

Employment in New York State



Department of Labor
Research and Statistics

At a Glance

New York State had 9,682,000 total nonfarm jobs in November 2018, including 8,231,100 private sector jobs, after seasonal adjustment. The state's seasonally adjusted private sector job count increased by 0.1% in October-November 2018, while the nation's job count also increased by 0.1% over this period. From November 2017 to November 2018, the number of private sector jobs increased by 1.4% in the state and by 1.9% in the nation (not seasonally adjusted).

In November 2018, New York State's seasonally adjusted unemployment rate decreased from 4.0% to 3.9%. The comparable rate for the nation in November 2018 was 3.7%.

New York State's seasonally adjusted labor force participation rate increased from 60.9% in October 2018 to 61.0% in November 2018.

Change in Nonfarm Jobs

November 2017 - November 2018

(Data not seasonally adjusted, net change in thousands)

	Net	%
Total Nonfarm Jobs	116.9	1.2%
Private Sector	114.6	1.4%
Goods-producing	12.6	1.5%
Nat. res. & mining	0.0	0.0%
Construction	13.0	3.3%
Manufacturing	-0.4	-0.1%
Durable gds.	-7.7	-3.0%
Nondurable gds.	7.3	3.9%
Service-providing	104.3	1.2%
Trade, trans. & util.	10.0	0.6%
Wholesale trade	-0.7	-0.2%
Retail trade	3.8	0.4%
Trans., wrhs. & util.	6.9	2.3%
Information	-2.1	-0.8%
Financial activities	2.7	0.4%
Prof. & bus. svcs.	8.1	0.6%
Educ. & health svcs.	51.1	2.5%
Leisure & hospitality	19.4	2.1%
Other services	12.8	3.1%
Government	2.3	0.2%

Tech-focused positions dominate list of emerging job titles... (Part 1)

A Look at Some of the Hottest New Jobs Today

"The only thing that is constant is change."
Greek philosopher Heraclitus

Although he was writing 2,500 years ago, Heraclitus's insightful comment seems especially applicable to today's ever-changing labor market. In recent years, technological change has clearly helped to plant the seeds for new job titles and led to the elimination of old ones – think file clerk or elevator operator. In fact, a recent report from the Urban Institute noted, "The evidence is clear that technological change has...increased both the demand and pay for high-skilled technical and analytic work."

Here, in the first of a two-part series, we look at five new occupations that have emerged in recent years and are expected to experience strong growth. All wage data cited here are for the U.S. and come from Payscale.com.

Machine Learning Engineer

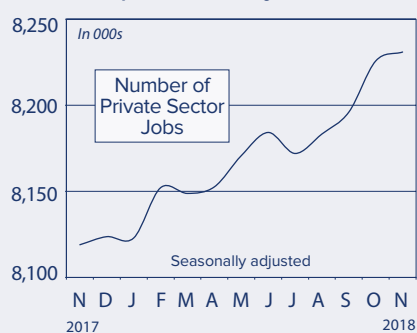
Machine learning engineers are computer programmers who create software with artificial intelligence (AI) abilities that go beyond automating specific tasks. AI is a collection of technologies that allow machines to sense, understand, act and learn. Machine learning makes computing processes more efficient, cost-effective and reliable. It is the latest approach to digitalization.

Most of us have encountered machine learning technology, even if we didn't know it at the time. Think of Fitbit smartwatches, which can count your steps or estimate your calorie burn, and the customized online recommendations you receive based on your purchase or browsing history. Machine learning also drives voice recognition systems – like

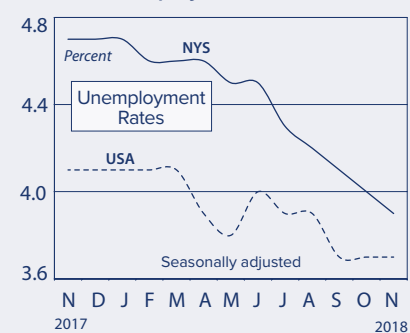
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In November...

