black innovators.



WEtech Alliance

WEtech Alliance is a non-profit organization that provides entrepreneurs and companies with business services, training, I.P. and commercialization support, mentorship, and strategic connections to help bring new ideas to market, scale to the next level, and build a dynamic culture and a community of innovation.

WEtech Alliance's Mission is to help grow innovation and tech-based companies of all stages, and champion innovation in Windsor-Essex and Chatham-Kent. Their main pillars are business acceleration: offering a roster of business acceleration programs and services that are designed to help innovation and tech-based entrepreneurs and companies start, sell, and scale; connecting talent: working with industry, academia, and community partners to connect talent with high-growth companies, skills development, and community; and building community: hosting events and activities that aim to inspire, connect, and accelerate new and existing entrepreneurs.

Google Developer Groups (Windsor Chapter)

Google Developer Groups

Google Developer Groups (GDGs) offer a global network of over 1,000 chapters in 140 countries, bringing together developers of all levels and backgrounds. These groups provide a platform for local developers and technology enthusiasts to connect, regardless of their unique backgrounds or the industries and companies they represent. GDGs facilitate learning through a variety of technical topics via hands-on workshops, training sessions, events, talks, and meetups, both online and in-person. They encourage growth by applying knowledge and connections to develop great products, advance careers, and expand networks, all while contributing to the learning and development of the community.

The Windsor chapter organizes roughly monthly meetings aimed at building a community for sharing and networking among tech enthusiasts. **GDG Windsor** plays a pivotal role in organizing the annual **DevFest**, which attracts over 200 students and professionals each year. Besides GDG developer groups, Windsor-Essex also hosts Google Student Developer Clubs at both the University of Windsor and St. Clair College, fostering an environment for student engagement and learning in the tech field.

For Employers

Connect with local educational institutions and employment services.

The tech industry is rapidly changing; to ensure that Windsor's educational programs are keeping up with industry needs, maintain a line of communication with the **University of Windsor**, **St. Clair College**, and **triOS College**. Communicate which programming languages and skills are at the forefront of tech so students are well-prepped and work-ready once they graduate. Connecting with educators can also spur the development of new programs that could fill anticipated skills gaps. Connecting with institutions directly will also support recruiting efforts. Career Services and co-op programs can often refer qualified students and recent graduates to employers looking for workers.

To aid in the search for skilled employees, consider connecting with **local employment services**. Jobseekers using employment services have often taken part in recent training and newcomers often have high levels of experience from their country of origin. However, both populations are notoriously disconnected from the industry network. To tap into this talent pool, allow employment services to help better connect you to jobseekers who often make use of Employment Ontario (EO) services.

Utilize local resources and funding.

Since Windsor lacks a concentrated tech hub, maintaining communication with tech businesses and community partners becomes difficult for most local employers. Increase connections within the tech community by participating in and attending tech events and following local tech news. Additionally, all employers should consider expanding tech within their organization to increase productivity and further support the market for local tech businesses, which would lead to the creation of more jobs and demand in our region. For example, look at free resources through **Digital Main Street** to help your business grow and complete courses to take better advantage of tech services in Canada.

Funding also exists to provide students with tangible work experience critical to establishing a healthy talent pipeline while advancing an organization's needs. Primarily, funding regularly delivered through the **Magnet Student Workplace Placement Program**, the **Ontario Government Co-op Tax Credit**, and the Canada Summer Jobs programs helps organizations of all types subsidize student labour while empowering students with skill-building opportunities.

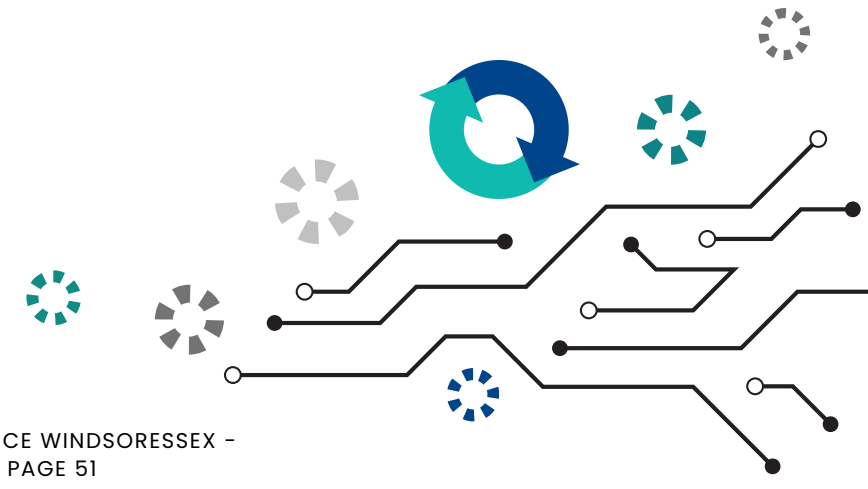
Develop relationships with industries outside of tech.

