

TECHNOLOGY2030

This report is part of the Missouri Chamber Foundation's overarching Missouri 2030 strategic plan, an employer-driven initiative to reposition our state as a global economic leader. Research for this report was provided by Economic Leadership, LLC.

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Executive Summary

The technology sector, a cornerstone of the nation's economic growth and global competitiveness in recent decades, stands at a pivotal juncture in 2025. Amidst slowing venture capital flows, heightened regulatory scrutiny, and intensifying geopolitical tensions, the industry faces a complex environment. Nevertheless, areas of tech such as artificial intelligence, agricultural technology, and quantum computing continue to drive innovation and offer growth opportunities. Labor markets remain tight, as demand for skilled talent in these emerging sectors outpaces supply.

Economic development leaders understand that a thriving tech ecosystem helps support every part of a region's economy. The Missouri Chamber Foundation contracted with Economic Leadership, a consulting firm with a long history of evaluating state technology performance, to build an annual report that demonstrates the current state of the tech sector in Missouri. This is the fourth Technology2030 report produced for the Missouri Chamber Foundation. This report shows statistics for tech as of 2023, the most recent year with final data. The report serves as a resource of data and trends for the economic development community, policymakers, and the tech industry.

The tech sector has a strong and growing presence in the state and this report highlights its vitality and importance to the greater Missouri economy. One job created in the tech industry supports another 1.92 jobs throughout the state economy. This level of job impact was higher than nearly all other industries in the state.

HIGHLIGHTS:

- The tech industry accounts for over 5 percent of Missouri's employment and 10 percent of the state's gross domestic product (GDP).
- Over the last five years, the tech industry added 14,230 net new jobs, the 4th highest number of jobs added by any industry in the state.
- Over the last five years, Missouri was the 7th fastest growing state in tech manufacturing jobs and is expected to be a top 10 state through the next five years.

- Missouri is among the lowest five states in business costs, business taxes and housing burdens for workers.
- The life sciences and environmental technology subsectors experienced double-digit growth in the last five years, at 18 and 13 percent respectively.
- Missouri ranks 12th in women working in the tech industry and 9th among all states in the diversity of the tech workforce.

Missouri Technology Industry Summary Statistics, 2023

Indicator	Technology Industry	State Total	State Total Percentage
Employees	161,345	3,057,207	5.3%
Establishments	18,436	246,650	7.5%
Earnings (millions)	\$19,304	\$213,097	9.1%
Sales (millions)	\$61,815	\$705,879	8.8%

Source: EL estimates based on Lightcast 2024.4

In this report, the total tech sector and each subsector were compared with other states. The economic performance of the Missouri tech sector ranked strongest in measures of workforce diversity, cost-of-living adjusted earnings, and increase in tech manufacturing growth rates. Missouri ranked in the top 15 states for 10 out of the 34 tech labor market metrics evaluated for this study. Despite positive growth in most facets of the tech industry, Missouri ranked in the middle of pack on several indicators. This was often the result of outperformance by states in the Southeast and Intermountain West that experienced extreme growth during the pandemic and its aftermath.

Indicates state ranking of 1st – 15th Indicates state ranking of 16th – 35th

Indicates state ranking of 36th - 50th

Missouri State Rankings for Tech Industries and Occupations



Note: These rankings are out of the 50 states and do not include the District of Columbia.

The continuing growth of tech manufacturing jobs is a highlight for the state's technology sector. This growth is being driven by over 2,320 jobs added in the last five years in the other electronic component manufacturing subsector. Job growth has also been strong in battery and life science materials manufacturing. Production occupations like semiconductor processing technicians and calibration technologists are also in high demand as a result of this industry growth.



Tech Manufacturing Employment Trends

Source: EL calculations based on Lightcast 2024.4

The report also measures Missouri's performance on indicators that show support for a thriving technology sector, like investment levels, entrepreneurship, broadband, and innovative research. Missouri ranked in the top 15 states for 6 out of the 27 tech infrastructure metrics evaluated for this study. The state performs well in STEM education, cost of living metrics, and business taxes. Missouri ranked in the bottom third of states for broadband access, adoption, and affordability. Addressing these barriers through improvements in public policy and related investments can enhance Missouri's future performance.

^{100 = 2011} employment levels

Missouri State Rankings for Tech Infrastructure Indicators



Note: These rankings are out of the 50 states and do not include the District of Columbia.

Methodology

In this report, the economic performance of Missouri's technology industry is reviewed and compared with that of other states. A tech industry is a firm that operates in the tech space but might have employees that perform work that is not tech related (i.e. an accountant at Oracle). Later in the report, tech occupations are measured. Tech occupations are workers whose roles are tech-related and can be employed at tech-focused or non tech-focused companies (i.e. a data analyst for Edward Jones). The term "tech sector" is used to refer to both the tech industries and tech occupations.

Missouri is also ranked on factors that influence the technology sector such as research and development funding and talent availability. These metrics are defined as the "tech infrastructure." Reviewing these indicators can provide policymakers with an understanding of the industry's current reality, as well as takeaways that may illustrate the best courses of action to further support growth in the industry.

Economic Leadership identified 86 separate six-digit NAICS code industries to characterize the "Total Technology Industry" for Missouri and for comparison with other U.S. states. A full list of each six-digit industry is available in the appendix of this report. These categories are based on several definitions of the technology industry. The primary source for defining the technology industry was the TechAmerica Foundation's Technology Industry Classification. Other state and city tech industry reports were evaluated, and this report maintains a definition that is comparable to those reports.

To measure tech occupations that exist in all industries, Economic Leadership reviewed 85 separate five-digit SOC codes to determine how many tech workers exist in all industries across Missouri. The Total Technology Industry (hereby referred to as the 'tech industry') was further broken down into four sub-categories:

- Energy Technology
- Environmental Technology
- Life Sciences
- IT, Telecom, Hardware and Software (Tech Core)

To calculate trends of the tech sector in terms of employment, wages, and establishments, Economic Leadership utilized data developed by Lightcast, which is largely based on the Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages dataset. Lightcast data fills in gaps from the BLS non-disclosure policy by amalgamating several economic data sources to allow for granular review of economic data.

The data presented in this report are calculations based on Lightcast data for the year 2023. This is the most recent full year of data available. The federal government revises data several times for each year of reporting and often the revisions are impactful. Final 2024 estimates will not be available until mid-2025. Most trend data presented is for the five-year period from 2018-2023. This approach allows for the most accurate assessment of the tech industry because it incorporates the final revised numbers from public sources. Some data – such as unemployment and job postings – offer more real-time analysis and are presented throughout the report. Data for tech infrastructure state comparisons comes directly from publicly available resources such as the National Science Foundation, Bureau of Economic Analysis, and the U.S. Census Bureau. This ensures consistent and comparable data across all the states.

Throughout the report, Missouri's position in state rankings is color coded according to this key:

Indicates state ranking of 1st - 15th
Indicates state ranking of 16th - 35th
Indicates state ranking of 36th - 50th

State Economic Trends

The technology industry has been one of the driving forces in Missouri's shifting economy. Over the last two decades, the economy of the state has evolved dramatically. Occupations that were once traditional leaders in Missouri, like trade-based jobs, now account for a lower percentage of the state's economy. Meanwhile, growth has increased the role of management and knowledge-based jobs in the economy.



Missouri's Economy by Occupation Group

Source: EL calculations based on Lightcast 2024.4

Overall, the economy in Missouri has performed well in the last decade and continued to grow. This growth has been at a slower pace than the national average. This slower growth is consistent with the state's population growth trend. In general, midwestern states have grown slower than southern or western states in recent years.







Source: EL calculations based on Lightcast 2024.4

Some of the slower population growth is the result of migration out of the state. Data from IRS tax records show that from 2012 to 2019 domestic migration of taxpayers was flat or a net negative for the state. Since 2020, the state saw net migration reverse to net positive. Other research supports the notion that Missouri was one of the states that people chose to relocate to during the COVID-19 pandemic and the proliferation of remote work. Missouri's low cost of living and lower tax rates likely helped to attract new migrants. Most of the movement tends to be from nearby states, although California was one of the top states people were moving from in 2022.



Missouri Net Domestic Taxpayer Migration

Source: Lightcast 2024.4

Note: Based on IRS data on individuals who file for federal taxes.

Top In-Bound and Out-Bound Migration States for Missouri, 2022

Top 5 In-Bound States		Top Five Out-Bound States	
Kansas	+17,354	Kansas	-15,646
Illinois	+12,772	Texas	-11,264
Texas	+9,563	Illinois	-11,115
California	+8,665	Florida	-9,446
Florida	+5,962	Arkansas	-5,272

Source: Lightcast 2024.4

Note: Based on IRS data on individuals who file for federal taxes.

This trend has helped the Missouri economy return to pre-pandemic levels of labor force and employment. In early 2023, the state returned to pre-COVID levels of employment and continued to rise steadily in the ensuing months. Hiring levels then generally dampened across the U.S. as the economy cooled following interest rate hikes from the Federal Reserve. Most recently, the Federal Reserve cut rates twice in the fall of 2024, and the size of Missouri's labor force and employment began to rise again.



Missouri Employment and Labor Force Trends

Despite some cooling in the economy, the state is still experiencing the common challenge of filling open job positions, as the job openings rate remains above the hiring rate. This pattern matches national and global labor shortages. Many employers interviewed mentioned that they have several jobs they could fill today if they had the right talent or willing talent.



