

MICHIGAN'S LABOR MARKET NEWS

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JULY 2018

Analysis of the Michigan IT Talent Survey

Feature Article pg. 16

Occupational Focus: Web Developers

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Data Spotlight: A Look at Requirements for IT-Related Jobs

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The Michigan jobless rate edged down by 0.1 percentage points in May.

MAY 2018 JOBLESS RATE

MICHIGAN
4.6%
NATIONAL
3.8%

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IT'S BIGGER THAN DATA.

The Bureau of Labor Market Information and Strategic Initiatives is the official source for high quality demographic and labor market information for the state of Michigan and its regions. We administer the state's federal-state cooperative programs with the Bureau of Labor Statistics (BLS) and the Census Bureau and produce high-quality information and analysis through grants from the U.S. Department of Labor and from partner agencies in the state of Michigan. We provide our national, state, and local partners and customers with *accurate, objective, reliable, timely, accessible, and transparent* information and insights.

Michigan's jobless rate edged down to 4.6 percent in May. The state's total workforce increased by 5,000 over the month, a result of employment growing by 10,000 and unemployment down by 5,000. Jobless rates in Michigan have generally fluctuated only a modest amount in the past year, holding at or below 4.8 percent since early 2017. May's jobless rate was slightly higher than the May 2017 rate of 4.4 percent. Payroll jobs grew by 11,800 in May, bringing the state's total payroll job count to 4,425,400. Most major industry sectors saw gains, with *Education and health services*, *Leisure and hospitality*, and *Construction* leading the way. Over the year, payroll jobs were up by 57,800 or 1.3 percent, with nearly all major industry sectors posting job totals above May 2017 levels.

This month's issue looks at the labor market for Information Technology (IT) workers. Our *Feature Article* shares the results from Michigan's IT Talent Survey, using a small, network sample of IT employers to explore the education and training requirements for some IT-related job titles. Our *Relevant Rankings* looks at IT-related employment across the country (where Michigan rank 26th among the states with 2.8 percent of total employment in IT-related occupations) and in Michigan's metro areas. Meanwhile, the *Map of the Month* highlights IT-related program completers and our *Data Spotlight* looks at requirements for IT-related jobs titles according to three different sources of information.

We hope you enjoy this issue of Michigan's Labor Market News. Please let us know if there is something you would like to know more about.



JASON PALMER

DIRECTOR

Bureau of Labor Market Information
and Strategic Initiatives

MICHIGAN'S MAY 2018 UNEMPLOYMENT RATE DECLINES SLIGHTLY

The seasonally adjusted Michigan jobless rate in May edged down over the month by one-tenth of a percentage point to 4.6 percent. Total employment rose by 10,000 over the month while the number of unemployed in the state declined by 5,000. In May, Michigan's workforce grew by 5,000.

Since May 2017, Michigan's jobless rate increased slightly by two-tenths of a percentage point. The national unemployment rate declined by five-tenths of a percentage point over this period. The state's May jobless rate was eight-tenths of a percentage point above the national rate. The U.S. jobless rate decreased over the month by one-tenth of a percentage point to 3.8 percent.

Michigan's May jobless rate was the lowest recorded by the state so far in 2018. Since August 2017, the state's monthly unemployment rates have remained within the narrow band of 4.6 to 4.8 percent.

From May 2017 to May 2018, total employment in Michigan increased by 28,000 or 0.6 percent

while the number of unemployed moved upward by 11,000 or 5.2 percent. Nationally over the same period, total employment rose by 1.7 percent and the number of unemployed declined by 11.3 percent. Since May 2017, Michigan's workforce advanced by 40,000 or 0.8 percent, which was slightly outpaced by the national growth rate of 1.1 percent.

A Longer View

Michigan's seasonally adjusted unemployment rates have been relatively stable since mid-2015 (see chart below). From May 2015 to August 2015, the state's jobless rate declined from 5.6 to 5.2 percent. Since August 2015, Michigan's monthly unemployment rates remained within the 4.4 to 5.2 percent range. However, Michigan's monthly rates have stayed at or below 4.8 percent since February 2017, showing marginal improvement since 2015.

From May 2015 to May 2018, total employment rose in Michigan by 206,000 or 4.6 percent while the number of unemployed fell by 43,000 or 16.0 percent. Nationally over this period,

total employment increased by a similar 4.5 percent, however the number of unemployed in the U.S. dropped by 30.0 percent, well outpacing Michigan's reduction. Since May 2015, Michigan's unemployment rate declined by 1.0 percentage point while the national rate fell by 1.7 percentage points.

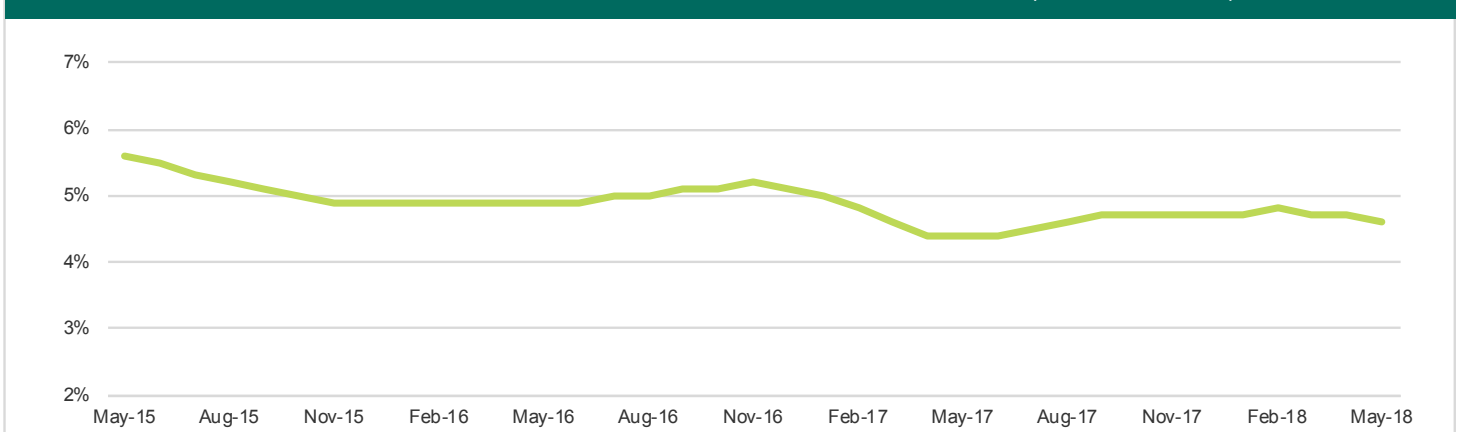
Michigan's jobless rate decrease since May 2015 lagged the national drop mainly due to a stronger pace of labor force growth in Michigan (see table below). Unemployed individuals continued to enter Michigan's labor market seeking employment as the job market improved.

JIM RHEIN
Economic Specialist

MICHIGAN LABOR FORCE ESTIMATES (SEASONALLY ADJUSTED)

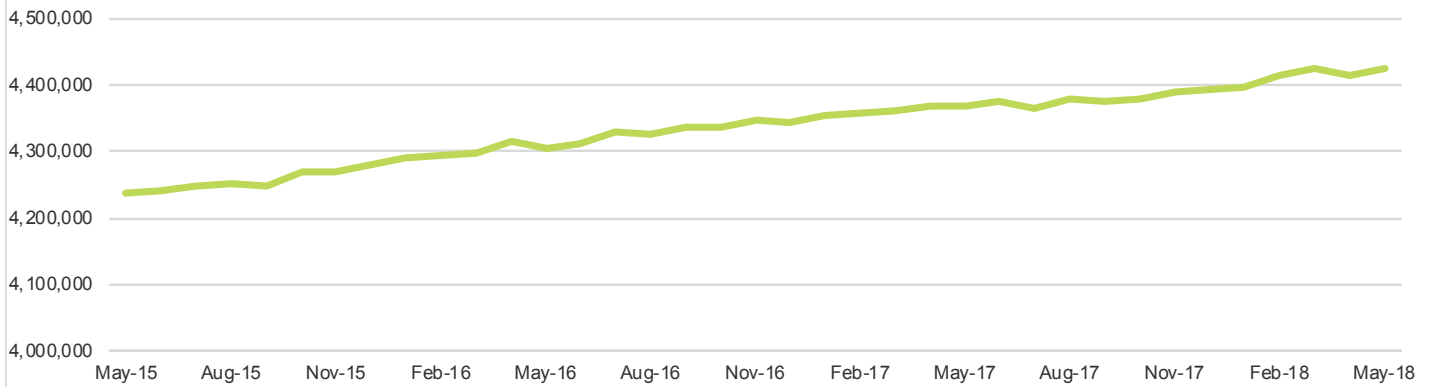
	MAY 2018	APR 2018	MAY 2017	CHANGE OVER THE MONTH	CHANGE OVER THE YEAR
Labor Force	4,908,000	4,903,000	4,868,000	+5,000	+40,000
Employed	4,684,000	4,674,000	4,656,000	+10,000	+28,000
Unemployed	223,000	228,000	212,000	-5,000	+11,000
Jobless Rate	4.6	4.7	4.4	-0.1	+0.2

MICHIGAN SEASONALLY ADJUSTED MONTHLY JOBLESS RATES (MAY 2015 - MAY 2018)





MICHIGAN SEASONALLY ADJUSTED MONTHLY PAYROLL JOBS (MAY 2015-MAY 2018)



MICHIGAN JOB TRENDS BY INDUSTRY SECTOR

Monthly Overview

Total nonfarm jobs in Michigan increased by 11,800 in May to total 4,425,400. These additions were reported in eight of the 11 major industry sectors. The largest payroll gains were recorded in *Education and health services* (+3,100), *Leisure and hospitality* (+2,800), and *Construction* (+2,700). Notable increases also occurred in the broad sectors of *Other services* (+1,400) and *Manufacturing* (+1,300). Monthly job cuts were limited to minor reductions in *Information* and *Professional and business services*. *Mining and logging* job levels were unchanged over the month. Job levels in the state's *Transportation equipment manufacturing* sector were also flat in May.

Over the Year Analysis

Total nonfarm jobs rose by 57,800, or 1.3 percent, since May 2017. This was below the 1.6 percent growth rate nationally during this period. In Michigan, all major industry sectors except *Information* (-2,000) added jobs over the past year. The major sectors of *Construction* (+12,500), *Leisure and hospitality* (+8,800), *Professional and business services* (+8,200), and *Trade, transportation, and utilities* (+7,800) reported the largest increases. Smaller job advances were also reported in *Education and health services* (+6,700), *Government* (+5,900), *Manufacturing* (+3,700), and *Other services* (+3,600).

Michigan vs. U.S. Industry Comparison

In Michigan, total nonfarm payroll employment increased by 0.7 percent during the first five months of this year, or by 30,600 jobs. This matched the rate of job growth nationally during this period and was somewhat higher than the 0.5 percent job gain in Michigan during 2017.

The industry sectors where Michigan outperformed the national industry averages over this period included *Construction* (+4.0 percent), *Other services* (+1.1 percent), *Education and health services* (+1.0 percent), *Trade, transportation, and utilities* (+0.9 percent), *Professional and business services* (+1.1 percent), and *Financial activities* (+0.7 percent).

The broad sectors where Michigan's job change has performed at or below the national industry averages so far in 2018 were *Leisure and hospitality* (+0.5 percent), *Government* (-0.4 percent), *Manufacturing* (+0.2 percent), *Information* (-2.3 percent), and *Mining and logging* (+1.4 percent).

Significant Industry Employment Developments

LEISURE AND HOSPITALITY

The number of jobs in this broad sector rose by 2,800 in May. All this gain was recorded in the *Arts, entertainment, and recreation* subsector (+3,200). This subsector increase was partially due to stronger seasonal hiring in *Amusement, gambling, and recreational industries* during May and was linked to somewhat weaker hiring in April. Payrolls notched lower by 400 in *Accommodation and food services* on weaker than typical jobs gains in *Limited-service eating places*. Between May 2017 and May 2018, job levels in the broad sector have grown by 8,800 or 2.0 percent. This gain was mostly located in the *Accommodation and food services* (+8,400) subsector. Nationally, employment rose by 21,000 over the month and by 1.6 percent over the year.

