



## Labour Market Information

### Software engineers and designers (2173)

Software Engineers and Designers research, design, evaluate, integrate and maintain software applications, technical environments, operating systems, embedded software, information warehouses and telecommunications software. They are employed in information technology consulting firms, information technology research and development firms, and information technology units throughout the private and public sectors, or they may be self-employed.

#### Employment Prospect rating

**Current (2013-2017): Average**  
**Previous (2009-2013): Above Average**

- What do the employment prospects ratings mean?

Ontario Job Futures rates employment prospects as either "Above Average", "Average" or "Below Average". These ratings focus on the recent labour market conditions and projections of demand for new workers, but do not consider the existing or potential supply of workers (such as new graduates and immigrants). The employment prospect ratings are developed for Ontario as a whole, and may not reflect the labour market outlook in every region of the province.

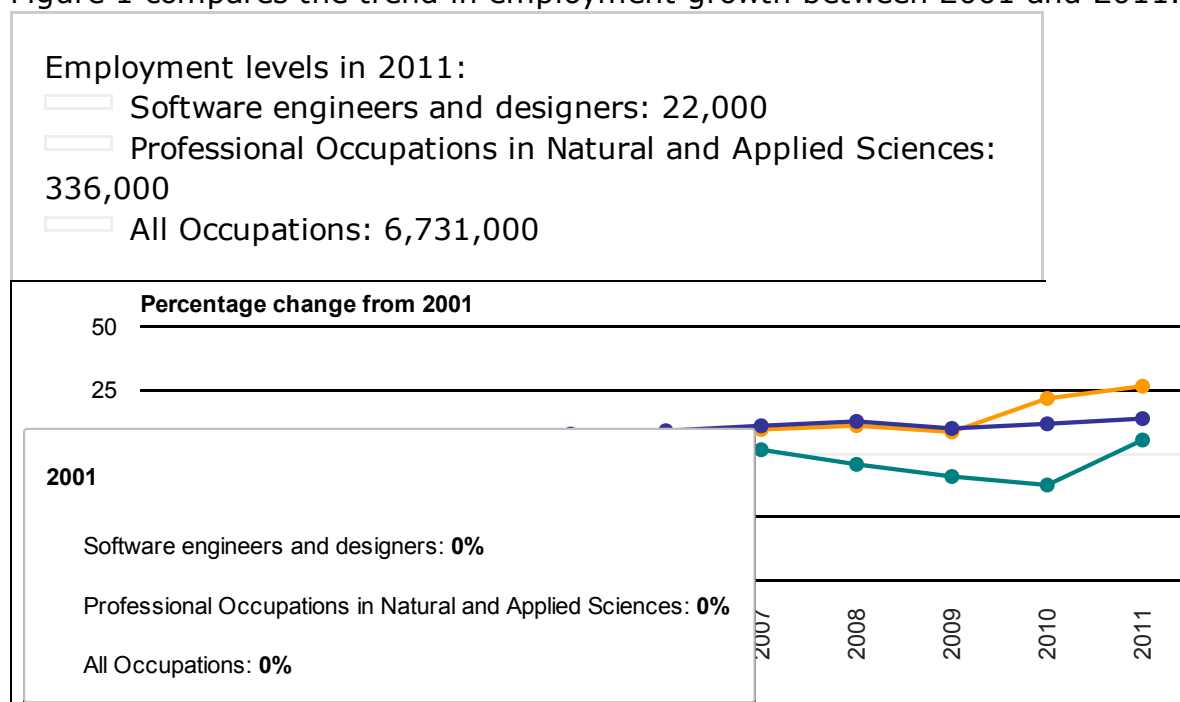
- "Above Average" labour market conditions usually mean that, relative to the employment situation overall, there is a better likelihood of finding stable work in this occupation, and employment prospects are attractive or improving.
- "Average" labour market conditions indicate that jobs are expected to be more difficult to find; the probability of unemployment is higher; and wages and salaries have recently increased at a slower pace than those occupations rated as "Above Average." On the other hand, jobs are easier to find; unemployment is less likely; and wages and salaries have recently increased at a faster pace than in those occupations rated "Below Average".
- "Below Average" labour market conditions mean that it is more difficult to find stable work or employment prospects are not attractive or are deteriorating relative to those in other industries or occupations. For new entrants, such as people leaving school and immigrants, "Below Average" labour market conditions mean a relatively low probability of finding stable work in this occupation and lower potential for rising pay.