Source: BLS (2024)

Missouri's labor market remains tight, with the unemployment rate in November 2024 at 3.7 percent. There are still more job openings than unemployed workers in the state. The tech industry has seen a divergent trend. LinkedIn data showed that job openings for a variety of tech roles in August 2024 were down nationally compared to their August 2018 levels. This research prompted a Business Insider article in November 2024 titled, "Tech jobs are mired in a recession." The article notes that tech may be one portion of the economy where the rosy overall economic numbers don't match workers' perceptions. Some of this is a stabilization after a post-pandemic hiring spree to a current reality of slower but steady growth. With unemployment rising above pre-pandemic levels, this is an evolving trend that could signal slower future growth in the tech economy.

Missouri Computer & Mathematics Unemployed Workers

Missouri Tech Industry

Our review of Missouri's technology industry found that in 2023 the industry employed 161,345 people and workers earned over \$19 billion in income. The tech industry accounted directly for over five percent of the total jobs in the state and about nine percent of the state's total earnings and sales. In 2023, there were 18,346 tech establishments operating in Missouri.

Missouri Technology Industry Summary Statistics, 2023

Indicator	Technology Industry	State Total	State Total Percentage
Employees	161,345	3,057,207	5.3%
Establishments	18,436	246,650	7.5%
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Sales (millions)	\$61,815	\$705,879	8.8%

Tech Industry Job Growth

Job growth in Missouri's tech industry had been strong since the recovery from the Great Recession. The state has grown at higher rates than the nation for most of that time. After the onset of the COVID-19 pandemic, other parts of the country experienced large tech growth spikes that were more pronounced than in Missouri. From 2022 to 2023, tech industry job growth in Missouri was almost flat. Based on these recent trends, Lightcast models predict that over the next 10 years, the state's growth will slightly lag the national average.

Tech Industry Employment Trends 100 = 2011 employment levels

Source: EL calculations based on Lightcast 2024.4

Economic Contributions of Tech Industry

The industry also contributes heavily to Missouri's tax revenues, exports, and gross state product (GSP). The tech industry generated almost \$43 billion in GSP in 2023, accounting for over 10 percent of the state's total economic output.

Missouri Technology Industry Economic Contributions, 2022

Indicator	Technology Industry	State Total	State Total Percentage
Taxes Paid (millions)	\$2,290	\$23,314	9.8%
Exports (millions)	\$25,953	\$432,774	6.0%
GSP (millions)	\$42,529	\$420,732	10.1%

Source: EL estimates based on Lightcast 2024.4

Technology Industry Contribution to Missouri's Gross State Product, 2023

Source: EL estimates based on Lightcast 2024.4

In Missouri, the tech industry has been growing consistently, but in recent years, the number of tech establishments has risen dramatically. An establishment is any company that has a location with a payroll. One company can have multiple establishments in a region. The growth in establishments has been primarily in computer systems, programming, and software service companies. Nationally, there has been a rise in entrepreneurship in recent years. Tech services is one of the easiest industries to operate remotely and has generally low capital barriers.

Top Establishment Growth by Industry, 2007–2023

Source: EL calculations based on Lightcast 2024.4

Missouri Tech Indus

The presence of the tech industry also helps generate activity in other sectors of the economy. The tech sector in Missouri had a job multiplier of 2.92 in 2023. This means that for every job created in the tech sector, there were almost two additional jobs created or supported in the economy. This was the second-highest job multiplier in Missouri's economy. Accounting for these multiplier effects increases the tech sector's overall impact on employment from 5 percent to 15 percent. In 2023, another 309,623 workers in Missouri were directly or indirectly supported by the tech industry.

Tech Industry Contribution to State Economy, 2023

Missouri Job Multiplier by Industry, 2023

Source: EL estimates based on Lightcast 2024.4

The tech industry is becoming a major engine of the state economy. In the last five years, tech added a net of 14,230 jobs. This was the fourth-highest industry group – more than education, manufacturing, or finance. Two of the top industries for net jobs added were transportation and warehousing and construction. These industries pay wages at or below the state average. The state economy benefits by having a high-wage industry like tech as a top job grower.

Net Jobs Change in Missouri by Industry, 2018–2023

Source: EL estimates based on Lightcast 2024.4 | Note: Other industries do not include tech industries in their job counts. For example, manufacturing represents the non-tech manufacturing job change.

Tech Subcategories

The tech industry was further evaluated by breaking it down into four subcategories including:

- Energy Technology
- Environmental Technology
- Life Sciences
- IT, Telecom, Hardware and Software (IT)

The Information Technology (IT) group includes industries related to hardware manufacturing, software services, social media, telecommunications and other computer-related services. Energy Technology includes industries related to fossil fuel and renewable power operations. Environmental Technology includes industries related to electrification, batteries, environmental consulting and waste remediation services. Life Sciences includes industries related to pharmaceutical manufacturing and research and development in biotechnology.

Missouri's Technology Industry by Subcategories, 2023

Technology Categories	Employment, 2023	Employment Change, 2022–2023	Employment Change, 2018–2023	Establishments, 2023	Job Concentration
Energy Technology	10,617	1.3%	-2.0%	418	0.55
Environmental Technology	15,053	3.7%	13.2%	1,123	0.96
Life Sciences	41,415	5.0%	17.6%	3,543	0.70
IT	94,260	-2.1%	7.4%	11,623	0.89
TOTAL TECH SECTOR	161,345	0.4%	9.7 %	18,436	0.81

Source: EL estimates based on Lightcast 2024.4 | Note: Some values may not add to the exact total due to rounding.

Employment concentration ratios offer an understanding of the concentration of an industry in an economy. Concentration values greater than 1.00 indicate that the industry is more concentrated regionally than the national average and a significant part of a state's economic base. Industries with high concentration often generate an economy's exports and wealth. Overall, the Missouri tech industry is 19 percent less concentrated than the national average. Very high concentrations in some tech hubs such as San Jose, Austin, and Boston raise the national average. The IT group of industries accounts for 58 percent of the total tech industry employment in the state. Job growth over the last five year has been strong in each subcategory except energy tech. The energy tech subcategory has been shedding jobs nationally as well. Looking at the last year, all subcategories saw net gain except for IT. This sub-category suffered nationally as venture funding and consumer demand slowed after the Federal Reserve began raising interest rates to combat inflation. In the last year, the greatest job growth came in the Life Sciences subcategory.

Tech Output Groups

The tech industry can also be evaluated by whether the jobs and establishments are involved in tech services or in tech manufactured goods. These are called Output Groups. In Missouri, as in all states, most of the tech industry is involved in providing tech services. However, tech manufacturing is experiencing high levels of job growth in the state, which signals a strong opportunity for Missouri. The level of growth in tech manufacturing has outpaced the national average consistently since 2011. This output group contains semiconductor manufacturing, which is experiencing a boom in the U.S. due to efforts to reshore tech manufacturing.

Missouri's Tech Industry by Output Groups, 2023

Technology Output Categories	Employment, 2023	Employment Change, 2022–2023	Employment Change, 2018–2023	Establishments, 2023	Job Concentration
Tech Services	134,263	-0.3%	7.0%	17,534	0.81
Tech Manufacturing	27,082	4.1%	25.4%	902	0.78
TOTAL TECH SECTOR	161,345	0.4%	9.7%	18,436	0.81

Tech Industry Earnings

The tech industry is prized for the high wages paid to workers. In Missouri in 2022, the average earnings per worker in the tech industry was \$128,600 a year. The average earnings for workers across all industries in the state is about \$74,200. A tech industry worker earns almost 1.7 times the average worker in the state. This earnings metric includes all the wages and supplements received by a worker. Supplements include employee benefits that on average accounted for about \$21,700 of a tech industry worker's earnings in Missouri. Even when accounting for the cost-of-living-index (COLI), Missouri's tech earnings are lower than the national average. This is both a positive and negative competitive factor. Lower wages present an opportunity for businesses moving from higher cost locations, but they can make it difficult to recruit talent to relocate to the state.

Technology Categories	Missouri	Missouri (Purchasing Power)	National Average
Energy Tech	\$161,300	\$178,200	\$175,900
Environmental Tech	\$85,800	\$94,800	\$97,600
Life Sciences	\$129,300	\$142,900	\$153,800
IT	\$131,400	\$145,200	\$187,800
All Categories	Missouri	Missouri (Purchasing Power)	National Average
Tech Services	\$132,200	\$146,100	\$170,200
Tech Manufacturing	\$110,700	\$122,300	\$166,000
TOTAL TECH INDUSTRY	\$128,600	\$142,100	\$169,500

Average Annual Earnings per Worker by Subindustry, 2023

Super Subindustries

Tech industries were divided into even further detailed groupings, super subindustries. This breakdown shows that software services are a significant driver of the tech industry growth in the state. Jobs in this group employ over 49,085 workers. Concentration is strong in the Internet, Social Media and Telecom super subindustries. Growth is strongest in Electronics Hardware Manufacturing and Life Science Manufacturing. Although small in job numbers, Renewable Energy has experienced the highest percentage growth. Research and development is also on the rise in the state with a five-year growth rate of 13 percent. These industries help develop new technologies that can catalyze further innovation.

Super Subindustries	2023 Employment	Employment Change (2018-2023)	Job Concentration
Software	49,085	5%	0.79
Internet, Social Media and Telecom	33,702	5%	1.11
Engineering, Environmental and Clean Tech	24,170	13%	0.78
Research and Development and Testing	12,967	13%	0.49
Electronics Hardware	11,473	33%	0.50
Life Sciences Manufacturing	11,139	29%	0.61
Other Energy and Power Generation	10,421	-3%	0.58
Remediation and Waste Management	8,192	18%	0.72
Renewable Energy	195	220%	0.10
TOTAL TECH INDUSTRY	161,345	10 %	0.81

Missouri's Tech Industry by Super Subindustries, 2022

Tech Industry Location

Across the state, the tech industry is primarily concentrated in the major metro areas of Kansas City and St. Louis with some dispersion in less urban areas. Ten counties have tech industry employment concentrations higher than 5 percent of the workforce.