CONSTRUCTION

Job levels in this broad sector moved higher by 2,700 over the month. This followed a somewhat weaker seasonal job increase in April that was partially due to colder weather conditions. The subsectors with the largest May payroll expansions were *Heavy and civil engineering construction* and *Specialty trade contractors*. Since May 2017, jobs in the broad sector have grown by 12,500 or 7.7 percent. This over-the-year gain accounted for 21.6 percent of the increase in total nonfarm employment during this period. Nationally, employment was up by 25,000 over the month and by 4.1 percent since May 2017.

OTHER SERVICES

Payrolls in this sector increased by 1,400 jobs in May. This followed a 600 job decline in April. The May advance was mostly due to stronger than typical hiring in the *Religious, grantmaking, civic,*

professional, similar organizations subsector. Job growth in the broad sector has been strong with 1,800 workers added to company payrolls so far in 2018. These 2018 additions were double the number of workers added (+900) during the first five months of 2017. Over the year, employment levels have increased by 3,600 or by 2.1 percent. Nationally, job levels rose by 13,000 over the month and by 1.7 percent over the year.

METROPOLITAN STATISTICAL AREAS (MSAs)

On a *not seasonally adjusted* basis, total May nonfarm jobs advanced in 12 of the 14 Michigan metro areas. These increases ranged from 0.2 percent in Lansing and Kalamazoo to 1.9 percent in Muskegon. The exceptions were Bay City where job levels remained unchanged and the Ann Arbor metro area which saw a small decline (-0.1 percent) in payroll jobs during the month.

The metro areas of Muskegon (+1.9 percent), Midland and Benton Harbor (+1.6 percent each), and Flint (+1.5 percent) added jobs at or above the 1.5 percent growth rate statewide during the month. The Battle Creek (+1.4 percent) and Detroit (+1.3 percent) metro areas also posted job growth near the statewide average.

The metro areas with above average job expansion during May saw gains in both the *Goods producing* and *Service providing* sectors. This was particularly true in Flint, which recorded a 3.4 percent increase in *Good producing* jobs along with a statewide average gain of 1.2 percent in the *Service providing* sector.

The modest decrease in Ann Arbor was mostly due to a seasonal job decline in *State government* caused by the end of the post-secondary school year.

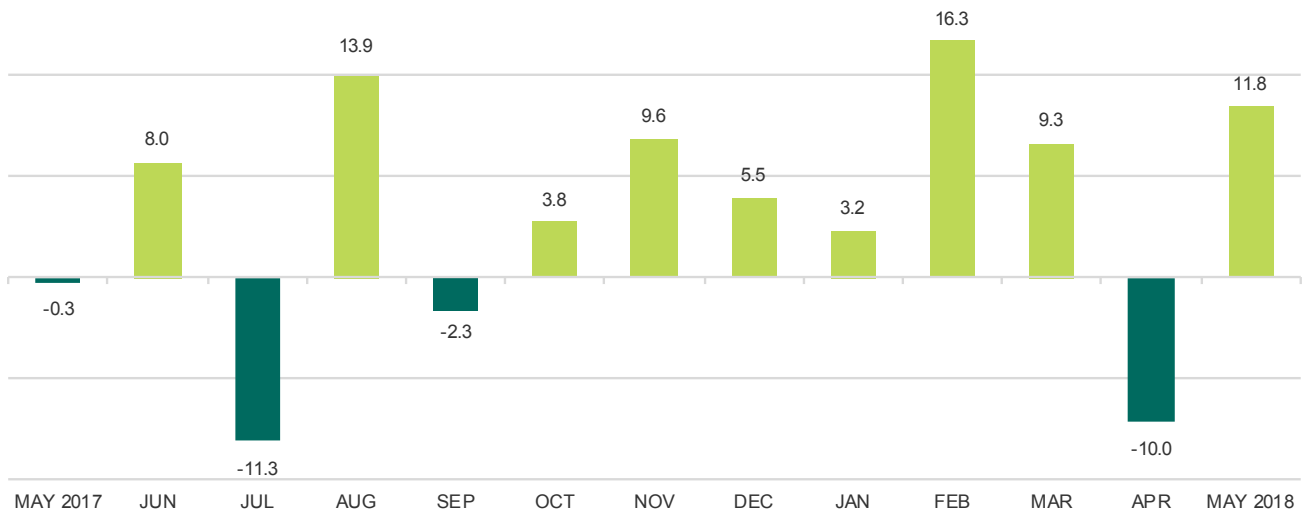
JEFFREY AULA
Economic Analyst

MICHIGAN PAYROLL JOBS (SEASONALLY ADJUSTED)

INDUSTRY	MAY 2018	APR 2018	MAY 2017	OVER THE MONTH		OVER THE YEAR	
				LEVEL	PERCENT	LEVEL	PERCENT
TOTAL NONFARM	4,425,400	4,413,600	4,367,600	11,800	0.3%	57,800	1.3%
Total Private	3,817,800	3,806,100	3,765,900	11,700	0.3%	51,900	1.4%
Private Service-Providing	3,017,100	3,009,400	2,981,400	7,700	0.3%	35,700	1.2%
GOODS-PRODUCING	800,700	796,700	784,500	4,000	0.5%	16,200	2.1%
Mining, Logging, and Construction	181,600	178,900	169,100	2,700	1.5%	12,500	7.4%
Mining and Logging	7,300	7,300	7,300	0	0.0%	0	0.0%
Construction	174,300	171,600	161,800	2,700	1.6%	12,500	7.7%
Manufacturing	619,100	617,800	615,400	1,300	0.2%	3,700	0.6%
Durable Goods	466,700	465,300	465,300	1,400	0.3%	1,400	0.3%
Transportation Equipment Manufacturing	188,300	188,100	190,100	200	0.1%	-1,800	-0.9%
Nondurable Goods	152,400	152,500	150,100	-100	-0.1%	2,300	1.5%
SERVICE-PROVIDING	3,624,700	3,616,900	3,583,100	7,800	0.2%	41,600	1.2%
Trade, Transportation, and Utilities	795,300	794,500	787,500	800	0.1%	7,800	1.0%
Wholesale Trade	176,100	175,200	172,800	900	0.5%	3,300	1.9%
Retail Trade	473,300	473,700	473,100	-400	-0.1%	200	0.0%
Transportation, Warehousing, and Utilities	145,900	145,600	141,600	300	0.2%	4,300	3.0%
Information	54,700	54,900	56,700	-200	-0.4%	-2,000	-3.5%
Financial Activities	220,300	219,900	217,700	400	0.2%	2,600	1.2%
Finance and Insurance	165,500	165,200	163,600	300	0.2%	1,900	1.2%
Real Estate and Rental and Leasing	54,800	54,700	54,100	100	0.2%	700	1.3%
Professional and Business Services	656,900	657,500	648,700	-600	-0.1%	8,200	1.3%
Professional, Scientific, and Technical Services	296,400	296,400	292,800	0	0.0%	3,600	1.2%
Management of Companies and Enterprises	68,800	68,500	66,100	300	0.4%	2,700	4.1%
Administrative and Support and Waste Management and Remediation Services	291,700	292,600	289,800	-900	-0.3%	1,900	0.7%
Education and Health Services	678,400	675,300	671,700	3,100	0.5%	6,700	1.0%
Educational Services	73,400	72,600	74,200	800	1.1%	-800	-1.1%
Health Care and Social Assistance	605,000	602,700	597,500	2,300	0.4%	7,500	1.3%
Leisure and Hospitality	439,900	437,100	431,100	2,800	0.6%	8,800	2.0%
Arts, Entertainment, and Recreation	53,000	49,800	52,600	3,200	6.4%	400	0.8%
Accommodation and Food Services	386,900	387,300	378,500	-400	-0.1%	8,400	2.2%
Other Services	171,600	170,200	168,000	1,400	0.8%	3,600	2.1%
Government	607,600	607,500	601,700	100	0.0%	5,900	1.0%
Federal Government	52,000	52,200	52,700	-200	-0.4%	-700	-1.3%
State Government	192,700	193,300	189,200	-600	-0.3%	3,500	1.8%
Local Government	362,900	362,000	359,800	900	0.2%	3,100	0.9%



MICHIGAN OVER THE MONTH PAYROLL JOB CHANGE (IN THOUSANDS)

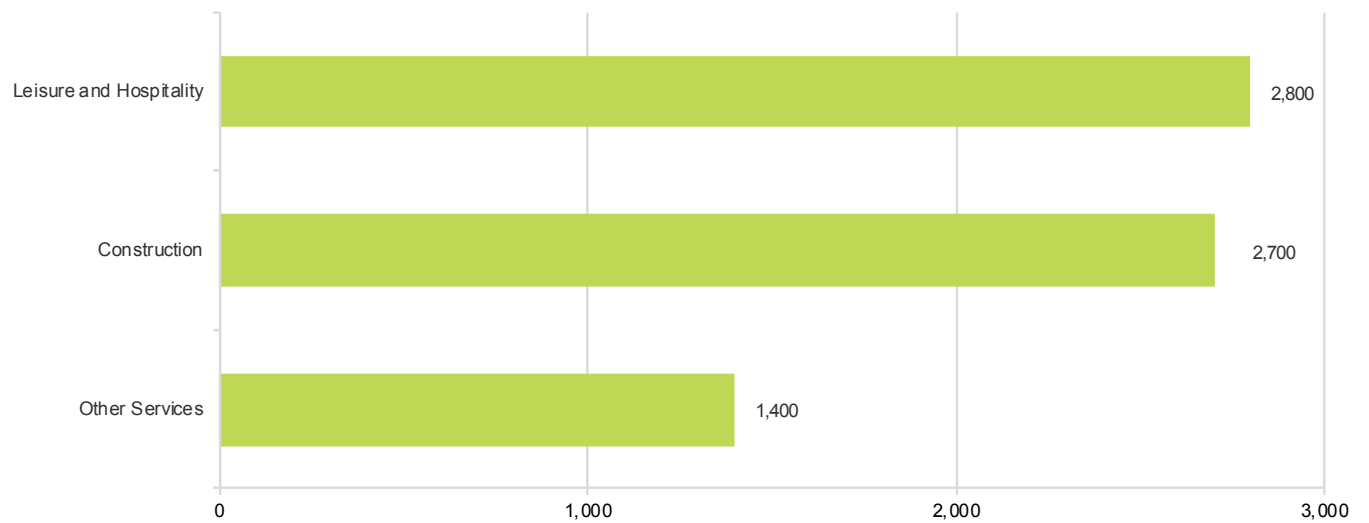


MICHIGAN - NATIONAL JOB CHANGE BY MAJOR INDUSTRY SECTOR (DECEMBER 2017 - MAY 2018)