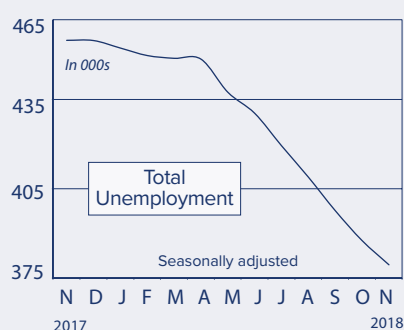
...NYS private sector jobs increased



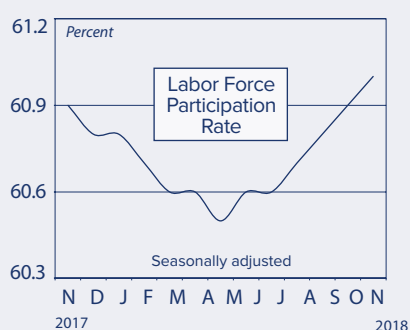
...NYS unemployment rate decreased



...NYS unemployment decreased



...NYS LF participation rate increased



Focus on the Finger Lakes

Region Continues Expanding

by Tammy Marino, Labor Market Analyst, Finger Lakes

Since the end of the national recession in mid-2009, the Finger Lakes region has enjoyed nine years of uninterrupted economic expansion. From the second quarter of 2009 (2q2009) to the second quarter of 2018 (2q2018), the region's private sector job count increased by 28,900, or 6.5%, to 471,900, per the Quarterly Census of Employment and Wages (QCEW). In addition, the QCEW indicates total wages paid by private sector employers in the region increased by more than 30% over the same period.

Steady hiring by local employers has led to a sharp decline in the region's unemployment rate. Over the past year, the unemployment rate in the Finger Lakes fell by 1.5 percentage points to 3.4% in November 2018, matching its lowest November level on record. Moreover, the number of unemployed residents in the region fell by nearly 30%.

Diverse Set of Growing Industries

Private sector job growth was relatively broad-based in 2009-18. However, four key industry sectors – health care and social assistance, accommodation and food services, educational services and construction – accounted for nearly 90% of employment growth over this period.

Health care and social assistance (+11,300) was, by far, the largest source of net job growth in the region. From 2q2009 to 2q2018, this sector accounted for almost 40% of private sector job gains. Within this sector, gains were greatest in hospitals (+5,900), nursing and residential care facilities (+2,400) and ambulatory health care (+1,900).

Health care organizations rank among the largest employers in the Finger Lakes. According to the *Rochester Business Journal*, the University of Rochester, including the school's medical center (URMC), employs more than 29,000 and currently ranks as the region's largest employer. In addition, Rochester Regional Health, with nearly 16,000 employees, ranks as the region's #2 employer. Altogether, the region's health care and social assistance firms employed more than 88,000 workers and paid out more than \$3.8 billion in wages over the past year, per the QCEW.

The job count in the region's accommodation and food services sector grew by 6,200 in 2009-18. It has benefited from a strong economy and growing consumer confidence. Nearly 90% of sector growth is due to an expanding restaurant and bar industry. The much smaller accommodation sector added 700 jobs over this period.

Growing tourism activity in the region also contributed to growth in this sector. According to the latest figures available from the "I Love New York" program, more than 14.6 million visitors spent \$1.66 billion in the Finger Lakes in 2017, up 3.3% from 2016's level.

Employment in the region's educational services sector was up 4,600 in 2009-18. With 11 private colleges and universities in the region, including the University of Rochester and Rochester Institute of Technology, post-secondary education has emerged as an economic engine. Recent job growth in the region's sector has been driven more by demographic trends than by economic conditions. However, growing



"The Finger Lakes region is now enjoying its ninth year of economic expansion."

enrollment at area colleges and a surge in research funding should continue to help boost employment in the future. In fact, projections prepared by the State Department of Labor estimate that industry employment in the region should grow by 7.6% from 2014 to 2024.

The strengthening economy also provided a boost to the region's construction sector. In 2009-18, this sector saw its job count increase by 3,600 to more than 22,200, a new record. Looking ahead, the impending retirement of many baby boomers over the next decade will create additional job opportunities. This is especially true for workers in the skilled trades, such as plumbers, electricians, roofers and carpenters. From 2014-2024, the employment count in this sector is projected to grow at an above-average rate of 21.1%.

Summary

The Finger Lakes region is now enjoying its ninth year of economic expansion. A diverse set of industry sectors contributed to the employment gains it has enjoyed. These job gains, in turn, have helped to bring the region's unemployment rate to its lowest level in almost 20 years.

Emerging Job Titles... from page 1

Siri and Alexa – that copy human interaction. Another AI advance is the Uber app that uses algorithms to determine arrival times, pickup locations and Uber Eats' meal deliveries.

Machine learning engineers need a bachelor's or master's degree, as well as proficiency in math, data science and software engineering. They earn an average salary of \$112,000 per year. Those with experience in big data analytics and/or machine learning can command higher salaries.

Data Scientist

Data scientists analyze and interpret complex data from many sources to better understand business performance and to build AI tools

to automate processes. They organize data to tell a story and to offer planning insights for others to act upon. The emphasis is on summarizing the results – often in the form of charts, models or other illustrations – to help in the decision-making process. The key here is the output's intended audience: humans.

Data science differs from machine learning engineering in a couple of important ways. For example, the final output from learning engineers is working software, rather than analyses and/or data graphics. Also, the "audience" for the engineering output often consists of other software elements that run independently with minimal human supervision.