State Comparisons of Tech Industry Metrics

Using the same methods for calculating the tech industry in Missouri, metrics were calculated for the remaining states and the District of Columbia to measure how Missouri tech trends compare. The District of Columbia is included in the charts, but not included in the state rankings. This section of the report evaluates many of the metrics shown in Section 3 compared against the values for the United States as a whole and the other states. This section looks first at metrics for the total tech industry but also shows state comparisons of the subcategories and output groupings. Tech occupation data is compared in a later section of the report.

The following charts list all the metrics that were measured for Missouri's tech sector and its corresponding ranking among all states. Missouri ranks in the top 15 of all states for three of the six indicators evaluated for the total tech sector.

Indicates state ranking of 1st - 15th
Indicates state ranking of 16th - 35th
Indicates state ranking of 36th - 50th

Comparing Missouri with other states in the country helps place the state's performance in context. In 2023, Missouri had the 32nd most concentrated tech industry economy. Despite the five-year job change rate for the state remaining strong for many years, Missouri ranked 31st and 38th for past and future job growth rates. This indicates that while Missouri's tech industry is growing, it is not growing as robustly as other states. The appendix of this report details the state rankings and shows that states in the Southeast (like Florida and North Carolina) and states in the Intermountain West (like Idaho and Utah) are growing at much higher rates. The state did rank among the top 15 for the cost of living adjusted earnings per tech worker, the percentage of women in the tech industry, and the diversity of the tech workforce.

Total Tech Industry

Metric	Value	Rank
Technology Sector Employment Concentration (2023)	0.81	32
Technology Sector Employment Growth (2018-2023)	9.7%	31
Expected Technology Sector Employment Growth (2024-2029)	5.0%	38
Average Annual Wage for Technology Sector Employees with Purchasing Power (2023)	\$142,102	14
Percentage of Women in the Technology Workforce (2023)	35.3%	12
Tech Industry Diversity Index (2023)	88.3	9

Missouri Total Tech 5-Year Job Change by Percentage and State Ranking

IT Industry Subcategory

Next, the IT subcategory was compared with other states. This group of industries represents the high-tech core including hardware manufacturing, internet, data storage, telecommunications, and software companies. In 2023, the IT subcategory in Missouri was 11 percent less concentrated than the national average with a job concentration of 0.89. This is the 18th most concentrated IT economy in the nation. Missouri's growth in the IT subcategory in the past was one of the fastest growing in the country. The 2018 to 2023 five-year growth rate fell below historic levels, leading to the bottom third rankings for historical and predicted IT growth. Top growth states like Nevada and Tennessee had growth rates over 37 percent from 2018 to 2023.

IT Industry

Metric	Value	Rank
IT Sector Employment Concentration (2023)	0.89	18
IT (Tech Core) Employment Growth (2018-2023)	7.4%	38
Expected IT Sector Employment Growth (2024-2029)	5.4%	44
Average Annual Wage for IT Sector Employees with Purchasing Power (2023)	\$145,231	18

Missouri IT 5-Year Job Change by Percentage and State Ranking

Source: EL estimates based on Lightcast 2024.4

Life Sciences Industry Subcategory

Life Sciences was the fastest-growing tech subcategory in the state from 2022 to 2023. While the subcategory is not as concentrated as other states in the nation, the growth rates have been strong. The subcategory has expanded jobs at a rate of 17.6 percent over the last five years. However, that growth ranked 31st in the nation because other states have experienced on average about 19 percent growth in Life Sciences during this period. Life Sciences was the one subcategory where the state's historical growth ranking improved from last year's tech report. The average earnings in Missouri for this sector are among the top 15 states when purchasing power is considered.

Missouri's life sciences industry may get a boost from federal research funding as Kansas City was selected by the U.S. Economic Development Administration (EDA) as a Tech Hub for vaccine biologics manufacturing. This designation allows a hub to apply for millions of dollars in funding from the CHIPS Act. Another funding round with \$280 million remains, and KC BioHub is attempting to secure a portion of those funds.

Life Sciences Industry

Metric	Value	Rank
Life Sciences Employment Concentration (2023)	0.70	37
Life Sciences Job Change (2018-2023)	17.6%	31
Expected Life Sciences Job Change (2024-2029)	5.2%	23
Average Earnings for Life Sciences Employees with Purchasing Power (2023)	\$142,913	11

Missouri Life Sciences 5-Year Job Change by Percentage and State Ranking

Source: EL estimates based on Lightcast 2024.4

Energy Tech Industry Subcategory

The Energy Tech subcategory is a small part of the Missouri economy and is 45 percent less concentrated than national levels in terms of employment. Missouri has lost jobs in the oil and gas portion of the energy tech economy. While these jobs are on the decline in the state and nationally, renewable energy is expanding in the state.

Energy Tech Industry

Metric	Value	Rank
Energy Tech Employment Concentration (2023)	0.55	32
Energy Tech Job Change (2018-2023)	-2.0%	23
Expected Energy Tech Job Change (2024-2029)	-1.5%	36
Average Annual Wage for Energy Tech Employees with Purchasing Power (2023)	\$178,238	11

Missouri Energy Tech 5-Year Job Change by Percentage and State Ranking

Environmental Tech Industry Subcategory

Environmental Tech is another emerging subcategory for Missouri. This subcategory is almost as concentrated in Missouri as it is in the nation. Past and predicted job growth are among the top 30 states in the country. Growth in this subcategory is driven by battery manufacturing and environmental consulting services. The Environmental Tech subcategory in Missouri has utilized federal programs to spur innovation. The University of Missouri System is leading a tech hub to advance critical mineral processing for lithium and lead-acid batteries. A project led by Missouri S&T was recently awarded over \$28 million in funding from the EDA to support the construction of an 18,000-square-foot testing facility.

Environmental Tech Industry

Metric	Value	Rank
Environmental Tech Employment Concentration (2023)	0.96	29
Environmental Tech Job Change (2018-2023)	13.2%	18
Expected Environmental Tech Job Change (2024-2029)	6.7%	27
Average Annual Wage for Environmental Tech Employees with Purchasing Power (2023)	\$94,789	10

Missouri Environmental Tech 5-Year Job Change

Source: EL estimates based on Lightcast 2024.4

Tech Services Output Group

Next, tech groupings based on output type were evaluated. Tech services represents high tech core services like social media, data storage, telecommunications, and software companies. In 2023, Missouri had the 27th most concentrated tech services employment. Missouri ranks in the top 15 states for cost of living adjusted earnings. Job growth for tech services has been consistent in the state but has not ranked as highly as other states in recent years.

Tech Services

Metric	Value	Rank
Tech Services Employment Concentration (2023)	0.81	27
Tech Services Job Change (2018-2023)	7.0%	37
Expected Tech Services Job Change (2024-2029)	3.3%	45
Average Annual Earnings for Tech Services Employees Adjusted for Purchasing Power (2023)	\$146,096	15

Missouri Tech Services 5-Year Job Change by Percentage and State Ranking

Source: EL estimates based on Lightcast 2024.4

Tech Manufacturing Output Group

In the past five years, tech manufacturers in the state added jobs at a rate of over 25 percent. This was the 7th fastest rate in the nation during the period and an improvement from the rank in last year's report of 10th. Future growth is also predicted to be among the top ten. While Missouri ranked among the top 15 for adjusted earnings in tech services and many of the tech subcategories, tech manufacturing adjusted wages did not rank as high.

Tech Manufacturing

Metric	Value	Rank
Tech Manufacturing Employment Concentration (2023)	0.78	29
Tech Manufacturing Job Change (2018-2023)	25.4%	7
Expected Tech Manufacturing Job Change (2024-2029)	13.2%	10
Average Annual Earnings for Tech Manufacturing Employees Adjusted for Purchasing Power (2023)	\$122,304	24

Missouri Tech Manufacturing 5-Year Job Change by Percentage and State Ranking

Source: EL estimates based on Lightcast 2024.4

Tech Occupations

Technology workers today are present in virtually every industry. As technology has permeated most businesses and is increasingly important to company competitiveness, industries like banking, media and health care employ more tech workers. To account for the number of tech occupations that exist across all industries, we reviewed 85 separate five-digit Standard Occupational Codes (SOC) focusing mostly on STEM driven work. A complete list is included in the appendix.

Using this methodology, the data showed that there are 221,350 workers in tech occupations in Missouri. This number is higher than the 161,345 workers employed by the tech industry. This means there is a significant portion of tech occupations outside traditional technology companies in the state. About 31 percent

of tech occupations jobs are located within the tech industry; the rest are employed in other industries from manufacturing to finance. The rate of tech occupations in tech industries has declined from 34 percent in last year's report, showing how tech is permeating through Missouri's economy.

Software developers are the top occupation of the tech workers group, accounting for almost nine percent of the workforce. Every year, on average, 27,630 tech jobs need to be filled in the state to accommodate growth and retiring workers. The median annual wage for tech workers is \$81,800 and jobs are growing in the state at a rate of 15 percent over five years.