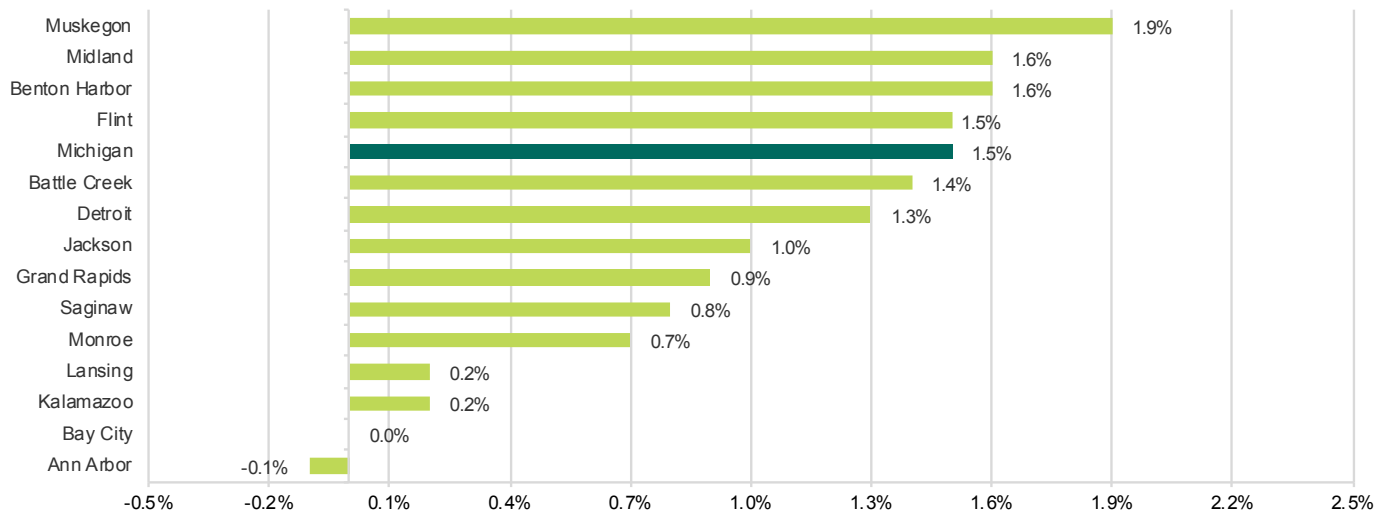
INDUSTRY	MICHIGAN		UNITED STATES	
	NUMERIC CHANGE	PERCENT CHANGE	NUMERIC CHANGE	PERCENT CHANGE
Total Nonfarm	30,600	0.7%	1,037,000	0.7%
Mining and Logging	100	1.4%	35,000	5.0%
Construction	6,700	4.0%	138,000	2.0%
Manufacturing	1,300	0.2%	115,000	0.9%
Trade, Transportation, and Utilities	7,100	0.9%	196,000	0.7%
Information	-1,300	-2.3%	-1,000	0.0%
Financial Activities	1,500	0.7%	48,000	0.6%
Professional and Business Services	7,100	1.1%	214,000	1.0%
Educational and Health Services	6,700	1.0%	183,000	0.8%
Leisure and Hospitality	2,000	0.5%	74,000	0.5%
Other Services	1,800	1.1%	40,000	0.7%
Government	-2,400	-0.4%	-5,000	0.0%



MICHIGAN OVER THE MONTH JOB CHANGE BY SELECT INDUSTRY (APRIL 2018 TO MAY 2018)



METROPOLITAN AREA JOB CHANGE APRIL TO MAY 2018 (NOT SEASONALLY ADJUSTED)



REGIONAL LABOR MARKET ANALYSIS

ANN ARBOR METROPOLITAN AREA

- Joblessness in the Ann Arbor region edged up by 0.2 percentage points in May to 3.0 percent.
- Ann Arbor registered the largest metro area employment gain over the past year, up by 3.4 percent since May 2017.

MONTHLY INDUSTRY DEVELOPMENTS

- Payroll employment in the Ann Arbor region edged down by 200, or 0.1 percent, in May.
- Minor increases in most private industry sectors were offset by a large decline of 2,400 jobs in *Government* as jobs fell for the summer in *State education*.

INDUSTRY TRENDS

- Ann Arbor's *Healthcare and social assistance* reached its all-time high level of 24,300 jobs in May, a level last seen in June 2017.
- Ann Arbor was the only Michigan metro region to record a decline in nonfarm employment over the month.

BATTLE CREEK METROPOLITAN AREA

- The Battle Creek MSA jobless rate moved down in May by three tenths of a percentage point, mainly from an employment gain of 1.2 percent.
- Since May 2017, labor force levels were stable. Employment edged up, while unemployment slightly declined.

MONTHLY INDUSTRY DEVELOPMENTS

- May payroll jobs in the Battle Creek region were up by 1.4 percent to a total of 58,900. Seasonal job gains in *Construction*, and *Leisure and hospitality* were partially offset by small job cuts in Business services, and in private *Educational and health services*.
- Over the past year, *Manufacturing* and *Retail trade* jobs grew. Employment in other sectors was flat or down.

INDUSTRY TRENDS

- Since 2009, *Leisure and hospitality* jobs in the Battle Creek MSA advanced at about a third of the statewide rate (4.7 vs. 13.5 percent).

BAY CITY METROPOLITAN AREA

- The Bay City jobless rate declined by half a percentage point since April 2018, down to 4.7 percent in May.
- The number of unemployed in the region fell by 11.1 percent over the year.

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm jobs in the Bay City area remained unchanged over the month.
- Small job increases in industries such as *Professional and business services* and *Mining, logging and construction* were offset by a seasonal decline in *Government*.

INDUSTRY TRENDS

- The *Manufacturing* sector leads the metro area in job additions over the past year.

DETROIT-WARREN-DEARBORN METRO AREA

- Joblessness in the Detroit metro region inched up by 0.1 percentage points over the month to 3.7 percent.
- The civilian labor force rose by 1.2 percent both over the month and over the year.

MONTHLY INDUSTRY DEVELOPMENTS

- Payroll jobs in the Detroit metro area increased by 26,900 in May, or 1.3 percent, primarily due to job gains in *Leisure and hospitality* (+7,800) and *Mining, logging and construction* (+7,400).

INDUSTRY TRENDS

- Detroit's *Merchant wholesalers, durable goods* sector has been increasing in employment over the past several years, culminating in an eleven-year high level of 54,700 jobs in May.

FLINT METROPOLITAN AREA

- Flint's jobless rate declined by 0.3 percentage points in May to 4.7 percent.
- Total employment moved up seasonally by 1.6 percent over the month.

MONTHLY INDUSTRY DEVELOPMENTS

- Flint's total nonfarm job level advanced by 2,100 over the month, an increase of 1.5 percent, with large seasonal job additions in *Mining, logging and construction* and *Leisure and hospitality*.

INDUSTRY TRENDS

- Flint registered the third largest numeric over-the-month advance in payroll employment (behind the Detroit and Grand Rapids metropolitan statistical areas).

GRAND RAPIDS-WYOMING METROPOLITAN AREA

- The Grand Rapids regional jobless rate was stable in May, edging down by 0.1 percentage points to 2.9 percent. This rate was nearly a full percentage point lower than that of the state.
- Labor force expansion in this region was relatively strong over the last year, ranking second statewide (behind Ann Arbor), and up 2.3 percent since May 2017.

MONTHLY INDUSTRY DEVELOPMENTS

- Payroll employment in Grand Rapids rose by 5,300 over the month (+0.9 percent), with large seasonal job gains seen in *Leisure and hospitality* (+3,000), *Mining, logging, and construction* (+1,400), and *Trade, transportation, and utilities* (+1,200).

INDUSTRY TRENDS

- Grand Rapids' *Mining, logging, and construction* sector reached a twelve-year high level of 25,800 jobs in May.

CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

	ANN ARBOR			BATTLE CREEK			BAY CITY		
	MAY 2018	APR 2018	MAY 2017	MAY 2018	APR 2018	MAY 2017	MAY 2018	APR 2018	MAY 2017
PLACE OF RESIDENCE									
Labor Force	197,500	196,500	191,500	64,000	63,400	63,900	50,800	50,800	50,700
Employment	191,500	190,900	185,200	61,300	60,600	61,100	48,500	48,200	48,000
Unemployment	6,000	5,600	6,300	2,600	2,800	2,900	2,400	2,700	2,700
Rate (percent)	3.0	2.8	3.3	4.1	4.4	4.5	4.7	5.2	5.2
PLACE OF WORK									
Total Nonfarm Jobs	224,600	224,800	217,600	58,900	58,100	59,300	35,500	35,500	35,300
Mining, Logging, and Construction	4,600	4,400	4,300	1,700	1,500	1,800	1,200	1,100	1,200
Manufacturing	14,900	14,700	14,600	12,600	12,400	12,300	4,400	4,400	4,000
Trade, Transportation, and Utilities	25,800	25,600	26,200	9,200	9,000	9,100	7,600	7,600	7,600
Wholesale Trade	6,100	6,100	5,900	*	*	*	*	*	*
Retail Trade	16,000	15,800	16,600	5,700	5,600	5,500	5,200	5,100	5,100
Information	5,100	5,100	5,000	*	*	*	500	500	500
Financial Activities	7,200	7,100	7,100	1,200	1,200	1,200	1,300	1,300	1,300
Professional and Business Services	30,700	30,100	29,900	6,200	6,300	6,300	2,700	2,600	2,700
Educational and Health Services	28,300	28,200	28,400	10,800	10,900	11,000	6,500	6,600	6,600
Leisure and Hospitality	18,400	17,600	18,200	4,500	4,300	4,700	4,500	4,400	4,500
Other Services	6,300	6,300	6,400	1,900	1,900	2,000	1,400	1,300	1,400
Government	83,300	85,700	77,500	10,600	10,600	10,800	5,400	5,700	5,500
DETROIT-WARREN-DEARBORN									
FLINT									
GRAND RAPIDS-WYOMING									
	MAY 2018	APR 2018	MAY 2017	MAY 2018	APR 2018	MAY 2017	MAY 2018	APR 2018	MAY 2017
PLACE OF RESIDENCE									
Labor Force	2,117,700	2,093,200	2,092,700	184,600	182,400	183,700	586,200	581,600	572,800
Employment	2,039,900	2,017,100	2,022,100	175,900	173,200	174,400	569,200	564,100	554,800
Unemployment	77,800	76,100	70,600	8,700	9,200	9,300	17,100	17,500	18,000
Rate (percent)	3.7	3.6	3.4	4.7	5.0	5.0	2.9	3.0	3.1
PLACE OF WORK									
Total Nonfarm Jobs	2,036,600	2,009,700	2,019,400	142,700	140,600	142,300	569,100	563,800	557,400
Mining, Logging, and Construction	78,800	71,400	74,200	5,800	5,200	5,400	25,800	24,400	23,900
Manufacturing	254,800	252,700	254,600	12,200	12,200	12,600	117,100	116,500	115,100
Trade, Transportation, and Utilities	374,000	369,700	368,100	29,800	29,500	29,900	97,800	96,600	97,100
Wholesale Trade	89,200	88,500	86,800	5,900	5,900	5,900	32,000	31,600	31,800
Retail Trade	212,800	209,800	212,100	20,000	19,700	20,100	50,300	49,600	49,900
Information	26,700	26,700	27,500	3,900	3,900	4,100	5,400	5,400	5,700
Financial Activities	117,400	115,100	115,300	6,100	6,100	6,200	25,900	26,000	26,300
Professional and Business Services	393,500	391,700	396,800	16,000	15,800	15,300	82,600	82,400	80,200
Educational and Health Services	315,500	313,300	314,100	28,600	28,300	28,700	94,000	93,700	90,100
Leisure and Hospitality	211,800	204,000	204,100	15,700	15,100	15,300	50,500	47,500	49,800
Other Services	76,200	75,400	76,400	5,400	5,300	5,500	22,600	22,500	22,400
Government	187,900	189,700	188,300	19,200	19,200	19,300	47,400	48,800	46,800

* Data Not Available

JACKSON METROPOLITAN AREA

- The Jackson MSA jobless rate edged down by two tenths of a percentage point in May to 3.8 percent. Labor force was up by 1.1 percent, mainly due to a seasonal employment improvement of 900 (+1.3 percent).
- Over the past year, the jobless rate fell primarily due to a 1.7 percent employment advance, outpacing the statewide gain.

MONTHLY INDUSTRY DEVELOPMENTS

- Jackson MSA payroll jobs were up by 1.0 percent in May. Job advances occurred across several sectors, led by *Leisure and hospitality*, *Retail trade*, and *Government*.
- Over the past year, payroll jobs were little changed (+300).

INDUSTRY TRENDS

- Since 2009, *Leisure and hospitality* jobs in the Jackson MSA expanded by 12.5 percent; almost as fast as the statewide growth rate of 13.5 percent.

LANSING-EAST LANSING METROPOLITAN AREA

- The Lansing metro area unemployment rate inched down in May by 0.1 percentage points to 3.4 percent.
- The number of unemployed declined by 8.6 percent over the year.

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm jobs in Lansing edged up by 400 over the month, or 0.2 percent.
- Increases in most major industry sectors were partially offset by a seasonal job cut in *Government* (-800).

INDUSTRY TRENDS

- Lansing's *Financial Activities* sector matched its all-time high level of 16,700 jobs in May, a level last seen in August 2017.

MONROE METROPOLITAN AREA

- Monroe's jobless rate edged up by 0.3 percentage points over the month to 4.0 percent, whereas the rate fell statewide.
- The region exhibited the largest over-the-month unemployment rate increase out of all Michigan metro areas.

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm employment in Monroe advanced by 300, or 0.7 percent, in May 2018, mainly due to a seasonal addition of 300 jobs in *Leisure and hospitality*.