Entrants into the data science field usually need a bachelor's degree in computer science or engineering. Strong math skills and experience with software and business intelligence tools are also important. Average annual pay for data scientists is \$91,000.

Full Stack Developer

A full stack developer is a programmer who has specific knowledge of software development at every level, or "stack." They need to be proficient in application development, including user interface, service, quality assurance, networks, hosting environments, databases, and multiple back-and front-end coding languages.

Unemployment Rates in New York State

Data Not Seasonally Adjusted

	NOV '17	NOV '18		NOV '17	NOV '18		NOV '17	NOV '18
New York State	4.4	3.5	Hudson Valley	4.5	3.1	Finger Lakes	4.9	3.4
Capital	4.3	3.1	Dutchess	4.2	2.9	Genesee	5.0	3.5
Albany	4.1	3.0	Orange	4.5	3.2	Livingston	4.8	3.3
Columbia	3.5	2.6	Putnam	4.2	3.0	Monroe	5.0	3.5
Greene	5.4	3.7	Rockland	4.4	3.1	Ontario	4.4	3.1
Rensselaer	4.3	3.1	Sullivan	5.1	3.3	Orleans	5.7	3.7
Saratoga	3.9	2.9	Ulster	4.5	3.1	Seneca	4.4	2.9
Schenectady	4.5	3.3	Westchester	4.5	3.2	Wayne	4.8	3.2
Warren	5.7	4.1	Mohawk Valley	5.2	3.7	Wyoming	5.6	3.4
Washington	4.5	3.3	Fulton	5.8	4.3	Yates	4.4	3.0
Central New York	5.0	3.5	Herkimer	5.6	4.0	Western New York	5.3	3.7
Cayuga	4.9	3.5	Montgomery	5.4	4.0	Allegany	6.4	4.2
Cortland	5.8	3.9	Oneida	5.1	3.6	Cattaraugus	6.0	4.2
Madison	5.2	3.6	Otsego	4.9	3.4	Chautauqua	5.9	4.2
Onondaga	4.6	3.3	Schoharie	4.7	3.4	Erie	5.0	3.5
Oswego	6.3	4.4	North Country	6.0	4.2	Niagara	5.9	4.1
Southern Tier	5.2	3.5	Clinton	4.8	3.4	Long Island	4.3	3.0
Broome	5.4	3.8	Essex	5.8	4.2	Nassau	4.1	2.9
Chemung	5.4	3.6	Franklin	5.9	3.9	Suffolk	4.5	3.1
Chenango	5.4	3.5	Hamilton	9.8	6.8	New York City	4.1	3.7
Delaware	5.2	3.7	Jefferson	6.7	4.7	Bronx	5.7	5.1
Schuyler	6.1	4.1	Lewis	5.9	4.1	Kings	4.1	3.8
Steuben	5.7	3.7	St. Lawrence	6.2	4.3	New York	3.6	3.3
Tioga	4.7	3.3				Queens	3.5	3.2
Tompkins	4.3	2.9				Richmond	4.0	3.6

Emerging Job Titles... from page 2

Project management skills are also important. Note that these developers are not necessarily experts at each level, but they have practical knowledge and aptitude to take a concept and turn it into a finished product.

Computer science and computer engineering are the most common degrees held by full stack developers. Successful full stack developers also share certain common traits. They include attention to detail, creative vision, an analytical mind, patience and discipline. The average pay for a full stack developer is \$65,000 per year.

Unity Developer

A unity developer designs games using Unity – a game engine developed by Unity Technologies. A game engine is software that quickly and efficiently provides game creators with the necessary set of features to build games, such as interactive virtual reality and augmented reality experiences. The game engine also produces simulations for desktops, laptops, home consoles, smart TVs and mobile devices.

Unity developers plan and implement how a computer game will work. The game creator designs, builds and maintains the necessary programming code. The developer transforms design specifications into functional applications and games. This, in turn, ensures the best performance, quality and responsiveness

of apps and games. Unity developers also identify defects and bugs in the software, and they work to implement solutions in a timely manner.

Unity developers typically have a bachelor's or master's degree in computer science, engineering or a related field. Plus, they may have experience working in game design and development. Aspiring unity developers need familiarity with different gaming platforms. The average annual salary for a unity developer is \$78,000, but can range from \$35,000 to \$118,000, depending on experience.

Artificial Intelligence Lawyer

As AI-driven technology becomes more commonplace, people will become more aware of its various impacts. The quickly developing area of AI will demand a brand-new field of law and rules to regulate the growing number of businesses involved. Companies that create and sell AI software could be held responsible for potential damages caused by improper practices (e.g., a self-driving car causes injury or death). Therefore, the AI lawyer job title refers to someone who deals with the legal implications of such consequences.