Expand your network by connecting with other industries that could open your business to new markets and innovation. The consensus during consultations with local employers, jobseekers, tech workers, and community partners was that the tech ecosystem in Windsor-Essex is underdeveloped. Tech businesses are not as collaborative as they'd like to be; tech workers and jobseekers are not always aware of the tech events, job opportunities, and resources that are available to them; and community partners attempting to unite the tech network and increase connectivity often have issues with attendance and participation.

One essential step to developing a tech ecosystem is collaboration and receptiveness between industries. According to local employers, Manufacturing and Agriculture are somewhat closed off to tech, even though they have limitless potential to expand their practice from automotive to automobility and agriculture to agri-tech, with the support of the local tech industry. Creating an open environment for industries to collaborate is a strong first step to expanding tech in the region.

Leverage regional job boards.

To help you connect to talent and promote regional tech employment opportunities, using regional job boards is an essential strategy. WEtech Alliance's **tech job board** is one of the key local resources, created to showcase the wide range of tech positions available within the region. This platform acts as a guiding light for individuals pursuing tech-related careers and aids local companies in drawing in top-tier talent. Furthermore, for entities operating within the electric vehicle sector, **EVCareers.ca** emerges as another exceptional resource for job opportunities, expanding the horizon for both jobseekers and employers in this innovative field.



For Community Partners

Build connections.

Increase connections with industry and educational institutions to better connect students and jobseekers to local resources, networks, and events. The tech industry in Windsor-Essex is broad and diverse, and by connecting with local players, you'll be able to make more personalized recommendations and connections for the individuals utilizing your services.

Practice inclusivity.

Make an effort to uplift underrepresented groups when it comes to tech events. It's clear that women and racialized groups are severely underrepresented in the tech industry, and the first step to combatting this is to include and champion diverse groups. Try to ensure a diverse group of speakers during tech events to demonstrate how these populations are valued and well-represented in the local tech industry. Also, consider organizing events geared specifically toward underrepresented groups, so they can connect and share their experiences in tech. A few examples include the **University of Windsor's Women in Cybersecurity (WiCyS)**, **WEtech Alliance's Women in Mobility Peer Group**, **Windsor Women in Machine Learning and Data Science**, and the **University of Windsor's Women in Engineering (WiE) club**.

Work across jurisdictions.

The most successful tech ecosystems are ones in which everyone participates collaboratively through funding, partnership, and buy-in across all levels of government in tandem with academia, industry, non-profit community partners, and students to build a dynamic ecosystem that does not concern itself with who should be responsible for what and rather doing what needs to be done for the betterment of the ecosystem but mobilizing quickly, executing inclusively, and sharing widely.

TeCK Week YQG

TeCK Week YQG is a collaborative series of events spearheaded by WEtech Alliance. The week brings together tech leaders, founders, talent, researchers, investors, expats, and the broader community. This week-long event is the largest regional technology festival dedicated to tech, talent, and community. Now in its fifth year, this week-long event is the largest regional technology festival dedicated to tech, talent, and community.

Windsor-Essex Google DevFest

Google DevFests, organized by the Windsor Google Developers Group (GDG), are renowned software developer conferences that unite local technologists from industry and academia to explore the latest advancements on topics like Artificial Intelligence, Cyber Security, Software Development, and Cloud Computing. This event promises to be filled with networking, cutting-edge technology discussions, and opportunities for personal and professional growth.

Past conferences have also included a track dedicated to high school students, in which participants worked in groups to assemble a car kit, program its controls, and build collision avoidance capability using proximity sensors.

WinHacks

Founded in 2019, **WinHacks** has been the beacon of collaboration, creativity, and technological advancement. To put it simply, hackathons combine the two words: hacking and marathon. Participants get the chance to form teams of up to 1-4 members, and bring a project idea to life. However, they only have 36 hours to accomplish this. WinHacks welcomes all skill levels and backgrounds.