INDUSTRY TRENDS

- Monroe's *Retail trade* sector has recorded a declining job trend since 2013, but so far in 2018, monthly job levels have been similar to 2017 counts.

KALAMAZOO-PORTAGE METROPOLITAN AREA

- The Kalamazoo-Portage metro area unemployment rate was stable in May, inching down by 0.2 percentage points to 3.6 percent. This rate was slightly below the statewide rate.
- Since May 2017, labor force rose by 1.2 percent (+2,000), and the unemployment rate edged down by 0.4 percentage points.

MONTHLY INDUSTRY DEVELOPMENTS

- Regional payroll jobs showed minimal change in May. Gains in *Construction*, *Leisure and hospitality* and *Retail trade* were offset by seasonal cuts in *State education*.
- Since May 2017, jobs advanced by 1,600, mostly in *Construction*, *Health care*, *Leisure and hospitality*, and *Professional and business services*.

INDUSTRY TRENDS

- Nonfarm jobs in the Kalamazoo-Portage MSA in 2017 reached the highest level in the region since the year 2000.

MIDLAND METROPOLITAN AREA

- Midland's unemployment rate declined by half a percentage point in May, to 3.9 percent.
- The civilian labor force in the region edged up by 1.0 percent in May, matching the over-the-month labor force advancement of the state.

MONTHLY INDUSTRY DEVELOPMENTS

- Midland payroll jobs moved up by 600 in May, or 1.6 percent.
- Job levels were relatively flat over the past year.

INDUSTRY TRENDS

- The vast majority of May job gains in the Midland metro area occurred in the *Private service providing* sector.

MUSKEGON METROPOLITAN AREA

- Joblessness in Muskegon declined by 0.2 percentage points since April, to 4.6 percent for May.
- The civilian labor force in the region remained unchanged over the year.

MONTHLY INDUSTRY DEVELOPMENTS

- Job levels in the Muskegon metro area showed a healthy seasonal gain in May, up by 1,200 or 1.9 percent, with a large 800-job increase seen in *Leisure and hospitality*.

INDUSTRY TRENDS

- The sharp seasonal advance in jobs (on a percentage basis) in Muskegon in May outpaced all other Michigan metro areas.

CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

	JACKSON			KALAMAZOO-PORTAGE			LANSING-EAST LANSING		
	MAY 2018	APR 2018	MAY 2017	MAY 2018	APR 2018	MAY 2017	MAY 2018	APR 2018	MAY 2017
PLACE OF RESIDENCE									
Labor Force	75,500	74,700	74,500	168,900	168,900	166,900	253,600	253,700	251,500
Employment	72,600	71,700	71,400	162,800	162,500	160,200	245,100	244,800	242,200
Unemployment	2,900	3,000	3,100	6,100	6,300	6,700	8,500	8,900	9,300
Rate (percent)	3.8	4.0	4.2	3.6	3.8	4.0	3.4	3.5	3.7
PLACE OF WORK									
Total Nonfarm Jobs	59,100	58,500	58,800	149,300	149,000	147,700	240,600	240,200	239,000
Mining, Logging, and Construction	2,000	1,900	1,900	7,300	6,900	6,400	8,100	7,400	7,800
Manufacturing	10,400	10,300	9,900	21,700	21,600	21,900	20,700	20,800	20,700
Trade, Transportation, and Utilities	12,400	12,300	12,600	27,300	26,700	27,100	38,500	38,500	38,100
Wholesale Trade	*	*	*	7,500	7,400	7,300	6,000	6,000	6,000
Retail Trade	6,600	6,400	6,700	16,100	15,700	16,200	22,600	22,200	22,200
Information	300	300	300	800	800	900	2,600	2,600	2,900
Financial Activities	2,000	2,000	2,000	8,500	8,400	8,400	16,700	16,500	16,400
Professional and Business Services	5,100	5,100	5,100	17,600	17,400	17,400	23,600	23,500	23,600
Educational and Health Services	10,700	10,800	10,600	24,300	24,300	23,800	32,600	32,500	32,300
Leisure and Hospitality	5,600	5,400	5,500	16,400	15,600	16,200	19,000	19,000	19,900
Other Services	2,500	2,500	2,600	5,200	5,200	5,400	10,200	10,000	10,300
Government	8,100	7,900	8,300	20,200	22,100	20,200	68,600	69,400	67,000
PLACE OF RESIDENCE									
Labor Force	40,800	40,400	40,700	77,400	76,600	76,300	78,500	77,500	78,500
Employment	39,200	38,600	38,900	74,300	73,800	73,000	74,900	73,800	74,700
Unemployment	1,600	1,800	1,700	3,100	2,900	3,300	3,600	3,700	3,800
Rate (percent)	3.9	4.4	4.3	4.0	3.7	4.3	4.6	4.8	4.8
PLACE OF WORK									
Total Nonfarm Jobs	37,700	37,100	37,800	42,800	42,500	42,400	64,800	63,600	65,500
Mining, Logging, and Construction	*	*	*	2,000	2,000	2,000	2,300	2,200	2,300
Manufacturing	*	*	*	5,400	5,400	5,700	13,800	13,700	13,600
Trade, Transportation, and Utilities	*	*	*	11,200	11,100	11,100	13,200	13,100	13,700
Wholesale Trade	*	*	*	1,900	1,900	1,800	*	*	*
Retail Trade	*	*	*	5,400	5,300	5,300	10,600	10,500	11,100
Information	*	*	*	*	*	*	800	800	800
Financial Activities	*	*	*	1,000	1,000	1,000	1,700	1,700	1,700
Professional and Business Services	*	*	*	5,500	5,500	5,400	3,800	3,700	3,900
Educational and Health Services	*	*	*	5,100	5,100	5,100	11,800	12,000	12,000
Leisure and Hospitality	*	*	*	4,900	4,600	4,800	7,900	7,100	7,800
Other Services	*	*	*	1,500	1,500	1,500	2,200	2,100	2,200
Government	3,100	3,000	3,100	5,600	5,600	5,300	7,300	7,200	7,500
* Data Not Available									

NILES-BENTON HARBOR METROPOLITAN AREA

- The May jobless rate in the Niles-Benton Harbor MSA was stable, inching down by two tenths of a percentage point to 4.2 percent. Labor force was up 1,100 (+1.5 percent), mainly due to a 1.7 percent employment advancement (+1,200).
- The regional jobless rate edged down by 0.2 percentage points since May 2017.

MONTHLY INDUSTRY DEVELOPMENTS

- Niles-Benton Harbor job counts in May advanced by 1,000 or 1.6 percent, mainly due to seasonal job gains in *Leisure and hospitality* and *Construction*.
- Over the past year, jobs in the Niles-Benton Harbor MSA were down due to losses in the *Private service providing* sector.

INDUSTRY TRENDS

- Retail* jobs in the Niles-Benton Harbor MSA edged up slightly in 2017 after several years of little job change.

SAGINAW METROPOLITAN AREA

- Saginaw's unemployment rate declined by 0.4 percentage points over the month, to 4.6 percent.
- Total employment advanced by 800 or 1.0 percent over the month, while the number of unemployed moved down seasonally by 400.

MONTHLY INDUSTRY DEVELOPMENTS

- May 2018 payroll employment in the Saginaw metro area increased by 700, or 0.8 percent, mainly due to a 400-job addition in the *Leisure and hospitality* sector.

INDUSTRY TRENDS

- Saginaw's *Professional and business services* sector in May matched its all-time high level of 11,700 jobs, a level last recorded in June 2015.

CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

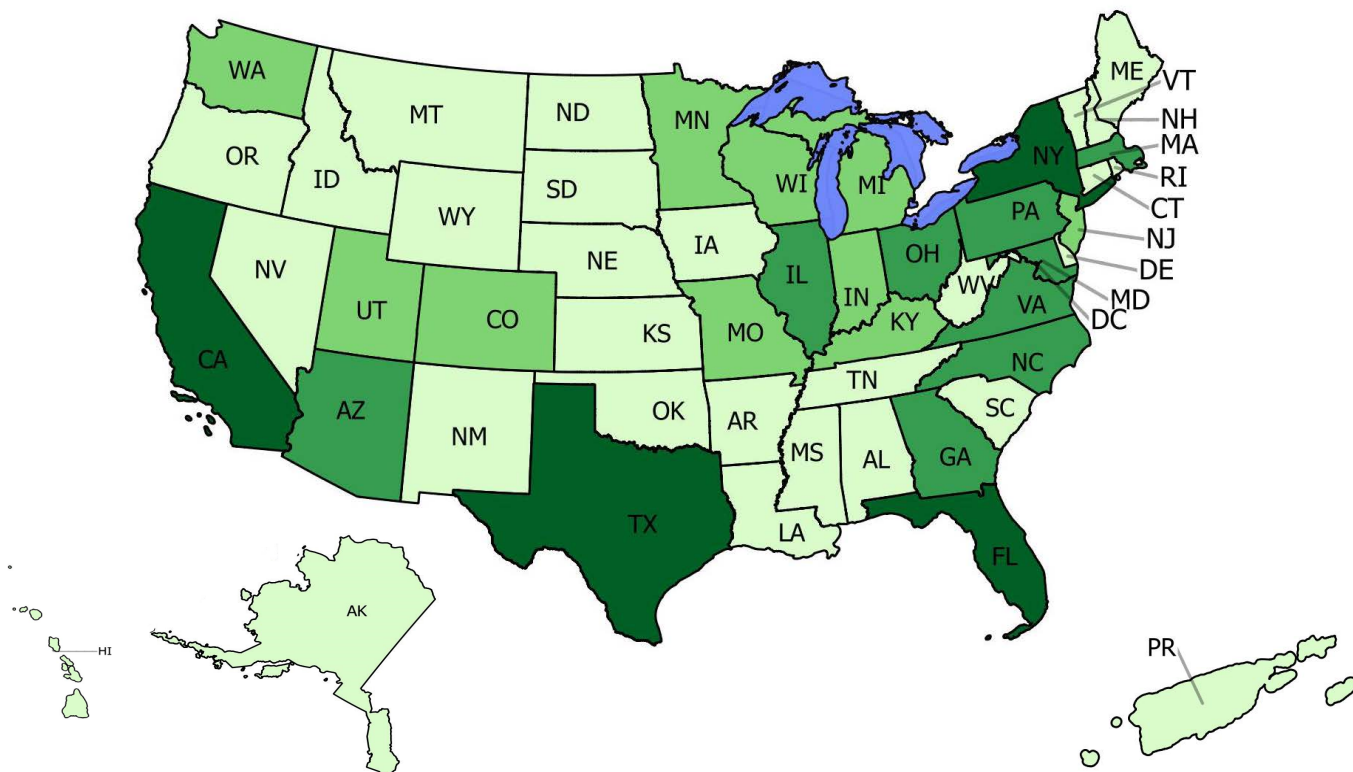
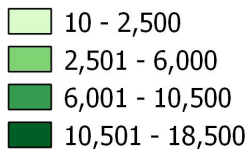
	NILES-BENTON HARBOR			SAGINAW		
	MAY 2018	APR 2018	MAY 2017	MAY 2018	APR 2018	MAY 2017
PLACE OF RESIDENCE						
Labor Force	74,200	73,100	74,400	87,400	86,900	87,000
Employment	71,100	69,900	71,200	83,400	82,600	82,700
Unemployment	3,100	3,200	3,200	4,000	4,400	4,300
Rate (percent)	4.2	4.4	4.4	4.6	5.0	5.0
PLACE OF WORK						
Total Nonfarm Jobs	62,700	61,700	63,500	87,800	87,100	87,600
Mining, Logging, and Construction	2,000	1,800	1,900	3,000	2,800	3,000
Manufacturing	13,700	13,500	13,300	12,400	12,400	12,300
Trade, Transportation, and Utilities	10,800	10,700	11,100	16,200	16,200	16,800
Wholesale Trade	*	*	*	2,200	2,200	2,300
Retail Trade	6,900	6,700	6,800	11,400	11,500	12,000
Information	500	500	500	1,200	1,200	1,400
Financial Activities	2,500	2,500	2,400	3,700	3,600	3,800
Professional and Business Services	4,900	4,900	5,800	11,700	11,500	11,300
Educational and Health Services	9,400	9,500	9,500	16,000	16,000	16,000
Leisure and Hospitality	7,800	7,100	7,900	9,000	8,600	9,200
Other Services	2,300	2,300	2,400	3,300	3,300	3,300
Government	8,800	8,900	8,700	11,300	11,500	10,500

	UPPER PENINSULA			NORTHEAST MICHIGAN			NORTHWEST MICHIGAN		
	MAY 2018	APR 2018	MAY 2017	MAY 2018	APR 2018	MAY 2017	MAY 2018	APR 2018	MAY 2017
PLACE OF RESIDENCE									
Labor Force	137,800	138,200	136,700	84,100	82,000	83,300	152,200	147,700	149,500
Employment	130,100	129,000	128,800	79,200	75,400	78,200	145,300	139,300	142,400
Unemployment	7,600	9,200	7,900	5,000	6,600	5,100	6,900	8,400	7,100
Rate (percent)	5.6	6.7	5.8	5.9	8.0	6.1	4.5	5.7	4.7

MAP OF THE MONTH:

IT-RELATED POSTSECONDARY PROGRAM COMPLETERS BY STATE

Postsecondary IT Completers



Source: Integrated Postsecondary Education Data System (IPEDS)

IT-Related Program Completers in the U.S.