To become an AI lawyer, a potential candidate should understand both the underlying technology and the law. Becoming a lawyer typically requires four years of undergraduate

school followed by three years of law school. The average pay for an AI lawyer is \$82,000/year, but ranges from \$49,000 to \$157,000, depending on the field and experience.

Summing Up

It comes as no surprise to learn that technology is playing an ever-increasing role in our daily lives. As a result, occupations with a technology focus are among those most in demand today. The prevalence of machine learning and the rapid rise of data science attest to the rapidly changing technological landscape. This offers a clue to what occupations will be in demand in the future. Stay tuned...

by Elena Grovenger and David Quickenton

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OFFICIAL BUSINESS

Regional Analysts' Corner

CAPITAL

Kevin Alexander — 518-242-8245

Over the past year, the private sector job count in the Capital Region rose by 1,900, or 0.4 percent, to 448,300 in November 2018. Employment gains were largest in educational and health services (+2,400), natural resources, mining and construction (+700), financial activities (+200), manufacturing (+200) and other services (+200). Losses were greatest in leisure and hospitality (-1,000) and trade, transportation and utilities (-400).

CENTRAL NY

Karen Knapik-Scalzo — 315-479-3391

Private sector jobs in the Syracuse metro area rose over the year by 100 to 265,700 in November 2018. Growth was centered in trade, transportation and utilities (+900), educational and health services (+400), manufacturing (+300), natural resources, mining and construction (+200) and other services (+200). The largest loss occurred in leisure and hospitality (-1,500).

FINGER LAKES

Tammy Marino — 585-258-8870

For the year ending November 2018, the private sector job count in the Rochester metro area rose by 3,500, or 0.8 percent, to 465,400. Gains were largest in natural resources, mining and construction (+2,200), educational and health services (+900), financial activities (+500), manufacturing (+200) and other services (+200). Declines were centered in leisure and hospitality (-200).

HUDSON VALLEY

John Nelson — 914-997-8798

Over the past year, private sector jobs in the Hudson Valley increased by 9,000, or 1.1 percent, to 819,600 in November 2018. Gains were largest in educational and health services (+6,100), professional and business services (+2,400), leisure and hospitality (+1,600) and other services (+1,300). Losses were greatest in trade, transportation and utilities (-1,800) and manufacturing (-900).

LONG ISLAND

Shital Patel — 516-934-8533

The number of private sector jobs on Long Island increased over the year by 12,600, or 1.1 percent, to 1,173,200 in November 2018. The largest gains were in educational and health services (+7,200), natural resources, mining and construction (+6,800) and leisure and hospitality (+3,400). Losses were greatest in trade, transportation and utilities (-2,700) and financial activities (-2,100).

MOHAWK VALLEY

Brian Acton — 315-793-2282

For the year ending November 2018, the private sector job count in the Mohawk Valley increased by 700, or 0.5 percent, to 149,000. Employment gains were concentrated in leisure and hospitality (+400), educational and health services (+300) and manufacturing (+200). Several industry groups experienced small job losses (-100) over the past year.

NEW YORK CITY

Elena Volovelsky — 718-613-3971

Private sector jobs in New York City rose over the year by 72,500, or 1.8 percent, to 4,025,500 in November 2018. Gains were greatest in educational and health services (+38,500), professional and business services (+12,000), leisure and hospitality (+11,000), natural resources, mining and construction (+5,700) and other services (+4,700). Losses were centered in information (-2,000).

NORTH COUNTRY

Anthony Hayden — 518-523-7157

For the 12-month period ending November 2018, the private sector job count in the North Country rose by 500, or 0.5 percent, to 111,600. Employment gains were largest in leisure and hospitality (+400), educational and health services (+200) and natural resources, mining and construction (+200). Losses were greatest in trade, transportation and utilities (-300).

SOUTHERN TIER

Christian Harris — 607-741-4480

Private sector jobs in the Southern Tier rose over the year by 2,100, or 0.9 percent, to 230,800 in November 2018. Job gains were largest in leisure and hospitality (+900), educational and health services (+700) and trade, transportation and utilities (+300). Several industry groups experienced small job losses (-100) over the past year.

WESTERN NY

Timothy Glass — 716-851-2742

Over the past year, private sector jobs in the Buffalo-Niagara Falls metro area grew by 3,000, or 0.6 percent, to 486,300 in November 2018. Gains were largest in educational and health services (+3,500), trade, transportation and utilities (+1,700), natural resources, mining and construction (+1,400) and financial activities (+600). Losses were greatest in professional and business services (-2,200) and leisure and hospitality (-2,100).