Staffing Patterns of Tech Industries and Tech Occupations, 2023

Source: EL estimates based on Lightcast 2024.4

Top Tech Occupations in Missouri, 2023

Description	2022 Occupations	Employment Change, 2018–2023	Median Annual Wage	Annual Openings
Software Developers	18,995	+1%	\$104,600	1,670
Computer User Support Specialists	14,581	+1%	\$51,730	1,367
Market Research Analysts	14,564	+50%	\$63,590	2,004
Management Analysts	10,939	+6%	\$83,890	1,424
Computer Occupations, All Other	8,508	+11%	\$89,690	853
Computer and Information Systems Managers	8,279	+30%	\$136,140	925
Computer Systems Analysts	8,082	-26 %	\$96,660	684
Network and Computer Systems Administrators	6,522	-21 %	\$82,530	517
Financial and Investment Analysts	5,930	+31%	\$79,040	666
Industrial Engineers	5,353	-8 %	\$92,120	467
Computer Network Support Specialists	4,321	-13 %	\$56,600	435
Computer Network Architects	3,948	+19%	\$109,760	404
Data Scientists	3,860	+112%	\$81,410	632
Logisticians	3,687	+32%	\$72,840	475
Operations Research Analysts	3,205	+116%	\$53,600	479
All Tech Occupations	221,350	+15%	\$81,800	27,630

Source: EL estimates based on Lightcast 2024.4

Top 5 Tech Occupations in Growth

Top Five in Net Job Growth		Top Five in Growth Percentage	
Market Research Analysts	+4,880	Mathematicians	+931%
Data Scientists	+2,040	Semiconductor Processing Technicians	+140%
Computer and Information Systems Managers	+1,920	Calibration Technologists	+138%
Operations Research Analysts	+1,720	Computer Hardware Engineers	+132%
Financial and Investment Analysts	+1,390	Operations Research Analysts	+116%
Analyst jobs were among the top occupations and those experiencing the most growth. The increase of Big Data has created demand for workers who can help dissect and process that information. This shows that from a talent perspective, cultivating a tech workforce is not just about coding websites and apps; having smart individuals who are well versed in statistics and mathematics is also valuable. Given Missouri's strong tech manufacturing growth, engineering and manufacturing technician positions are also expanding at high percentage rates. Like tech industry jobs, tech occupations tend to strongly concentrate in the more urban counties. However, there's a good number of counties across the state with tech occupation concentrations higher than 5 percent and many between 3 and 5 percent.



Tech Occupations Percentage of Total Jobs (2023)

While the median earnings for a tech occupation are \$81,800, true earnings will range based on industry and experience. The lowest percentile earns about \$45,730 and the highest can earn about \$143,280 a year. Generally, tech workers can earn more for their tech skills elsewhere in the country. However, Missouri wages are more competitive with national averages when cost of living is considered. For the highest-skilled positions, the state is less competitive on wages.



Tech Occupation Wage Distribution by Location, 2022

Source: EL calculations based on Lightcast 2024.4

As mentioned, these tech occupations exist across many different industries. The chart below demonstrates which industries (two-digit level) employ tech workers in Missouri. Beyond the expected professional services and information industries, tech workers are also present and growing strongly in manufacturing, finance, government, and management. About 16 percent of all jobs in the finance and insurance industries are tech occupations and these added the most tech workers from 2018 to 2023 with over 6,100 net new jobs. Tech workers now account for 9 percent of the manufacturing industry as production becomes more automated and integrated.



Top Industries Employing Tech Workers, 2023

Source: EL calculations based on Lightcast 2024.4

Gender Demographic Breakout

To understand the demographic distribution within tech occupations, the percentage of workers in a group was compared to the percentage of that group in the Missouri population. This produces an index value where 100 indicates equal representation of the group in tech occupations compared to the state's population. If the index value is less than 100, the group is underrepresented in tech occupations and vice versa if the index value is over 100. Looking first at gender demographics, women account just over one-third of tech occupations while accounting for just over one-half of the population. While we know Missouri has higher rates of women working in the tech industry compared to most other states, women are still well underrepresented in tech occupations. The index for women showed improvement in representation for women compared to last year's report.

Gender Distribution of Tech Occupations in Missouri, 2023

Demographic	Tech Occupations	MO Population	Index
Women	36%	51%	70.3
Men	64%	49%	130.5

Source: EL estimates based on Lightcast 2024.4

Race Demographic Breakout

In Missouri, 79 percent of tech workers are white. This matches the proportion of white people in Missouri very closely. In many other states, white workers tend to be overrepresented in the tech occupations workforce. Workers who are Asian are well-represented in the tech workforce. Other groups of color do not fare as well. Black people accounted for less than 9 percent of tech occupations but make up 11 percent of the state's total population. The index rates for the Latino or Native communities in the tech workforce also indicate their underrepresentation in tech occupations. As the tech market continues to grow in the state, it is important that all parts of the population participate and benefit. The index levels did improve for Black, Hispanic, and multiracial groups compared to the previous year's report.

Demographic	Tech Occupations	MO Population	Index
White	79%	78%	101.6
Black or African American	9%	11%	75.5
Asian	7%	2%	292.4
Hispanic or Latino	3%	5%	54.5
Two or More Races	2%	2%	99.9
American Indian or Alaska Native	0.2%	0.4%	37.6
Native Hawaiian or Other Pacific Islander	0.1%	0.2%	39.6

Race/Ethnicity Distribution of Tech Occupations in Missouri, 2022

Source: EL estimates based on Lightcast 2024.4

Age Demographic Breakout

The age of the tech workforce was also compared against the age breakdown of the overall workforce. Tech occupations tend not to rely on the very young but have a higher level of young and middle-aged workers. Compared to the overall state workforce, tech occupations employ fewer older workers. This group still represents 20 percent of the tech jobs in Missouri and is at risk of retirement in the coming years. Companies and workforce stakeholders will need to be able to replace their skill sets in the future.

Demographic	Tech Occupations	MO Workforce	Index
Age 24 and Younger	6%	15%	41.1
Age 25 to 34	26%	22%	121.3
Age 35 to 44	27%	21%	124.3
Age 45 to 54	21%	19%	110.4
Age 55 and Older	20%	23%	86.4

Age Distribution of Tech Occupations in Missouri, 2022

Source: EL estimates based on Lightcast 2024.4

Education Attainment

One of the ways to increase the equity of tech jobs is to focus on skills-based hiring. While many companies have started to remove education requirements to expand applicant pools, a review of job postings in the last three years reveals that about 61 percent of postings for tech jobs required some form of postsecondary education. This level dropped by one percentage point from the previous year's report. Most companies hiring tech workers are looking for postsecondary training.

Minimum Education Required for Missouri Tech Job Postings



When looking at the data for educational completions, which includes degrees, certificates, and awards from postsecondary institutions, there has been a decrease in engineering-related fields in recent years. Computer and Information Science programs had been stalled over the last few years but saw a jump in 2023. This jump was a result of more master's degree level programs being completed, particularly at the University of Central Missouri and the University of Missouri at Kansas City. These two universities had some of the biggest gains in completions awarded from 2022 to 2023 in the nation. Other STEM programs like biomedical sciences, math and statistics, and physical sciences see a similar number of completions year over year. In 2023, postsecondary institutions in Missouri produced over 12,750 completions in STEM.



Annual Education Completions in Missouri for Selected Programs

Online job profiles for Missouri graduates indicate that about 39 percent stay in the state for work. This indicates that Missouri will need to continue to produce talent through the postsecondary system and find new ways to train talent for tech jobs. Research from CompTIA surveying individuals between the ages of 18 to 34 has highlighted that many workers self-select themselves away from a career in tech. About 6 in 10 prospective workers believe there is a major barrier to them pursuing a career in tech. The top confidence gap barriers include:

- Concern over perceived lack of math/science skills
- Concern over not having 4-year degree
- Belief that it is too late to start a career in tech
- Belief that training is cost-prohibitive
- Belief that jobs are limited to "Big Tech"/Silicon Valley firms
- Belief that there are not significant tech jobs in their region

The facts about the demand and accessibility of a tech career might not be reaching enough potential workers. Companies and workforce stakeholders will need to do more to develop a skills-based hiring approach and find new ways to connect workers to these jobs. Companies will likely need to perform more in-house training than they have in the past as the tech skills needed are changing rapidly. When compared against the rest of the nation, tech occupation growth is an area in which Missouri has generally improved. The state improved to 31st in terms of historical five-year job growth. Again, tech jobs are growing at robust rates in the state but not as rapidly as in other states. The lower cost of living in Missouri increases tech workers' purchasing power. Median adjusted earnings for tech occupations ranked in the top 15 states in the nation.

Tech Occupation State Comparisons

Metric	Value	Rank
Tech Occupations Employment Concentration (2023)	0.83	29
Tech Occupations Growth (2018-2023)	15.0%	31
Expected Tech Occupations Growth (2024-2029)	5.7%	41
Median Annual Earnings Adjusted for Purchasing Power (2023)	\$90,382	15

Missouri Tech Occupations 5-Year Job Change by Percentage and State Ranking



Source: EL calculations based on Lightcast 2024.4

Emerging Tech

There are many portions of the tech sector that stakeholders would like to measure but are difficult to capture with traditional labor market data. A company is assigned to the NAICS code of their primary activity. If a company is providing software solutions to the agricultural market, they are likely categorized as a software publisher, but this will not indicate that they're a player in the emerging market of AgTech. One way to measure and track these emerging markets is through online job postings. Job postings data can be filtered based on the mention of certain phrases. In this section, job postings data is used to reveal trends in some emerging tech markets that are of interest to the Missouri economy.