Using data from the Integrated Postsecondary Education Data System (IPEDS), this map displays the total number of program completers in IT-related occupations¹ by state in 2016.

Program completers include students who have completed any type of certificate in IT-related occupations, or a degree at the associate's level and above.

The number of completers does not reflect the number of students in the programs, but rather the number of programs completed. At the

national level, in 2016, there were a reported 209,900 IT program completers among the 50 states, the District of Columbia, and Puerto Rico. California had the greatest number of program completers, nearly 18,500. Texas and Florida followed with 15,700 and 13,500 completers, respectively.

Michigan with its nearly 5,800 total IT-related program completers, ranked 15th in the nation. Bordering Michigan, Ohio ranked 12th nationally, with over 6,500 total completers, while Indiana had about 4,300, and Wisconsin had 4,000. Within Michigan, there was a relatively large disparity in IT completers by award level.

Bachelor's degrees comprised nearly 48 percent of the total, followed by master's degrees with 23 percent, and associate's degrees with 17 percent. The remaining share of IT-related completers was largely composed of certifications (10 percent), with doctoral or professional degrees (2 percent) making up the smallest portion.

DYLAN SCHAFER
Economic Analyst

¹We defined "IT-related occupations" using fifteen (15) Standard Occupational Classification (SOC) job titles. By using program completion data from IPEDS, we were able to create a crosswalk matching fields of study to IT-related professions, thus demonstrating the college and university programs representative of these occupations.



ANALYSIS OF THE MICHIGAN IT TALENT SURVEY

In early 2018, the Department of Technology, Management and Budget (DTMB), Bureau of Labor Market Information and Strategic Initiatives (LMISI) administered Michigan's IT Talent Survey. The primary purpose of the survey was to explore whether employers would consider hiring a candidate without an IT-related bachelor's degree, but with an IT-related award or certificate for their IT-related vacancies. Some labor market information sources would suggest the answer should be "no."

- According to the Bureau of Labor Statistics (BLS), most IT-related occupations¹ (80 percent) require a bachelor's degree or higher.
- According to The Conference Board's Help Wanted Online (HWOL), nearly 90 percent of sampled IT-related postings (among those that detailed education requirements) were looking for candidates with a bachelor's degree or higher.²

However, some employers have complained of a shortage of IT talent, particularly candidates with the right mix of skills, knowledge, and abilities. As such, some have started looking to candidates with IT-related awards or certificates, suggesting the answer may be "yes."

Two other purposes of this survey were: (1) to identify which skills and certifications employers would require of candidates who did not have

an IT-related bachelor's degree, but who had an IT-related award or certificate; and (2) to learn what would need to change with awards and certifications for employers to consider hiring candidates without an IT-related bachelor's degree, but with an IT-related award or certificate.

METHODOLOGY

To explore this question, a brief survey instrument was designed and distributed electronically to a network sample of some of the state's public and private partners. Those sampled were encouraged to include firms in their network, intended to add responses through a snowball sampling technique. The survey was held open for one week, during which 66 firms responded. Responses were analyzed by economic analysts and specialists in the Bureau.

Because this was not a scientific survey with a probability sample, the results are not generalizable to the population and describe only the responding firms. The results, analysis, and conclusions should be considered exploratory.

Results

RESPONSES, FIRM SIZE, AND RESPONDENTS

A total of 66 employers responded to the IT Talent Survey. Mostly large firms, nearly 40 percent of respondents were those employing 500 or more people in Michigan. On the other end of the

spectrum, no firms employed four or fewer people, but 1 in 5 respondents employed between 5 and 49 employees.

The IT Talent Survey was targeted to executive-level leaders. Nearly 60 percent of respondents indicated they were either chief executives (CEOs, COOs) or IT executives (CIOs) in their firm. Another 12 percent said they were human resources directors or held other roles in the firm. About 30 percent of respondents did not answer this question.

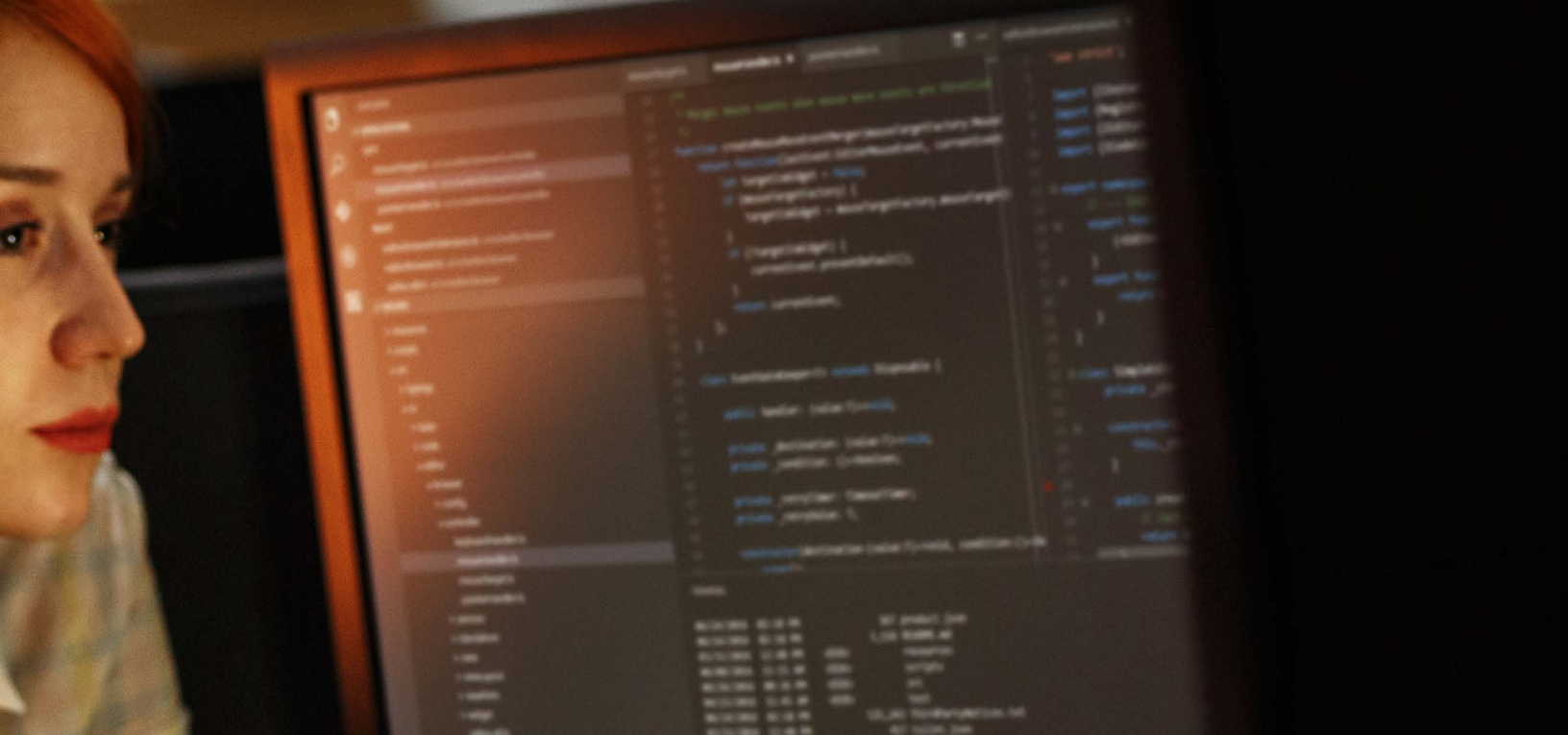
EXPECTATIONS AND HIRING PREFERENCES

Overall, respondents were optimistic about hiring, with 81 percent indicating IT-related employment will "definitely increase" or "probably increase" at their firm. While two percent said IT-related employment will "probably decrease," no respondent believed employment would "definitely decrease."

Over half (56 percent) of respondents said they "definitely" or "probably" would hire a candidate "without an IT-related bachelor's degree, but with an IT-related award or certificate." While 30 percent said, "probably no," just five percent of respondents said, "definitely no."

¹ We defined "IT-related occupations" using fifteen (15) Standard Occupational Classification (SOC) job titles.

² If an online job advertisement does not specify the degree required, HWOL uses BLS guidelines to categorize those jobs into specific degree types.



Analysis

FIRM SIZE AND HIRING PREFERENCES

Responses suggest that the largest employers (500 or more employees) may be the least willing to consider hiring someone without a bachelor's degree for an IT-related vacancy; less than half (42 percent) of the largest firms said they would look at these candidates. Firms of all other sizes were more open to these candidates, led by those with 250 to 499 employees, with 73 percent saying they "probably" or "definitely" would consider hiring someone without a bachelor's degree.

EXPECTATIONS AND HIRING PREFERENCES

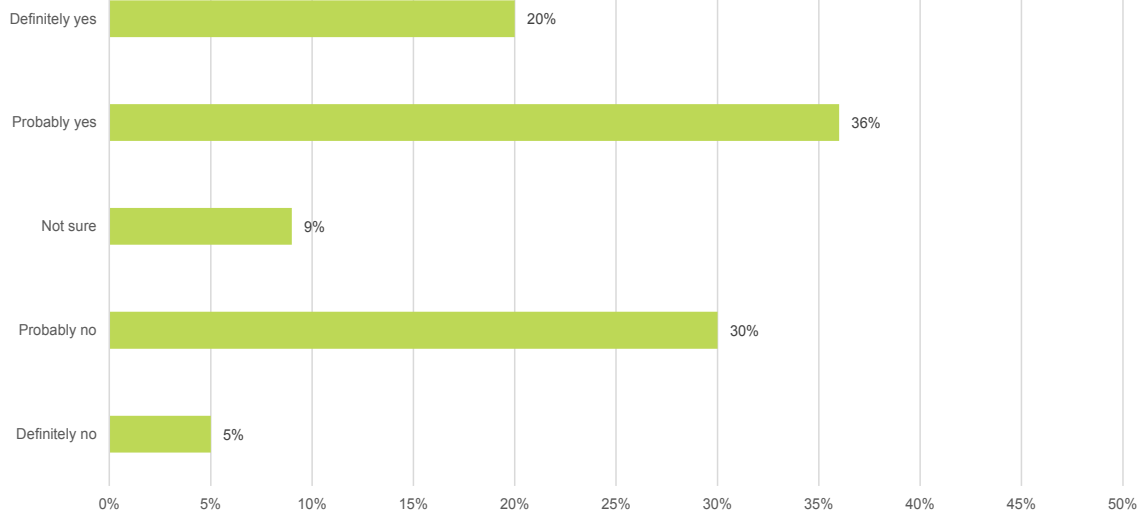
Responses from those firms expecting to expand IT-related employment may give a more dependable measure of willingness to hire someone without a bachelor's degree, since their responses are less hypothetical than other firms. Responses from firms that said they will "definitely increase" IT-related employment indicated a higher willingness to consider hiring a candidate without a bachelor's degree (75 percent).