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- What are the employment requirements for this occupation?
  - A bachelor's degree, usually in computer science, computer systems engineering, software engineering or mathematics or completion of a college program in computer science is usually required.
  - A master's or doctoral degree in a related discipline may be required.
  - Licensing by a provincial or territorial association of Professional Engineers is required to approve engineering drawings and reports and to practise as a Professional Engineer (P.Eng.).
  - Engineers are eligible for registration following graduation from an accredited educational program, three or four years of supervised work experience in engineering and passing a professional practice examination.
  - Three-year diploma in technology from a College of Applied Arts and Technology; or a bachelor's degree in a relevant science area; or academic qualifications deemed by the Canadian Council of Professional Engineers to be equivalent to a diploma or degree is required
  - In Ontario, to practise professional engineering and to use the title 'Professional Engineer', a license from Professional Engineers Ontario is required. Those who do not meet the requirements for licensing, can work in engineering if a Professional Engineer supervises this individual's work and takes responsibility for it.

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- How quickly has employment grown for this occupation compared with others? Figure 1 compares the trend in employment growth between 2001 and 2011.



Source: Statistics Canada

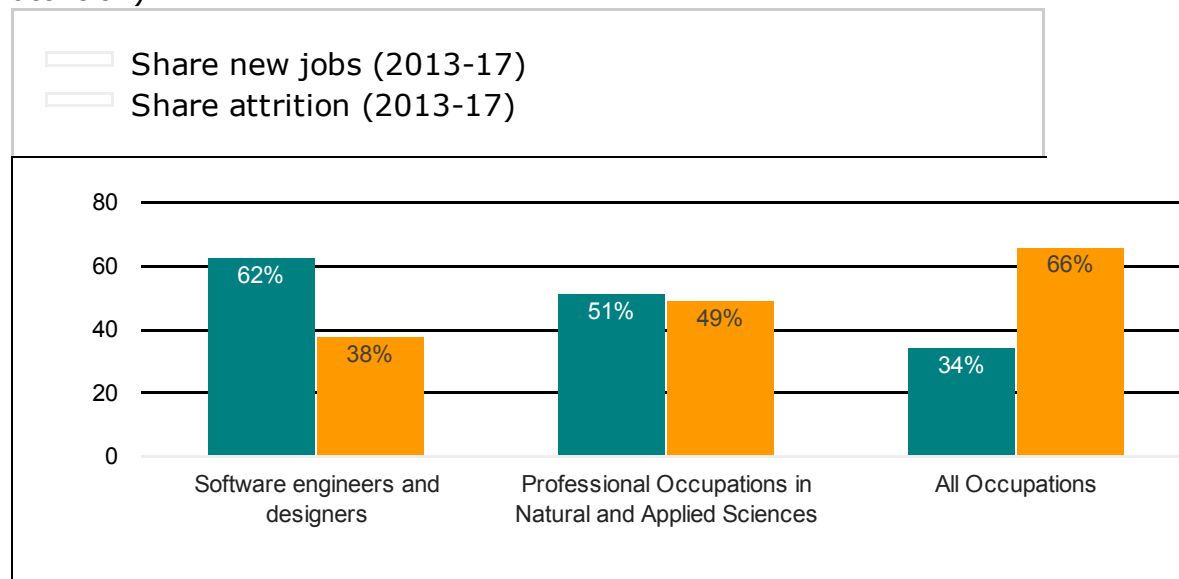
Notes: The data are based on the Labour Force Survey and consequently are subject

to sampling variability, which may overstate the actual changes in employment level. As a result, estimates should be interpreted with caution.

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- How are job openings for this occupation expected to compare with those in other occupations from 2013 to 2017?

Figure 2 shows the two components of projected job openings (new jobs and attrition).