AgTech

Missouri has a strong agricultural industry and has seen the creation of numerous AgTech startups in recent years. Job postings data from November 2023 to November 2024 revealed that there were 163 unique postings that mentioned keywords associated with AgTech. In the last year, about 50 different employers in Missouri posted jobs with AgTech keywords. The median posted salary for these jobs was \$61,900 per year. AgTech focused positions are averaging 28 active job postings per month in the state for job titles including laboratory technicians, biologists, research associates, and data scientists. Monthly job postings numbers include the newer listings and the previous listings that are still active that month. One of the top AgTech companies in the state, CoverCress, was ranked 34th in the top 250 GreenTech Companies by TIME magazine in 2024.

Top Missouri companies posting for AgTech:

- Bunge
- Gibraltar Industries
- Bayer
- Farmer's Edge
- CoverCress
- Pluton Biosciences
- Farmer's Business Network
- Land O'Lakes
- Prairieland FS

FinTech

Missouri is home to major financial companies. Technology has helped disrupt the traditional banking structure and created a demand for tech workers in the industry. In the last year, there were 1,430 unique postings in Missouri that mentioned FinTech or Insurance Tech keywords. There were 186 employers competing for talent with FinTech skills. The median posted salary for these FinTech positions was \$90,000 per year. An average of 230 job postings were active per month and included job titles such as expansion managers, software engineers, and digital product managers. FinTech boomed during 2021 when private investment surged in a low-interest-rate environment, but demand in finance decreased as the Federal Reserve raised interest rates to curb inflation. The number of FinTech-related job postings increased in the fall of 2024 in Missouri.



Missouri FinTech Unique Job Postings

Top Missouri companies posting for FinTech:

- JP Morgan Chase
- Edward Jones
- Broadridge Financial Solutions
- Lead Bank

- Fiserv
- Jack Henry & Associates
- NBH Bank
- Forvis

Source: EL estimates based on Lightcast 2024.4

Cybersecurity and Data Privacy

Data privacy and protecting cyber assets from security threats is becoming a need for businesses regardless of their industry. A utility company, the federal government, a bank, a credit card company, and an aerospace company all need to protect sensitive digital information in today's world. Demand for cybersecurity talent is strong in Missouri with 12,495 unique postings in the last year and 1,870 employers competing for talent. The median posted salary for cybersecurity-focused jobs was \$114,000 annually. Monthly demand for cybersecurity job postings in Missouri stayed consistent throughout the last year, averaging about 2,040 active unique job postings per month.



Missouri Cybersecurity & Data Security Unique Job Postings

Source: EL estimates based on Lightcast 2024.4

Top Missouri companies posting for Cybersecurity:

Boeing

- FBI
- World Wide Technology
- Liberty Utilities Edward Jones
- Centene

- Mastercard
- Southern Bank
- Elevance Health

Generative Al

The newest disruptive technology, artificial intelligence (AI), has created a stir in the economy. AI is a transformative technology that enables machines to perform tasks requiring human cognition, such as learning, decision-making, and problem-solving. The largest public-facing product, ChatGPT, has been available for use for about two years. The app reached 100 million users within two months, making it the fastest-growing tech product in history. AI extends far beyond ChatGPT, encompassing transformative applications across diverse industries. In healthcare, AI systems like IBM Watson Health analyze vast datasets to assist in personalized treatment plans and disease prediction. In manufacturing, robotics powered by AI, such as those used by Tesla, optimize production efficiency and quality control. In finance, AI underpins fraud detection systems and algorithmic trading platforms, enhancing security and efficiency.

In Missouri, demand for AI skills in job postings is rising steadily but is not close to overtaking the market as some have predicted. In the last year, 9,380 unique jobs have been posted with 1,700 employers competing for talent. The median posted salary for jobs requiring AI skills was \$115,600 per year. Companies from a wide variety of industries in Missouri are looking for talent with AI skills.



Missouri Al Unique Job Postings

Source: EL estimates based on Lightcast 2024.4

Top Missouri companies posting for AI:

- Boeing
- Deloitte
- Mastercard

- Edward Jones
- Ford
- Bayer

- WSP Global
- World Wide Technology

State Comparison of Tech Infrastructure Metrics

Like other parts of the economy, the technology sector needs a solid infrastructure to flourish. Logistics firms must have good highways to conduct their business, agriculture needs good ports for export, and many manufacturers need robust water and wastewater systems. A strong technology infrastructure can be essential to a "knowledgebased" economy. The World Bank defines strong knowledge-based economies on four pillars:

- Entrepreneurship incentives,
- Skilled and educated labor force,
- Physical infrastructure access for technology and communications and
- Innovation ecosystem that fosters collaboration between academia, private sector and government.

Using this framework, the technology infrastructure of Missouri was evaluated by comparing factors such as funding access, patents, STEM education and university technology transfer. This section compares indicators that reflect a state's technology infrastructure and assesses Missouri's position among other states.

Missouri ranked in the top 15 states for six indicators, including STEM postsecondary education, low housing cost burden, and low business taxes. This report also identifies areas that need improvement. Missouri did not compare as well in broadband access, internet adoption, and creating more business than those that folded. Data that measured research – like patents and total Research and Development – ranked in the middle of the pack.

Missouri State Rankings for Tech Infrastructure Indicators



Source: EL estimates based on Lightcast 2024.4

Full details of each metric are available in the appendix of the report. Another highlight is that Missouri is improving its venture capital funding. Venture capital investment has grown sharply in the last ten years, even outpacing the U.S. average change rate in 2023.



Source: EL estimates based on Lightcast 2024.4

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Key Takeaways for Tech Sector

This analysis highlights the tech industry's role in the Missouri economy. Both tech companies and tech jobs are predicted to grow at robust rates into the future. While the state is not among the fastest-growing tech economies, it does have some unique advantages. These advantages include having a lower cost of living, a friendly business climate, and a more diverse tech workforce than other states. The biggest challenges for the sector moving forward will be maintaining growth and finding strategic advantages to compete with the surging tech states in the Southeast and Intermountain West. The tech infrastructure in Missouri can be improved by creating better access to affordable broadband and by helping regional tech startups thrive.

Tech saw a surge during the post-pandemic recovery. As the economy renormalized, demand cooled for tech occupations. While tech occupations are trending down overall, emerging tech areas like AgTech, AI, cybersecurity, and FinTech have all seen job postings increase in recent months. This highlights the importance of Missouri finding its most successful niches within the tech sector. Stakeholders must remain diligent to ensure a sufficient tech workforce pipeline to support these emerging opportunities.



Missouri Tech Occupation Job Postings

Source: EL estimates based on Lightcast 2024.4

Recommendations

1. Leverage sectors where Missouri already has strengths

While tech has been spreading out from its traditional coastal hubs, much of the Big Tech innovation still occurs in these locations. A recent LinkedIn article showed the most innovative AI startups were still concentrated in San Francisco, New York City, and Boston. A good strategy for a state like Missouri is to leverage its economic strengths and unique advantages for tech. The state is already the headquarters for many financial and insurance companies. This makes FinTech advancement a smart strategic option for the state. Innovation in this field – such as wealth management platforms, blockchain, cryptocurrency, geospatial and digital payments – offers opportunities for growth. Similarly, Missouri's strong agricultural base presents an opportunity to continue to develop advanced AgTech. This also offers opportunities to connect rural parts of the state with the regional tech hubs in Kansas City and St. Louis.

The state's growth in tech manufacturing offers the potential to expand in Missouri on the hardware side of the tech sector. Missouri is one of the top ten states in tech manufacturing growth. This is driven by semiconductors, electronic components, circuit boards, batteries, and life sciences products. These products lead to the national trend of reshoring critical manufacturing back to the US. This growth should help leverage more research, tech manufacturing suppliers, and workforce programs to locate in Missouri. Missouri could be marketed as the state where tech products are produced. Manufacturing is also easier to locate than tech services operations in suburban or rural areas. Further expanding this sector could help spread the benefits of the tech industry to more parts of the state.

Smart Business Relocation Tax Package

- Provide corporate tax relief for tech companies relocating headquarters or regional offices to Missouri.
- Create a "Tech Zone" designation in key metros (Kansas City, St. Louis, Springfield, Columbia) with infrastructure investments, fast-tracked business permits, and incentives for high-wage job creation.

Tech manufacturing expansion credits

- Provide targeted tax incentives for companies investing in semiconductor, battery, and electronic hardware manufacturing facilities in Missouri.
- Prioritize support for firms capitalizing on CHIPS Act funding and reshoring initiatives.

Missouri Innovation and Research Fund (MIRF)

• Establish a fund to match federal grants for research and development (e.g., SBIR/STTR grants), encouraging startups

and university research commercialization.

• Offer tax credits for private-sector research and development investments tied to Missouri universities.

Fast track technology business permitting

• Cut red tape by streamlining regulatory approvals for new tech business development, data centers, and innovation hubs.

2. Focus talent recruitment on returning Missourians

Missouri could strengthen its tech workforce by implementing targeted strategies to recruit native Missourians who have left the state for opportunities elsewhere. Many professionals with ties to Missouri possess the skills and experience needed to contribute to its growing tech sector and could be incentivized to return with competitive job opportunities, cost of living advantages, and quality of life benefits. Those who have left the state and returned can assist in broadening the tech ecosystem via their networks outside of the state. State and local governments could partner with tech companies to create relocation incentives such as tax credits, signing bonuses, or housing subsidies for returnees. Additionally, fostering a robust innovation ecosystem through investments in coworking spaces, networking events, and industry-focused business accelerators would enhance Missouri's appeal as a tech hub. These efforts, combined with a targeted outreach campaign emphasizing Missouri's affordability, family-friendly environment, and evolving tech landscape could help build a deeper, more dynamic tech workforce.