One explanation for this result is that firms who are expecting to add IT-related workers are

already thinking about what they are looking for in a candidate. Another possibility is that they are already looking for qualified applicants and finding few, causing them to reexamine their hiring criteria.

Another factor to consider is the position of the respondent and their respective hiring preferences. An impressive 70 percent of chief executives (CEOs, COOs, CIOs) said they would consider hiring a candidate without a bachelor's degree. In contrast, HR managers were the least likely with only 20 percent saying they would consider these applicants.

SHARE OF EMPLOYERS WHO WOULD CONSIDER HIRING CANDIDATE WITH IT-RELATED AWARD



OCCUPATIONS AND SKILLS

When employers said they would consider hiring a candidate without an IT-related bachelor's degree, but with an IT-related award or certificate, they were asked to list the job titles to which that consideration would apply. The most commonly cited job title was *Software developers*, getting the nod from 35 percent of respondents. *Computer user support specialists*, an occupation that does not typically require a bachelor's degree, was second with 21 percent. Several higher skill occupations, like *Computer network architects* were selected by fewer employers. Interestingly, *Web developers* was last on the list, selected by only 5 percent of respondents, but is one of the few IT-related occupations that, according to official labor statistics, does not require a bachelor's degree.

Similarly, respondents were asked to identify specific skills required of a potential candidate with less than a bachelor's degree. Beyond options provided in the instrument, many firms detailed

skills in an open-ended field, including various Microsoft programs, project management, Python, web-based training, and C#.

WHY EMPLOYERS MAY NOT HIRE CANDIDATES WITH LESS THAN A BACHELOR'S DEGREE

For those respondents who said they would not hire a candidate with less than a bachelor's degree, many listed their reasons. The survey instrument provided three possible reasons and an additional open-ended field. Nearly three-quarters of employers who would not consider hiring someone with less than a bachelor's degree, believed that the "skills required [for their positions] are generally attained through the completion of a bachelor's degree." The other two reasons, "We need a way to screen many candidates" and "No IT-related award or certificate programs provides the skills that we require" each received the nod from 17 percent of respondents.

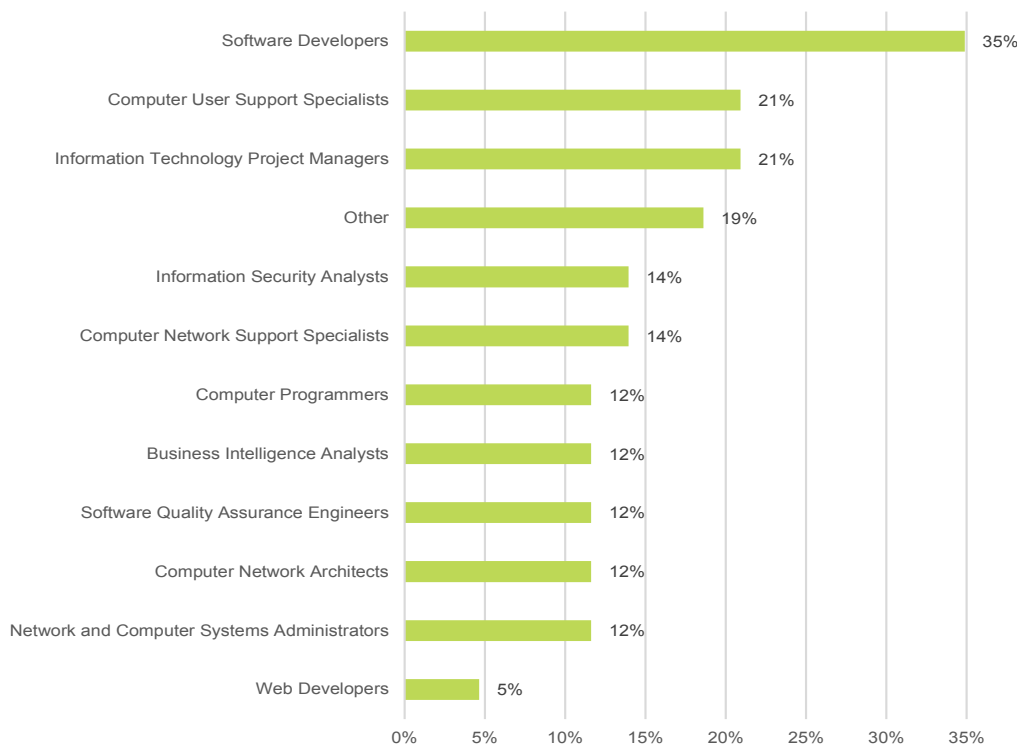
Over a third of respondents (35 percent) detailed their own reasons. One major theme to emerge

from the comments was that employers liked candidates that showed the ambition and discipline required to complete a bachelor's degree. Another theme was the role of related experience, with some employers suggesting a candidate with sufficient experience to supplement the lack of a bachelor's degree would be considered.

Conclusions

- **Demand.** While some labor market information sources would suggest that most IT-related vacancies require a bachelor's degree, these exploratory results suggest there may be demand for candidates without a bachelor's degree, but with an IT-related award or certificate.
- **Businesses are Optimistic.** These results suggest that many employers expect to grow their IT-related workforce in the next year. This implies a potential sense of urgency, as firms are or will soon be looking for talent.

SHARE OF EMPLOYERS WILLING TO HIRE A CANDIDATE WITH AN IT-RELATED AWARD BY OCCUPATION



- **Screening.** The largest firms may be the last ones to relax any bachelor's degree requirement, unless there are other ways to screen many applicants.
- **Human Resources.** A large gap was seen between the hiring preferences of executives and their HR directors, suggesting policy, procedure, or communication may be an obstacle.
- **Not all Occupations are Created Equal.** Employers are more willing to relax the bachelor's degree requirement for certain occupations, like *Software developers*. Employers are less willing to relax the requirements for higher skill titles like *Computer systems analyst* and *Computer network architect*.
- **Ambition and Discipline.** Winning over some employers will require training and certification programs to be rigorous, showing employers that completers have the hard skills and the soft skills for the job.
- **Further Research.** The results, analysis, and conclusions from Michigan's IT Talent Survey should be considered exploratory. Further research on this topic should include a scientific survey with a probability sample. A mixed methods design, including qualitative interviews or focus groups of firms would also be desirable.

JASON PALMER
Director

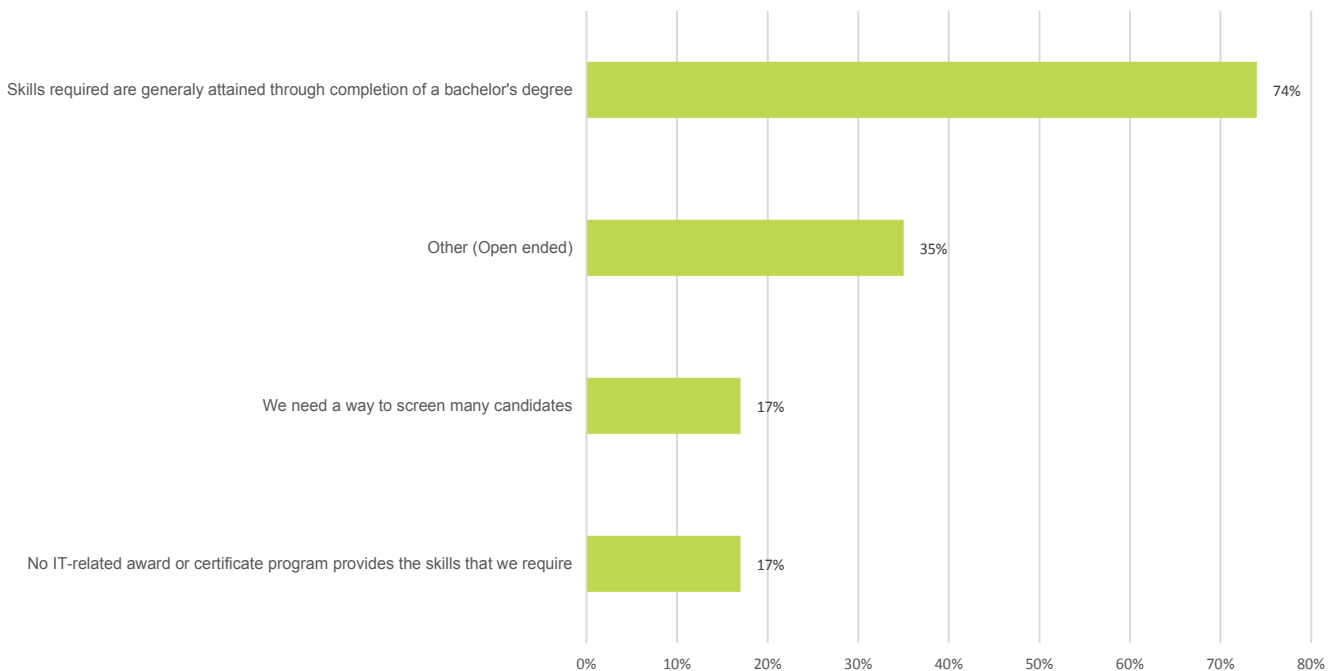
WAYNE ROURKE
Economic Manager

DALIA SALLOUM
Economic Analyst

DYLAN SCHAFER
Economic Analyst

ROBERT WALKOWICZ
Economic Specialist

WHY EMPLOYERS WILL NOT HIRE A CANDIDATE WITHOUT A FOUR-YEAR DEGREE



OCCUPATIONAL FOCUS:

WEB DEVELOPERS

As highlighted in our feature article, IT-related occupations are growing and in high demand. One of the occupations of special interest is *Web developers*. A person employed as a *Web developer* can be involved in the development and design of websites as the main architect of creating the platform. *Web developers* are involved in everything from the technical build of a website, to making the site visually pleasing to viewers all over the world.

JOB TITLES

- Technology Applications Engineer
- Web Architect
- Web Designer
- Web Design Specialist
- Web Development Instructor
- Webmaster

EDUCATION

- The required education level for *Web developers* is an associate's degree.

SKILLS

- *Programming*: Writing computer programs for various purposes.
- *Critical Thinking*: Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.
- *Complex Problem Solving*: Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- *Systems Evaluation*: Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.

TASKS

- Write supporting code for Web applications or Web sites.
- Design, build, or maintain Web sites, using authoring or scripting languages, content creation tools, management tools, and digital media.
- Write, design, or edit Web page content, or direct others producing content.
- Evaluate code to ensure that it is valid, is properly structured, meets industry standards, and is compatible with browsers, devices, or operating systems.

Long-Term Projections - 2016 - 2026

- Between 2016 and 2026, job opportunities for *Web developers* in Michigan will grow nearly twice as fast as total statewide occupations. *Web developer* jobs will increase by 12.6 percent (+440) by 2026, while Michigan jobs overall are expected to rise by 7.0 percent over the decade.
- The average number of annual job openings for *Web developers* will total 300. About 63 percent of all annual openings are expected to come from employment expansion, while the remaining 37 percent will result from the need to replace workers.

Short-Term Projections - 2017 - 2019

- Michigan jobs for *Web developers* are projected to rise by 140 or 3.9 percent by the second quarter of 2019. This short-term growth is slightly higher than the rate expected for all Michigan occupations of 2.3 percent.
- The average number of annual job openings for *Web developers* will be about 320. The need to replace existing workers (+140) and job expansion (+180) will each account for a nearly equal share of annual job openings.

MICHIGAN QUICK FACTS: WEB DEVELOPERS

Number of Jobs 2017	2,720
Projected Job Change 2017-2019	+140 (+3.9%)
Annual Openings	320
Projected Job Change 2016-2026	+440 (+12.6%)
Annual Openings	300
Median Wage 2017	\$60,580 per year \$29.13 per hour
Wage Range	\$35,600 - 98,290 per year \$17.11 - \$47.25 per hour
Education Required	Associate's Degree
Real-Time Job Ads May 2018	754



REDUCTION IN MAY MICHIGAN ONLINE JOB ADVERTISEMENTS

According to the Conference Board's Help Wanted Online (HWOL), the number of seasonally adjusted online job ads in Michigan fell 4.3 percent (-5,971 ads) in May to 134,190. Michigan has recorded a loss in job ads in four of the last five months.