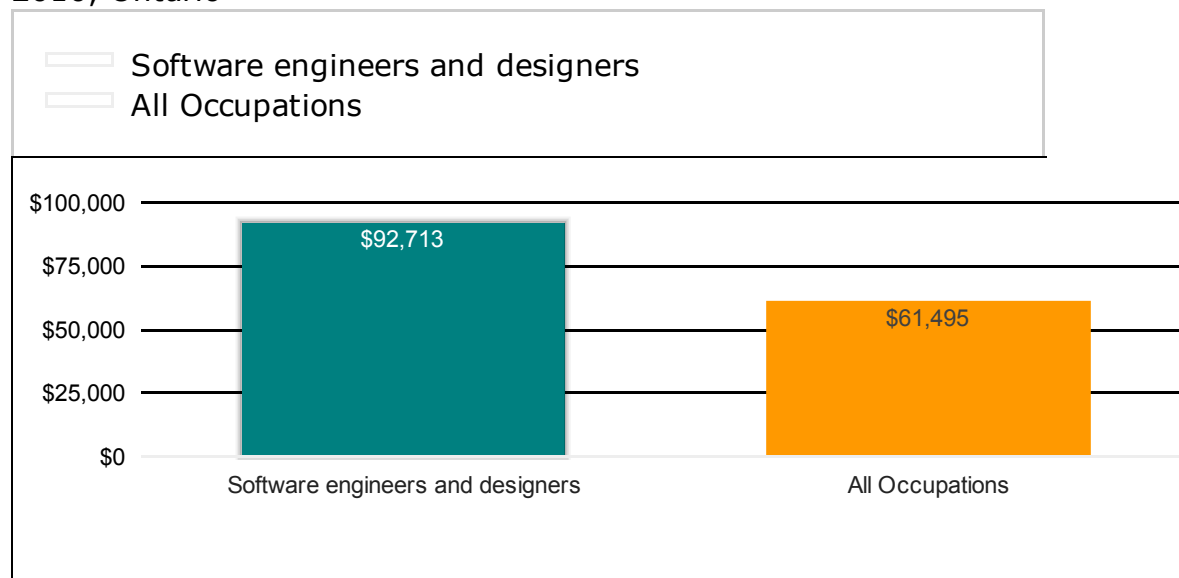
Source: Canadian Occupational Projection System

Note: Percentages may not sum to 100 due to rounding.

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- How do wages for this occupation compare with others?

Figure 3: Average Annual Employment Income, Employed Full-Time Full-Year in 2010, Ontario



Source: Statistics Canada

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- What is the general make-up of the workforce for this occupation?

Table 1: General Employment Characteristics

<b>General Employment Characteristics</b>	<b>(%)</b>
Male	81
Female	19
Full-Time	78
Part-Time	22
Self Employed	7
Employees	93
Unemployment Rate	2.0

Source: Statistics Canada

Note: Percentages may not sum to 100 due to rounding.

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- What industries employ this occupation?

Table 2: Main Industries of Employment

<b>Main Industries of Employment</b>	<b>(%)</b>
Professional, scientific and technical services	48
Information and cultural industries	12
Manufacturing	11
Wholesale trade	11
Finance and insurance	7
All Other Industries	10

Source: Statistics Canada

Note: Percentages may not sum to 100 due to rounding.

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- In what areas of Ontario is this occupation found?

Table 3: Distribution of workers by Economic Region

<b>Employment by Economic Region</b>	<b>(%) This Occupation</b>	<b>(%) All Occupations</b>
Ottawa	26	10
Kingston - Pembroke	1	3
Muskoka - Kawarthas	0	3
Toronto	56	46
Kitchener - Waterloo - Barrie	9	10

Hamilton - Niagara Peninsula	4	10
London	2	5
Windsor - Sarnia	1	4
Stratford - Bruce Peninsula	0	2
Northeast	0	4
Northwest	0	2

Source: Statistics Canada

Note: Percentages may not sum to 100 due to rounding.

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- What licensing bodies or associations are important for this occupation?
  - Canadian Information Processing Society
  - Engineers Canada
  - Information and Communications Technology Council
  - Information Technology Association of Canada (ITAC)
  - Institute for Certification of Computing Professionals
  - International Association for Management of Technology
  - Professional Engineers Ontario
  - TASSQ (Toronto Association of Systems and Software Quality)
  - The Information Systems Audit and Control Association, Toronto Chapter

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- How current is the information provided here?
  - Ontario Job Futures uses a variety of information sources. Most charts and tables use data from the 2011 National Household Survey, and these are updated every 5 years. "How quickly has employment grown..." also uses data from the Labour Force Survey, which are updated every year. However, we use 2011 to be consistent with the National Household Survey data. The Employment Prospect ratings are based on occupational projections developed every two years, and these are also the source for the chart "How are job openings for this occupation expected to compare...". Information on licensing bodies and associations is updated as needed to add or remove groups, and update links.

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- Read about the main duties, common titles and other information for this occupation at the National Occupational Classification website



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