Missouri technology talent retention incentives

- Offer student loan forgiveness or tax credits for technology workers who stay in Missouri for at least 5 years post-graduation.
- Develop a "Return to Missouri" relocation incentive for Missourians who left the state for technology careers but are willing to move back.
- Encourage urban housing developments near tech hubs.

3. Expand efforts to connect young people with technology careers

To develop a larger, high-quality workforce pipeline in Missouri, it is imperative to keep finding more ways to introduce young people to promising tech industries and tech occupations in their region. This includes workplace visits, employer talks, and other career exposure strategies in high school, middle school, and before. It should include expanded opportunities for work internships, apprenticeships, and other hands-on experience for high schoolers and local college students. Efforts to connect young people in Missouri with attractive tech careers should be structured regionally, collaborating with interested employers in each area. Career exposure and work experience could center on AgTech in one region, FinTech in another, Environmental Tech in some places, and tech manufacturing in others.

State-sponsored technology apprenticeships and fast track training

- Expand public-private partnerships with companies to create certification-based training programs for high-demand tech jobs (AI, cybersecurity, FinTech, software development).
- Provide state tax incentives for businesses offering apprenticeships and on-the-job training in tech fields.
- Establish non-degree pathways for tech careers, reducing reliance on traditional 4-year degrees.

Campaign to expose students and educators to available tech jobs

4. Increase outreach to underrepresented groups in the technology workforce

Given chronically tight labor markets, Missouri employers and workforce partners cannot afford to overlook any group that can help expand pools of quality workers. This especially includes a greater focus on attracting women – who comprise only 36 percent of those in tech occupations – into tech career paths. Outreach should start in K-12 schools.

Targeted outreach campaigns

• Develop a campaign targeting underrepresented populations. An important component of this work will be explaining the many attractive aspects of tech careers, such as high earnings potential, work-life balance, and an enormous variety of workplace settings.

5. Promote regional business climate strengths

Another strength Missouri can leverage to develop tech further is the state's favorable business climate. Missouri had the fourth lowest effective business tax burden in the nation in 2023. The cost of labor in Missouri is also lower than in many other tech-dominant states. Tech talent can benefit from lower costs of living, particularly in housing. Other states with strong business climates have been able to recruit tech companies away from traditional hubs by leveraging these advantages. Certain Missouri neighbors are consistently ranked poorly for business friendliness. A relocation from a neighboring state in the Midwest might be easier for companies to execute and to relocate their existing workers.

Targeted marketing campaign and data portal

- Work with economic development professionals to create materials that promote the advantages of Missouri for tech company relocation.
- Require the Missouri Department of Economic Development (DED) to annually track key tech workforce indicators, including graduate retention rates, tech job creation, and employer hiring needs, to align policy with real-time industry needs.

6. Address weaknesses in technology infrastructure and digital equity

Missouri faces an urgent need to strengthen its broadband infrastructure and cybersecurity measures to ensure that all residents have access to reliable internet and are protected from growing digital threats. Rural areas, in particular, often experience limited connectivity, which hinders economic opportunities, education, and healthcare access. Expanding broadband access will bridge the digital divide, enabling Missourians to thrive in an increasingly online world. At the same time, as more individuals and businesses rely on the internet, the state's cybersecurity efforts must be bolstered to prevent data breaches, cyberattacks, and other digital threats that can compromise sensitive information and disrupt vital services. Strengthening both broadband and cybersecurity will not only improve quality of life but also support Missouri's economic development and public safety.

Affordable, high-speed broadband statewide

- Improve Missouri's broadband access, internet adoption, and digital infrastructure to support tech sector expansion across the state.
- Increase state funding for broadband expansion, prioritizing rural and underserved urban areas.
- Offer grants for municipalities and private providers to expand fiber optic networks or adoption of "new-wave" satellite tech (Starlink).

Cybersecurity and data privacy standards

- Strengthen statewide cybersecurity protections and provide tax incentives for businesses investing in cybersecurity infrastructure.
- Require state government contracts to include cybersecurity best practices.

7. Establish public-private partnership for artificial intelligence (AI) advancement

States play a crucial role in shaping the future of AI by incentivizing its learning and adoption. As AI continues to transform industries, economies, and societies, governments can help ensure that their workforce remains competitive and adaptable by fostering an environment where both individuals and businesses can thrive in AI-driven sectors. By offering incentives such as tax breaks, grants, or funding for educational programs, states can encourage the development of AI skills and support innovation. This proactive approach not only strengthens the local economy but also ensures that the workforce is prepared for the challenges and opportunities of the future, positioning the state as a leader in the global AI landscape.

Establish a state-backed AI research center to attract federal and private funding.

Provide legal frameworks & funding incentives for companies developing AI and quantum computing.



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This report was written by Skylar Elliott Casey and Ted Abernathy of Economic Leadership LLC in January 2025.



Missouri State Comparison Charts

An important focus of Technology2030 is to compare Missouri with other states in the country. This will help place the state's performance in context, identifying strengths and areas for attention. Missouri's tech industry accounts for 5.3 percent of total employment in the state, or an employment concentration value of 0.81. This indicates tech is less concentrated in the state than the national average. Missouri has a diverse state economy that is not uniquely reliant on the tech industry.



Total Tech Industry Employment Concentration, 2023

TECHNOLOGY2030 55

In the past five years, jobs in this industry have grown by almost 10 percent in the state. That is the 31st-highest growth rate and over three percentage points below the national average. Certain Mountain West states, like Nevada and Utah, scored high. Nevada is growing at a high rate due, in part, to the rapid expansion at the Tesla Gigafactory in Reno. States in the southeast, like Tennessee, Florida, Georgia, and North Carolina, are also growing their tech industry at higher rates than Missouri.





Source: EL calculations based on Lightcast 2024.4

Based on Lightcast models that measure the historical 5-year, 10-year, and 15-year growth trends to predict future growth, the expected growth of the tech industry for all 50 states and the District of Columbia was calculated for the next five years. Missouri's tech industry is predicted to increase by 5 percent. This ranks Missouri 38th out of all the states and just below the national average. As tech growth slowed from 2022 to 2023, future predictions shifted downward in this year's report.





Earnings are a key talent recruiting tool. Workers must weigh their compensation with the cost of living when comparing locations. Normalizing tech industry wages by purchasing power, or accounting for the lower cost of living in Missouri, the annual wage ranks 14th and higher than the national average. Tech powerhouse states like New York, California and Washington are able to offer the most competitive wages to tech industry workers even after accounting for their higher costs of living. This can make it difficult for a state like Missouri to compete for the highest-skilled talent.



Total Tech Industry Average Earnings with Purchasing Power, 2023

The gender makeup of the tech industry across all 50 states was evaluated. The tech industry has been traditionally, and is still, male-dominated. States are making efforts to encourage women into STEM careers and education. While almost every state has far from equal representation in this industry, Missouri performs well compared to other states. At 35.3 percent of the workforce, Missouri has the 12th highest rate of women in the tech industry workforce.



Percentage of Women in Total Tech Workforce, 2023

The tech industry diversity index is calculated by dividing the percentage of tech industry workers who identify as people of color or in the Hispanic community by the ratio present in the overall population. Therefore, if a state has a tech industry diversity index lower than 100, the tech industry is less diverse than the state's overall population. A value of 100 would mean the tech industry is representative of the state's overall population. Only two states had a diversity index score above 100. Missouri has the 9th highest diversity index at 88.3. This is a slight decline from ranking 6th in the previous year's report.



Total Tech Industry Diversity Index, 2023

Next, the IT subindustry was evaluated specifically. This group of industries represents the high-tech core, including hardware manufacturing, internet, telecommunications, and software companies. In 2022, the IT industry was 11 percent less concentrated in Missouri than at the national level. The concentration of IT industry employment in Missouri is just under the national average and ranks 18th across the states in terms of IT concentration.



IT Employment Concentration, 2023

TECHNOLOGY2030 61

The employment growth rate in IT from 2018 to 2023 for Missouri is more than 7.4 percent. This was the 38th fastest growth rate across all 50 states. In the previous iteration of this report, Missouri ranked in the top 15 states for this metric. Missouri's growth has remained positive but has not spiked in the same way seen in other states, thus bumping the state down in the rankings.





Missouri's IT industry is projected to grow from 2024 to 2029 by more than 5.4 percent. While positive, this rate is not as fast as the national average or 43 other states. States in the Southeast and Intermountain West are predicted to continue to have the fastest growth in IT.



Predicted IT Job Change, 2024–2029

Source: EL calculations based on Lightcast 2024.4





The next group of charts focuses on tech occupations. This group of industries represents workers who perform tech roles regardless of the company's industry. In 2023, the tech occupations were 17 percent less concentrated than the national average. Missouri ranks 29th across all states.



Tech Occupations Employment Concentration, 2023

Like the data for the tech and IT industries, growth in state employment for tech occupations was positive from 2018 to 2023. Tech occupations grew by 15 percent, which was still lower than the national average and many other states.



Source: EL calculations based on Lightcast 2024.4



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Using Lightcast's models of forecasted growth, Missouri is expected to grow its tech occupations by 5.7 percent by 2029. This ranks the state 41st in predicted growth. While tech occupations are a crucial part of job growth within Missouri, this growth is just not as strong as other states are experiencing.





When evaluating tech occupations, median annual earnings data is available. For the tech industry analysis, only average annual earnings data is available, which can be skewed by the presence of outliers. This median estimate gives us the middle of the bell curve measure on wages. The typical tech worker in Missouri earns around \$90,380 a year when accounting for purchasing power by state. The state ranks in the top 15 for this metric.