Among neighboring states, job ad reductions were also evident in Indiana, Ohio, and Wisconsin, down by an average of 6,880 or 5.3 percent. Illinois posted an unusually sharp increase in ads in May. Nationally, May job ads declined by 1.1 percent.

Job Ad Declines Outpace Cuts in Unemployed

The number of job advertisements per 100 labor force participants, also referred to as the ad rate, decreased from April to May. The ratio fell by 0.12 to 2.74, indicating that for every 100 people in the workforce there were 2.74 ads.

May's supply/demand rate, the number of unemployed persons per job advertisement, was up to 1.74 as the reduction in seasonally-adjusted unemployment was less than the drop in seasonally-adjusted job advertisements.

Since the beginning of the year, the supply/demand rate has increased from a ratio of 1.46, as reductions in online job ads have exceeded any downward movement in the unemployed. May's supply/demand rate was the highest since the 2013 rate of 1.92.

Non-Seasonally Adjusted Ads

Information is available on advertised jobs by broad occupational group from the Help Wanted Online Data Series, but the data is *not seasonally adjusted*.

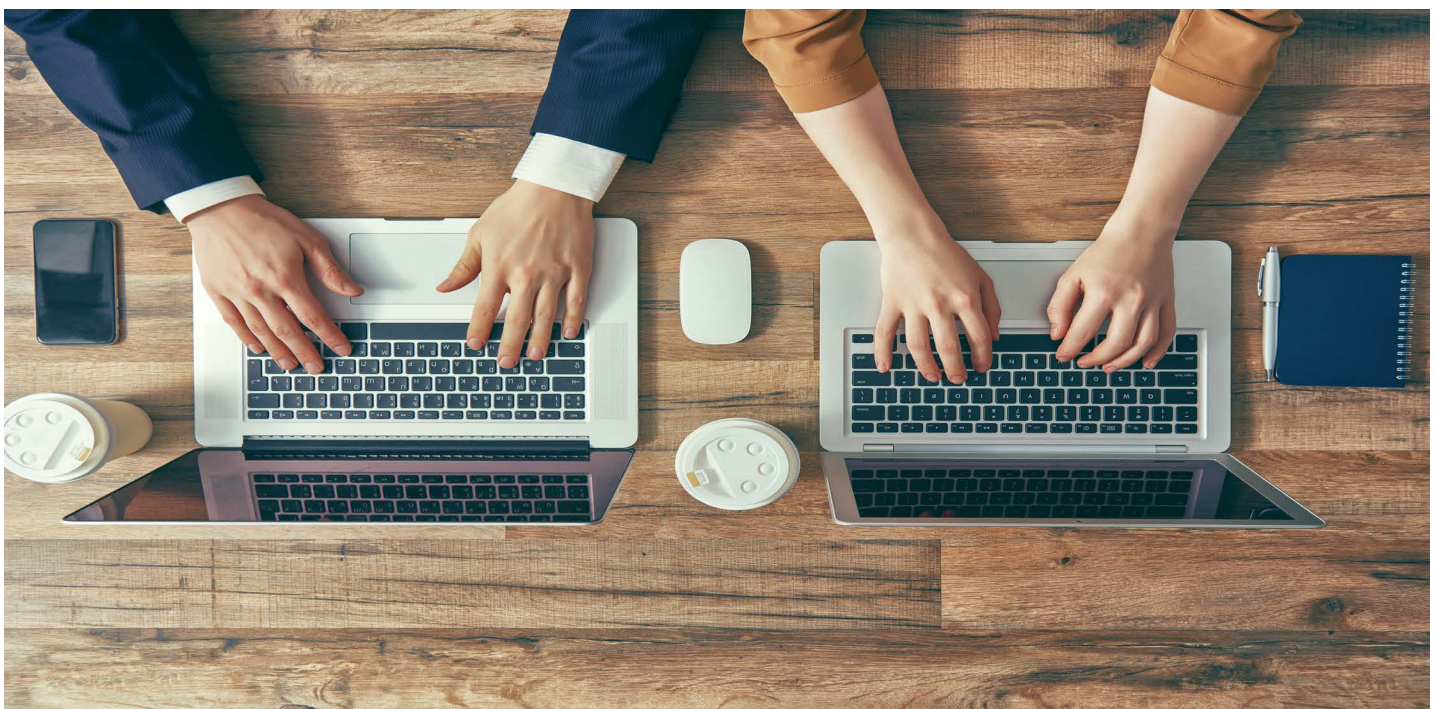
A majority of Michigan Metropolitan Statistical Areas (MSAs) had reductions in non-seasonally adjusted job ads in May. The Flint and Monroe MSAs posted the largest percentage declines of 9.3 and 9.7 percent respectively (-314 and -136 ads), with Detroit-Warren-Dearborn recording the largest numeric drop of 1,766 ads. The Niles-Benton Harbor MSA led the way with a 9.1 percent (+194) ad gain in May.

Among non-seasonally adjusted ads for major occupational categories, the number of total available ads was down 3,550 for the month or 2.5 percent. Ads for jobs in *Transportation*

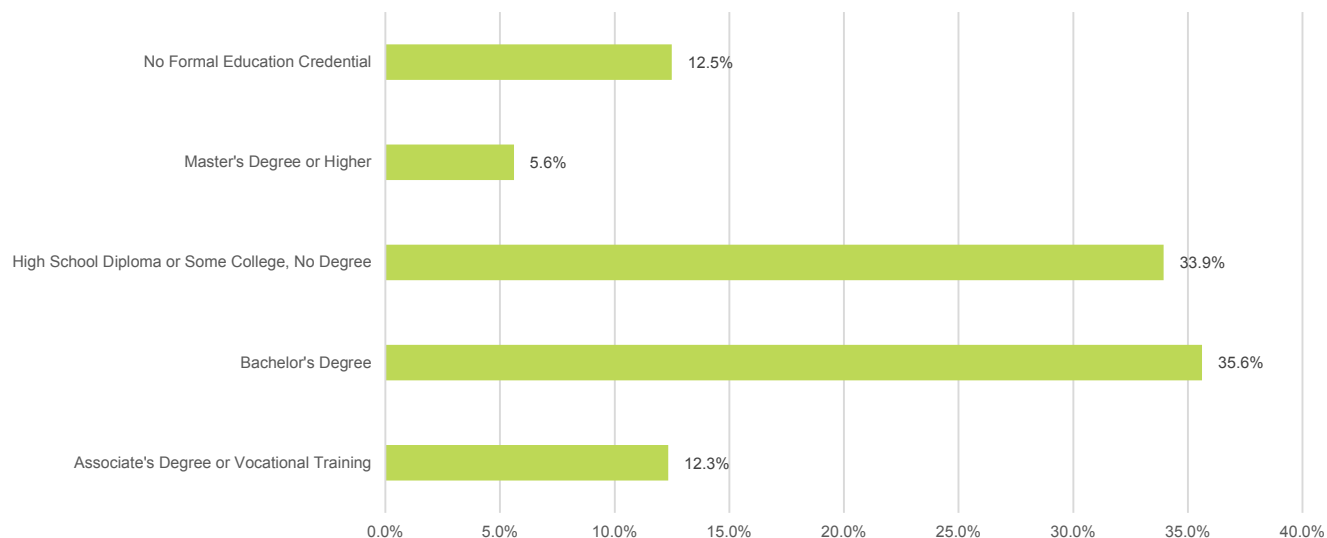
posted a significant numeric and percentage drop in May (-1,700 ads or -13.8 percent). Ads for *Professional* jobs recorded the second largest numeric decrease (-1,400 ads). The major occupational groups with ad gains were *Service* and *Construction and repair*, each up by 150 ads and *Farming, fishing, and forestry* (+100).

The number of total new ads for May showed similar declining trends. Jobs in the *Professional* and *Transportation* categories posted the greatest numeric drop in ads (-1,400 and -1,550). Only new ads for *Farming, fishery, and forestry* edged up slightly.

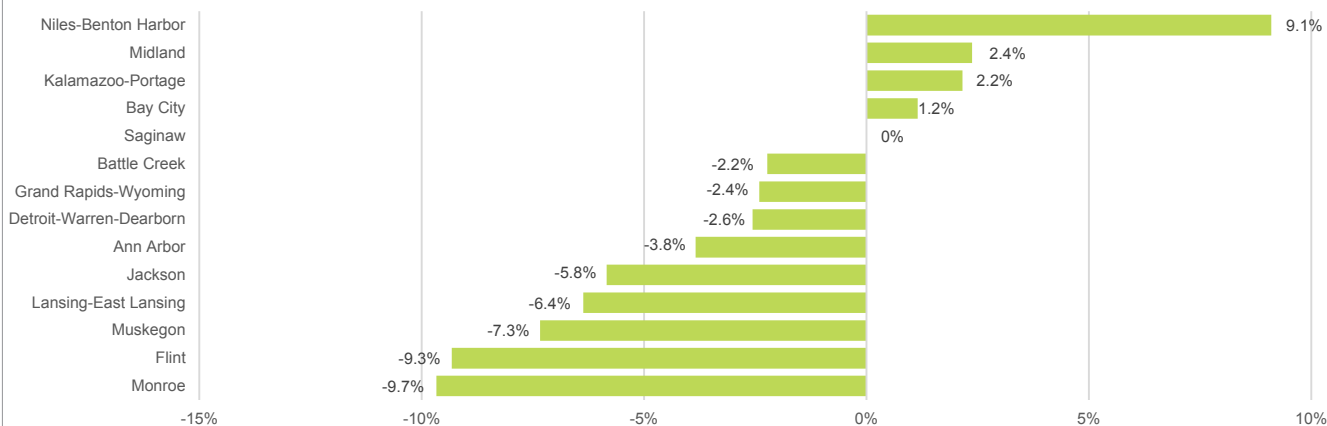
MARCUS REASON
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MICHIGAN JOB ADS BY EDUCATION REQUIREMENT, MAY 2018



CHANGE IN JOB ADS IN MAY (NOT SEASONALLY ADJUSTED)



TOTAL AVAILABLE ADS (NOT SEASONALLY ADJUSTED)

OCCUPATION CATEGORIES	MAY 2018	APRIL 2018	MAY 2017	OVER THE MONTH	
				LEVEL	PERCENT
TOTAL	140,050	143,600	152,950	-3,550	-2.5%
Professional	42,500	43,900	45,000	-1,400	-3.2%
Healthcare	19,350	19,450	25,050	-100	-0.5%
Sales	13,850	14,100	15,250	-250	-1.8%
Administrative Support	13,550	13,600	14,000	-50	-0.4%
Management	10,000	10,350	10,650	-350	-3.4%
Service	12,650	12,500	14,850	150	1.2%
Construction and Repair	9,900	9,750	11,600	150	1.5%
Production	7,150	7,250	7,200	-100	-1.4%
Transportation	10,600	12,300	8,950	-1,700	-13.8%
Farming, Fishing, and Forestry	500	400	400	100	25.0%

RELEVANT RANKINGS

PERCENT SHARE OF IT EMPLOYMENT BY STATE			
STATE	IT EMPLOYMENT	TOTAL EMPLOYMENT	IT EMPLOYMENT AS A SHARE OF TOTAL
1. Washington	166,900	3,186,610	5.2%
2. Virginia	198,250	3,789,910	5.2%
3. Maryland	130,560	2,664,330	4.9%
4. Colorado	118,350	2,555,300	4.6%
5. Massachusetts	152,840	3,528,070	4.3%
23. Ohio	157,020	5,370,640	2.9%
24. Pennsylvania	164,730	5,781,610	2.8%
25. Wisconsin	80,460	2,825,170	2.8%
26. Michigan	119,420	4,276,040	2.8%
27. Kansas	37,990	1,369,110	2.8%
46. Hawaii	10,480	632,990	1.7%
47. Nevada	19,120	1,310,220	1.5%
48. Mississippi	12,810	1,119,470	1.1%
49. Louisiana	21,640	1,902,060	1.1%
50. Wyoming	2,800	267,980	1.0%