In this annual event, students receive mentorship, learn about new job opportunities, and get some cool swag. It is an electrifying experience filled with workshops, mentorship sessions, and an opportunity to network with industry leaders.

MasseyHacks

MasseyHacks is a high school hackathon — an event perfect for students fascinated by the world of technology. This 24-hour event is an opportunity for students to explore the realm of computer science and bring their creative ideas to life by developing a project of their own. No matter the skill level, students get to participate in workshops, engage in countless activities, and meet other like-minded students in this completely free event.

Emerging Technologies in Automation Conference and Trade Show

Invest WindsorEssex (IWE), the lead economic development agency for the Windsor-Essex region, and the National Research Council of Canada's Industrial Research Assistance Program (NRC-IRAP) host an annual Emerging Technologies in Automation Conference and Trade Show. The purpose of the event is to recognize and formalize the sizeable but largely unknown automation cluster in the Windsor-Essex region and to give local automation companies a platform to present their innovations to a broad audience, that now includes automation companies, users of automation, government, academia, and service providers from the rest of the province, southeastern Michigan, and even Mexico. A key success of the conference has been the establishment of Automate Canada, an association of automation companies which previously did not have a formal representative body. The conference is a great opportunity for community partners to learn more about the tech industry, connect with key players in the growing sector, and even make connections for jobseeker clients and hiring employers.

Appendix

Tech 5-digit NOCs (2021 version):

- Data Scientists (NOC 21211)
- Software Engineers and Designers (NOC 21231)
- Computer Systems Developers and Programmers (NOC 21230)
- Software Developers and Programmers (NOC 21232)
- Web Developers and Programmers (NOC 21234)
- Web Designers (NOC 21233)
- Database Analysts and Data Administrators (NOC 21223)
- Information Systems Specialists (NOC 21222)
- Computer and Information Systems Managers (NOC 20012)
- Computer Engineers (NOC 21311)
- Cybersecurity Specialists (NOC 21220)
- Business Systems Specialists (NOC 21221)
- Computer Network and Web Technicians (NOC 22220)
- User Support Technicians (NOC 22221)
- Information Systems Testing Technicians (NOC 22222)
- Mathematicians, Statisticians and Actuaries (NOC 21210)
- Electrical and Electronics Engineers (NOC 21310)

Excluded

- Architecture and Science Managers (NOC 20011)
- Engineering Managers (NOC 20010)

Tech 3-digit NOCs (2021 version):

- 212 - Professional Occupations in Applied Sciences (Except Engineering)
- 200 - Specialized Middle Management Occupations in Engineering, Architecture, Science and Information Systems
- 222 - Technical Occupations Related to Applied Sciences (Except Engineering)

Excluded

- 213 - Professional Occupations in Engineering

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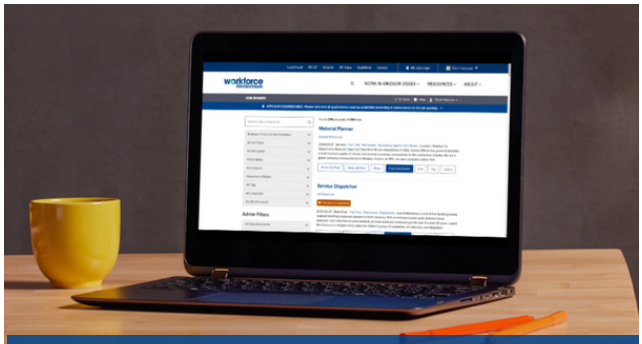
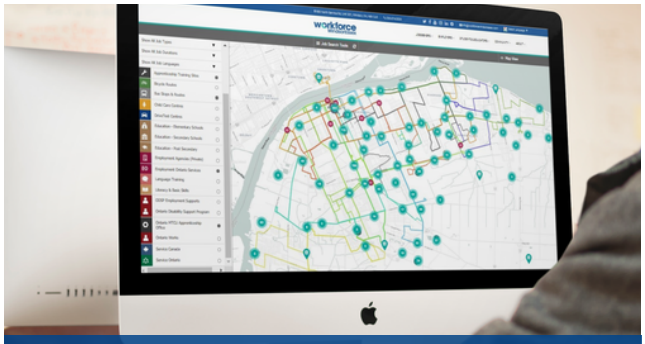
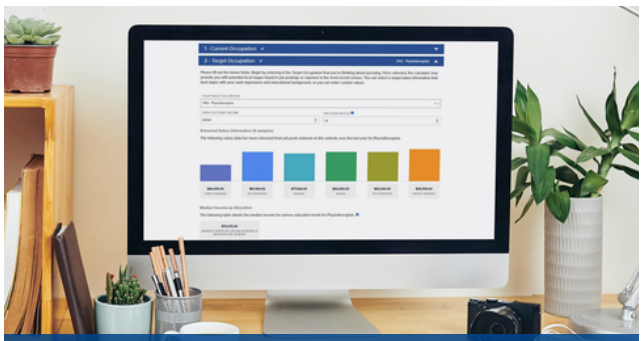
Workforce WindsorEssex Tools and Resources