Tech Occupations Median Annual Earnings Adjusted for Purchasing Power, 2023

Source: EL calculations based on Lightcast 2024.4

Research and Development funding is a major infrastructure component of a technology sector. Research and development funding helps companies and universities develop new technologies that can be commercialized and spur tech growth. We looked at the total obligations, including federal, state and private funding sources, across all states and found that Missouri ranks 20th in this indicator. As the chart shows, significant amounts of federal research and development is concentrated in the states with large federal facilities. New Mexico ranks first in this list with its high funding levels to federal labs, Los Alamos National Lab and the Sandia National Laboratory, relative to the state's gross product.

Funding Source	MO Ranking
Federal	25th
Business	16th
Academic	5th
State	13th
Total Research and Development	20th

Tech Occupation State Comparisons



Total Research and Development as a Percentage of GDP, 2021
Missouri's highest ranking for research and development sources is from the private sector. This is the amount of private research and development spending as a percentage of the state's private output. This demonstrates research and development driven by companies themselves for profit driven innovation. Business-performed research and development funding made up 2.2 percent of Missouri's private GDP in 2021, ranking it 16th among the states.



Business Performed Research and Development as Percentage of Private GDP, 2021

Another indicator of relevant research and development funding is science and engineering funding in higher education. The technology from this research can be spun off to create new companies. Missouri ranked 15th amongst all states and above the national average in 2022. This was an improvement from ranking 16th in last year's report.





Patents are another indicator of the level of innovation occurring in a place. Patents usually spur growth, particularly in high-cost industries like pharmaceuticals. For this metric, patents are standardized by the number of science and engineering workers. Missouri averaged 14.5 patents per 1,000 science and engineering workers in 2023. This ranks 32nd among all states, an improvement by one spot in the rankings.









Successful new developments from research occurring at universities can be commercialized and help spur new privatesector growth in an area. The ability of a state to capitalize on its research capabilities and turn them into marketable concepts means more tech start-ups and jobs. This level of tech transfer can be measured by the number of options and licenses of university IP that is spun off to the private sector. An association of university technology transfer managers, AUTM, catalogs the tech transfer data from over 190 universities. In 2023, Missouri ranked 17th among states in terms of options and licenses that its universities were able to execute.



Technology Licenses and Options Executed from Universities, 2023

Another measure of technology transfer, the number of start-ups from universities, can indicate the level of entrepreneurship interest within a state's universities and its ability to convert research assets and public funding into economic opportunities. Missouri had the 23rd highest number of start-ups spun off from its universities in 2023 with 12 new companies established.



Start-Ups from Universities, 2023

Source: AUTM (2024)

One option for new companies seeking funding for high-tech R&D is the federal government's Small Business Innovation Research (SBIR) and the Small Business Technology Transfer (STTR) funding programs. These programs support and encourage American innovation by investing in small businesses during their concept and prototype development phases to reach commercialization. SBIR/STTR funding can be critical early-stage funding for highreward concepts. Missouri funding per \$1 million in GDP averaged less than the national average and ranked 26th amongst other states. This was a significant improvement from 32nd in last year's rankings. Helping local startups apply and receive SBIR/STTR funding can lead to critical early-stage funding for high-reward concepts.



SBIR and STTR Funding Per \$1 Million of GDP, 2018–2023

Source: EL calculations based on SBIR (2024) and BEA (2024)

Entrepreneurs are the lifeblood of a knowledge-based economy. Each year the economy is replenished and reenergized by entrepreneurial activity. Businesses that originate in one location often look to grow and establish their roots in that same region. The U.S. Census Bureau tracks the number of companies entering and those who exit the market. The most recent data is available for the year 2022. Comparing the rates of entrance and exit can provide a measure of business dynamism. High dynamism fosters more competition, increases economic equality, and increases innovation. Most of the job growth in an economy comes from new businesses. Missouri ranked 43rd overall in this metric and lower than the national average. This was a drop in the 2022 ranking of 26th.



Business Opening vs Closing Rate, 2022

One of the essential components of infrastructure for a knowledge-based economy is a skilled labor force. Tech occupations often require STEM degrees for entry-level positions. In 2023, Missouri saw its students complete 12,755 education programs that were focused on STEM. The number of enrolled postsecondary students in each state standardizes this value. Missouri averaged about 40 completed STEM programs per one thousand students. This rate is higher than the national average and the state ranks 10th.



Completed STEM Education Programs Per 1,000 Enrolled Students, 2023

Source: EL calculations based on Lightcast 2024.4 and NCES (2023)

Over the past few years, many states have focused their efforts on growing the number of STEM students in their educational systems. The change rate of STEM program completions from 2018 to 2023 indicates that Missouri is increasing its STEM graduates. Missouri's STEM growth of 18 percent ranks the state 10th. This is a dramatic improvement from ranking 47th in last year's report.



Percent Change in STEM Education Program Completions, 2018–2023

Source: EL calculations based on Lightcast 2024.4

When online professional profiles for individuals who had received a STEM degree, award or certificate from a Missouri postsecondary institution were reviewed about 39 percent were currently working in Missouri. While this analysis of online profiles is not a total accounting of all the STEM graduates coming out from Missouri schools, it does provide some indication that the majority do not stay and work in the state. This highlights how connecting local postsecondary institutions with local employers can help expand the local tech labor pool. Recruiting former alumni from the state back to the tech sector is also a potential talent marketing strategy.



Current Location of STEM Program Completers from Missouri Schools

Students are looking to achieve their education with the lowest debt burden. Missouri tuition ranks in the middle of the pack at 32nd. The cost of \$12,354 is just slightly more expensive than the national average. One of the reasons tuition costs are rising across all states is that funding for higher education was reduced during the Great Recession. Tuition increases have not been able to offset decreases in funding, resulting in reduced offerings at colleges and reduced research faculty. Missouri ranked 30th in this measure in last year's report, indicating that the state's tuition is becoming less competitive with other states.

Missouri's funding for postsecondary education is also becoming less competitive. The state ranked 13th in the previous year's report and fell to 27th in funding per student. With this low level of funding, in-state tuition could continue to increase and thus threaten the local talent pipeline. Lower levels of postsecondary funding can also impact the number of college offerings and innovative faculty research.



Source: College Board (2024)

Average In-State Tuition, 2024–2025



State Investment in Higher Education Per FTE Student, 2023

High-speed broadband internet is a priority for many states and a good indicator of connectivity for a knowledge economy. Access is the first step in ensuring everyone can be plugged into the information economy. Research shows that 14.7 percent of Missouri's population did not have access to high-speed broadband in 2024. The state ranks in the bottom third of the country at 37th place.



Percentage of Population Without Access to High-Speed Broadband, 2024

Broadband availability must be paired with adoption by communities to ensure that all households are connected to the internet. Research has shown that adoption has a stronger link to economic benefit than broadband availability. The central piece to adoption is affordability. Affordable plans were defined as under \$60 per month in 2024. About 31.3 percent of Missourians do not have access to high-speed broadband at an affordable price. Missouri ranks even lower than regular broadband access at 42nd when affordability is accessed. This indicates broadband pricing is making adoption difficult for many in the state.

Percentage of Population Without Access to Affordable Broadband, 2024



Another measure of adoption is from Census Bureau surveys that measure the number of households that have internet subscription services. In Missouri, 9.1 percent of the population is estimated to lack an internet subscription; this ranks 39th in the nation. While Missouri ranks below the national average, the value has improved from 11.3 percent in 2021.



Percentage of Households Without an Internet Subscription, 2023

Source: US Census Bureau (2024)

High-speed broadband can help connect rural workers and others to the knowledge-based economy. When high-speed broadband is available more workers can work from home. This allows the tech workforce to expand. People who might not have been able to participate in the workforce, like those with disabilities, are now able to access jobs via remote work. In 2023, about 12.5 percent of Missouri's workers worked from home.



Percentage of Workers Working From Home, 2023

Missouri has attracted many new residents to the state in recent years. One reason for this growth may be the lower cost of living in the state. The cost-of-living index for Missouri was the 2nd lowest in the country. Housing prices rose sharply in recent years and that has put increasing pressure on affordability in many markets.



Cost of Living Index, 2023

Source: Lightcast 2024.4

Missouri, however, has the 5th lowest percent of households considered housing burdened (paying more than 30 percent of household income on housing). This is a further improvement from last year's ranking of 9th. Missouri's housing prices have increased like most areas across the country, but at levels still well below the national average. Affordability is an asset that Missouri can use to help recruit talent to the state.



Share of Housing Burdened Household, 2023

In this year's report several business climate and workforce metrics were added to the tech infrastructure section. A friendly business climate is crucial in states where the tech sector is prominent, as supportive policies and incentives can attract high-growth firms, skilled talent, and venture capital. By fostering a competitive regulatory and tax environment, the state enhances its appeal as a hub for innovation.



Top States for Business Rankings (2024)

CNBC ranked Missouri as the 18th best state for doing business. CNBC's ranking includes several factors including infrastructure, workforce, education, quality of life, and others. In their sub-ranking for the cost of doing business, Missouri ranked 8th. The CNBC cost of doing business sub-ranking includes business costs like wages, taxes, utilities, insurance, and commercial real estate. Looking specifically at the effective business tax rate, Missouri tied for the 4th lowest rate in 2023. This was a decline in the rankings from the lowest effective business tax rate in 2022, but the state remains competitive in this factor. Competitive tax rates can help recruit new businesses and retain existing companies in the state.



Total Effective State Business Tax, 2023

Source: Council on State Taxation (2024)

Foreign direct investment (FDI) was measured to understand the state's global competitiveness. FDI into the state can bring capital and new technologies and expand the region's tech ecosystem. The most recent data is from 2021, when 4.3 percent of all employment in the state was a result of foreign-based companies. Missouri's level of FDI is right on par with the national average and ranks 23rd in the US.