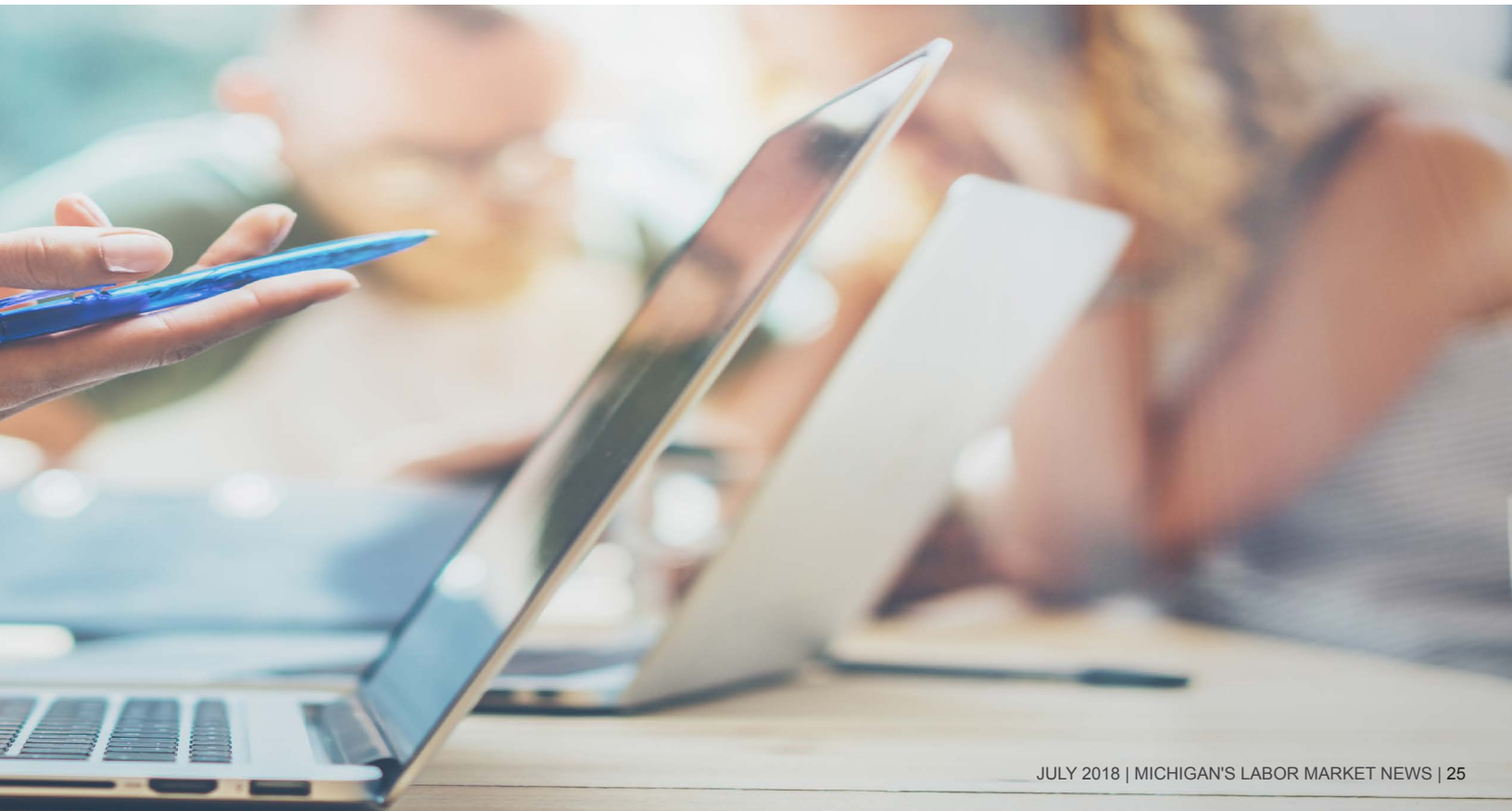
Source: Bureau of Labor Statistics (BLS)



PERCENT SHARE OF IT EMPLOYMENT BY METROPOLITAN STATISTICAL AREA (MSA)

MSA	IT EMPLOYMENT	TOTAL EMPLOYMENT	IT EMPLOYMENT AS A SHARE OF TOTAL
Detroit-Warren-Dearborn MSA	74,290	1,966,680	3.8%
Ann Arbor MSA	7,930	213,990	3.7%
Lansing-East Lansing MSA	7,880	215,080	3.7%
Michigan	119,420	4,276,040	2.8%
Midland MSA	910	34,730	2.6%
Bay City MSA	750	34,100	2.2%
Jackson MSA	1,270	59,280	2.1%
Grand Rapids-Wyoming MSA	10,600	551,620	1.9%
Flint MSA	2,650	138,240	1.9%
Battle Creek MSA	1,010	55,980	1.8%
Kalamazoo-Portage MSA	2,440	139,130	1.8%
Niles-Benton Harbor	790	62,750	1.3%
Saginaw MSA	940	85,160	1.1%
Monroe MSA	340	38,290	0.9%
Muskegon MSA	410	61,690	0.7%

Source: DTMB, Bureau of Labor Market Information & Strategic Initiatives



DATA SPOTLIGHT: A LOOK AT REQUIREMENTS FOR IT-RELATED JOBS

As new and existing jobseekers look for opportunities in today’s job market, some candidates may be discouraged by the specifications found in job advertisements, and therefore may choose not to apply for vacancies. At the same time, some employers may believe there is a lack of talent in the labor market, either because of a lack of qualified applicants or because qualified applicants do not respond to their job ads.

While jobseekers and businesses have both benefited from technology in the job search, there are also costs associated with highly automated screening tools that may fail to match qualified applicants to vacancies. To begin to understand the costs, this article uses information from three sources, including The Conference Board’s Help Wanted Online (HWOL), O*Net Online, and Michigan’s IT Talent Survey, to explore what each source lists as the requirements for 15 IT-related jobs¹.

Content Analysis of IT-Related Job Postings from Help Wanted Online (HWOL)

First, the text from 450 online advertised, IT-related job postings were analyzed to learn about the education, skills, and certifications required for these job openings. From this analysis, we learned:

- While some ads (13 percent) were dropped because they were not actually IT-related jobs, there was solid information for 391 IT-related job ads. The original sample of 450 job postings was selected based on the Standard Occupational Classification (SOC) assigned to each ad. However, after analyzing the text of each posting, 59 were dropped because of incorrect coding. This alone raises one concern with automated coding processes used by many job matching tools.
- The text for nearly half (49.6 percent) of IT-related job postings stated that a candidate needed a bachelor’s degree. However, a deeper reading of the text of some of these ads suggested that related work experience or industry certification may satisfy the job requirements.
- What about the other 51 percent? First, forty-one percent of IT-related job ads did

not specify any level of education required. Three percent of the sample stated they would accept a high school diploma (or less), but with a minimum of 1-4 years of work experience. Similarly, three percent of the job ads required an associate’s degree, but with 1-4 or 5 or more years of experience. Finally, just under three percent of IT-related job postings required a master’s degree or more.

- Of the sample, just seven percent of job ads indicated that a certification would be accepted. Most of those ads also required an associate’s degree or less, making the certification a quantifiable part of the experience needed.
- Common skill requirements found in the text of IT-related job ads included web platform development, programming (in various languages), object-oriented software, technology design, and troubleshooting and computer assistance.

Analysis of O*Net Online Occupational Profiles

The O*Net Online profiles for the 15 IT-related occupations were also examined to learn about job requirements. O*Net profiles gather information about skills and knowledge needed for detailed occupations through surveys of workers and occupational experts. We learned:

- Fifty-five percent of occupational experts think that a bachelor’s degree is a prerequisite before working in an IT-related job. An additional 12 percent of surveyed respondents believe it is necessary to have a master’s degree.
- Conversely, seven percent of surveyed respondents say that a post-secondary certificate or award is required for IT-related job titles. Nine percent of respondents indicated an associate’s degree is sufficient for the education requirement.

IT-RELATED EMPLOYMENT AND MEDIAN WAGES BY OCCUPATION		
OCCUPATION	NUMBER OF EMPLOYED	MEDIAN WAGE (2017)
Computer and Information Systems Managers	9,350	\$58.51
Computer and Information Research Scientists	200	\$47.75
Computer Systems Analysts	17,260	\$39.75
Information Security Analysts	1,550	\$44.32
Computer Programmers	3,630	\$34.11
Software Developers, Applications	25,940	\$42.25
Software Developers, Systems Software	11,090	\$42.22
Web Developers	2,720	\$29.13
Database Administrators	2,760	\$40.59
Network and Computer Systems Administrators	8,250	\$35.91
Computer Network Architects	3,270	\$49.34
Computer User Support Specialists	18,190	\$22.75
Computer Network Support Specialists	3,840	\$26.58
Computer Occupations, All Other	9,780	\$34.99
Computer Hardware Engineers	1,590	\$42.24

¹We defined “IT-related occupations” using fifteen (15) Standard Occupational Classification (SOC) job titles.

- Those occupations that have a high percentage of respondents expressing the need for a bachelor's degree include *Software developers, applications* (79 percent), *Computer programmers* (77 percent), and *Software developers, systems software* (76 percent).
- The top "Tools and Technology" found in the O*Net Online profiles for IT-related occupations include web platform development, development environment software, object or component-oriented development software, database management system software, and operating system software.

Results from Michigan's IT Talent Survey

Described in this issue's feature article, the IT Talent Survey was conducted earlier in 2018. This survey was done to explore the requirements for IT-related job vacancies, specifically, whether employers would consider hiring a candidate without an IT-related bachelor's degree, but with an IT-related award. The results from the survey show:

- Just over half (56 percent) of respondent employers said they probably would or definitely would hire someone without a

bachelor's degree, but with an IT-related award or certificate. Only 35 percent of the employers who answered the survey expressed they would require a candidate to have at least a bachelor's degree.

- According to the Michigan IT Talent Survey, the top five skills that employers require from IT-related certificates include programming in various languages, cyber security, systems developmental life cycle (SDLC), cloud security, and security testing.

Analysis

Presented in the table, there are some similarities and some differences among these data sources regarding the requirements for IT-related jobs.

The first difference is seen in whether a bachelor's degree is required for IT-related occupations. While about half of IT-related job openings and 55 percent of IT-related occupational profiles require a bachelor's degree, just 35 percent of respondents in a small, network sample of employers say a bachelor's degree is required for their IT-related vacancies.

On the other hand, over half (56 percent) of respondents to the IT Talent Survey said they

would probably or definitely hire someone without a bachelor's degree but with an IT-related award or certificate, well above the requirements found in both online advertised job openings (4 percent) and O*Net profiles (7 percent).

Importantly, job applicants who have a two-year certification may still be eligible for a job posting that indicates it requires a bachelor's degree, because employers often will hire graduates of these post-secondary programs. Most importantly, these distinctions should be included by employers in their job advertisements, so that qualified workers with a variety of educational credentials will apply for their job openings.

One area where the three sources showed some similarities was in the skills required for IT-related jobs. Job advertisements and O*Net profiles were more likely to highlight web platform development, and respondents to the IT Talent Survey more often mentioned programming languages and cyber security. All sources illustrated the impressive list of skills required for IT-related jobs.

DALIA SALLOUM
Economic Analyst

REQUIREMENTS FOR IT-RELATED OCCUPATIONS FROM THREE DIFFERENT SOURCES

SOURCES	EDUCATION REQUIREMENT	SKILLS/TOOLS/TECHNOLOGIES	CERTIFICATION OR AWARD
HWOL (based on 391 online advertised jobs)	<ul style="list-style-type: none"> 49.6% of job ads required a bachelor's degree 3% required a master's degree or more 3% required an associate's degree 	<ul style="list-style-type: none"> Web platform development software Programming/coding languages Object oriented software Technology design Troubleshooting/Computer support 	4% indicated a postsecondary certification or award
O*Net Online (based on 15 occupational profiles)	<ul style="list-style-type: none"> 55% indicated a bachelor's degree is required 12% required a master's degree 	<ul style="list-style-type: none"> Web platform development software Development environment software Object or component-oriented development software Database management system software Operating system software 	7% indicated a postsecondary certification or award is acceptable
IT Talent Survey (based on 66 employer responses)	<ul style="list-style-type: none"> 35% of respondents require a bachelor's degree 	<ul style="list-style-type: none"> Programming languages Cyber security Systems development life cycle (SDLC) Cloud security Security testing 	56% of employers would consider hiring a candidate with an IT-related award or certificate (without an IT-related bachelor's degree)



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