Job Board



Job Map



Career Calculator

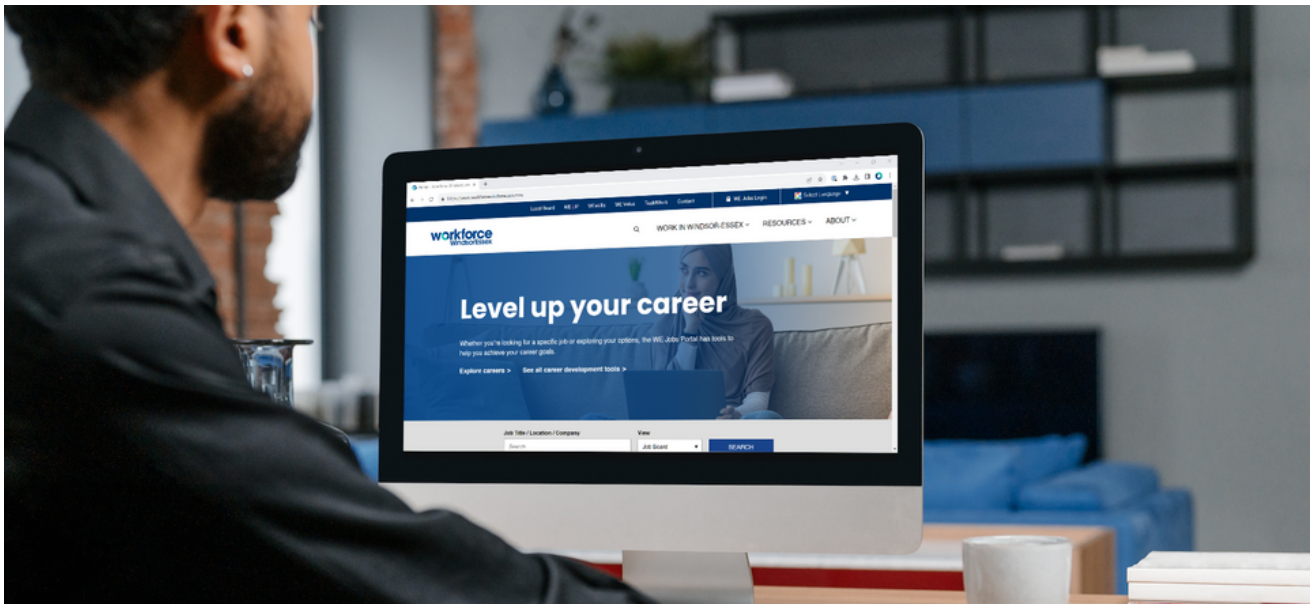
Career Library

Job and Training Events Board

Resume Builder

WWW.WORKFORCEWINDSORESSEX.COM


www.workforcewindsoressex.com/state-of-tech/
SCAN TO VIEW THE REPORT ONLINE



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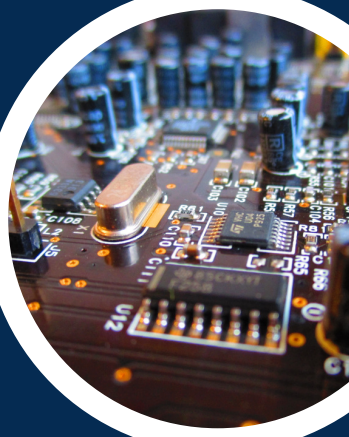

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