As the workforce continues to be a key challenge, specific data that influences the size of the talent pool for the state were measured. Migration into the state can increase the size of the workforce. As mentioned previously in this report, Missouri's migration has increased in recent years. The state's average annual migration rate from 2020 to 2022 was 0.2 percent and ranked 20th in the country. Migration patterns, particularly in recent years, have followed trends in state taxation, albeit with outliers. States with the lowest income taxes tended to gain the most new residents, but low personal taxes did not guarantee high levels of migration to the state. Missouri's average personal taxes per person during this timeframe were 23rd lowest.



Post Pandemic Domestic Migration vs. State and Personal Taxation

Source: EL calculations based on IRS (2024) and BEA (2024)

Note: The tax per capita value includes state and local taxes on income, personal property, motor vehicle licenses, and other taxes on personal licenses by US residents. the figure does not include federal taxes or sales, residential property, or production activity taxes.

When the average income of those moving into the state is compared to the income of those moving out, Missouri domestic migrants tend to have lower levels of wealth than those who are moving out of the state. The income change is a net loss in the state and ranks 32nd nationwide. Attracting wealth to the region can help create a tech ecosystem and fund innovation.



Net Migration Income Change per Capita, 2020-2023

Migration is only a part of the workforce size equation. Missouri's working-age population is predicted to grow in the next ten years at a rate of 1.3 percent. This is the 39th-highest rate in the nation. While below the national average, the state's working-age population growth is not trending as negatively as in other states. Maintaining a growing working-age population helps the state remain competitive in today's talent wars.



Projected Working Age (25 to 64) Population Change, 2024-2034

From 2021 to 2024, Missouri utilized H1-B visas at a lower rate than the national average. The state ranked in the middle of the pack at 20th.





Source: EL calculations based on US Citizenship and Immigration Services and Lightcast 2024.4

Total Technology Industry 6-digit NAICS Code Breakdown

NAICS	NAICS Industry	Super Sub- Category	Sub-Category	Manufacturing or Service
325411	Medicinal and Botanical Manufacturing	Life Sciences Manufacturing	Life Sciences	Manufacturing
325412	Pharmaceutical Preparation Manufacturing	Life Sciences Manufacturing	Life Sciences	Manufacturing
325413	In-Vitro Diagnostic Substance Manufacturing	Life Sciences Manufacturing	Life Sciences	Manufacturing
325414	Biological Product (except Diagnostic) Manufacturing	Life Sciences Manufacturing	Life Sciences	Manufacturing
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	Life Sciences Manufacturing	Life Sciences	Manufacturing
334516	Analytical Laboratory Instrument Manufacturing	Life Sciences Manufacturing	Life Sciences	Manufacturing
334517	Irradiation Apparatus Manufacturing	Life Sciences Manufacturing	Life Sciences	Manufacturing
339112	Surgical and Medical Instrument Manufacturing	Life Sciences Manufacturing	Life Sciences	Manufacturing
339113	Surgical Appliance and Supplies Manufacturing	Life Sciences Manufacturing	Life Sciences	Manufacturing
339114	Dental Equipment and Supplies Manufacturing	Life Sciences Manufacturing	Life Sciences	Manufacturing
541330	Engineering Services	Engineering, Environmental and Clean Tech	Life Sciences	Services
541380	Testing Laboratories	Research and Development and Testing	Life Sciences	Services
541690	Other Scientific and Technical Consulting Services	Research and Development and Testing	Life Sciences	Services
541713	Research and Development in Nanotechnology	Research and Development and Testing	Life Sciences	Services
541714	Research and Development in Biotechnology (except Nanobiotechnology)	Research and Development and Testing	Life Sciences	Services
541715	Research and Development in the Physical, Engineering and Life Sciences (except Nanotechnology and Biotechnology)	Research and Development and Testing	Life Sciences	Services
333242	Semiconductor Machinery Manufacturing	Electronics Hardware	IT	Manufacturing
334111	Electronic Computer Manufacturing	Electronics Hardware	IT	Manufacturing
334112	Computer Storage Device Manufacturing	Electronics Hardware	IT	Manufacturing
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing	Electronics Hardware	IT	Manufacturing

NAICS	NAICS Industry	Super Sub- Category	Sub-Category	Manufacturing or Service
334210	Telephone Apparatus Manufacturing	Electronics Hardware	IT	Manufacturing
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	Electronics Hardware	IT	Manufacturing
334290	Other Communications Equipment Manufacturing	Electronics Hardware	IT	Manufacturing
334310	Audio and Video Equipment Manufacturing	Electronics Hardware	IT	Manufacturing
334412	Bare Printed Circuit Board Manufacturing	Electronics Hardware	IT	Manufacturing
334413	Semiconductor and Related Device Manufacturing	Electronics Hardware	IT	Manufacturing
334416	Capacitor, Resistor, Coil, Transformer and Other Inductor Manufacturing	Electronics Hardware	IT	Manufacturing
334417	Electronic Connector Manufacturing	Electronics Hardware	IT	Manufacturing
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	Electronics Hardware	IT	Manufacturing
334419	Other Electronic Component Manufacturing	Electronics Hardware	IT	Manufacturing
334511	Search, Detection, Navigation, Guidance, Aeronautical and Nautical System and Instrument Manufacturing	Electronics Hardware	IT	Manufacturing
334519	Other Measuring and Controlling Device Manufacturing	Electronics Hardware	IT	Manufacturing
335921	Fiber Optic Cable Manufacturing	Electronics Hardware	IT	Manufacturing
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing	Electronics Hardware	IT	Manufacturing
513210	Software Publishers	Software	IT	Services
516210	Media Streaming Distribution Services, Social Networks and Other Media Networks and Content Providers	Internet, Social Media and Telecom	IT	Services
517111	Wired Telecommunications Carriers	Internet, Social Media and Telecom	IT	Services
517112	Wireless Telecommunications Carriers (except Satellite)	Internet, Social Media and Telecom	IT	Services
517121	Telecommunications Resellers	Internet, Social Media and Telecom	IT	Services
517410	Satellite Telecommunications	Internet, Social Media and Telecom	IT	Services
517810	All Other Telecommunications	Internet, Social Media and Telecom	IT	Services
518210	Data Processing, Hosting and Related Services	Internet, Social Media and Telecom	IT	Services

NAICS	NAICS Industry	Super Sub- Category	Sub-Category	Manufacturing or Service
519290	Web Search Portals and All Other Information Services	Internet, Social Media and Telecom	IT	Services
541511	Custom Computer Programming Services	Software	IT	Services
541512	Computer Systems Design Services	Software	IT	Services
541513	Computer Facilities Management Services	Software	IT	Services
541519	Other Computer Related Services	Software	IT	Services
221310	Water Supply and Irrigation Systems	Engineering, Environmental and Clean Tech	Environmental Technology	Services
221320	Sewage Treatment Facilities	Remediation and Waste Management	Environmental Technology	Services
221330	Steam and Air-Conditioning Supply	Engineering, Environmental and Clean Tech	Environmental Technology	Services
334512	Automatic Environmental Control Manufacturing for Residential, Commercial and Appliance Use	Engineering, Environmental and Clean Tech	Environmental Technology	Manufacturing
334513	Instruments and Related Products Manufacturing for Measuring, Displaying and Controlling Industrial Process Variables	Engineering, Environmental and Clean Tech	Environmental Technology	Manufacturing
334514	Totalizing Fluid Meter and Counting Device Manufacturing	Engineering, Environmental and Clean Tech	Environmental Technology	Manufacturing
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	Engineering, Environmental and Clean Tech	Environmental Technology	Manufacturing
335910	Battery Manufacturing	Engineering, Environmental and Clean Tech	Environmental Technology	Manufacturing
541620	Environmental Consulting Services	Engineering, Environmental and Clean Tech	Environmental Technology	Services
562111	Solid Waste Collection	Remediation and Waste Management	Environmental Technology	Services
562112	Hazardous Waste Collection	Remediation and Waste Management	Environmental Technology	Services
562119	Other Waste Collection	Remediation and Waste Management	Environmental Technology	Services
562211	Hazardous Waste Treatment and Disposal	Remediation and Waste Management	Environmental Technology	Services
562212	Solid Waste Landfill	Remediation and Waste Management	Environmental Technology	Services
562213	Solid Waste Combustors and Incinerators	Remediation and Waste Management	Environmental Technology	Services
562219	Other Nonhazardous Waste Treatment and Disposal	Remediation and Waste Management	Environmental Technology	Services
562910	Remediation Services	Remediation and Waste Management	Environmental Technology	Services

NAICS	NAICS Industry	Super Sub-	Sub-Catagory	Manufacturing
NAICS		Category	Sub-Calegory	or Service
562920	Materials Recovery Facilities	Remediation and Waste Management	Environmental Technology	Services
562991	Septic Tank and Related Services	Remediation and Waste Management	Environmental Technology	Services
562998	All Other Miscellaneous Waste Management Services	Remediation and Waste Management	Environmental Technology	Services
211120	Crude Petroleum Extraction	Other Energy and Power Generation	Energy Technology	Services
211130	Natural Gas Extraction	Other Energy and Power Generation	Energy Technology	Services
212112	Underground Coal Mining	Other Energy and Power Generation	Energy Technology	Services
212114	Surface Coal Mining	Other Energy and Power Generation	Energy Technology	Services
213111	Drilling Oil and Gas Wells	Other Energy and Power Generation	Energy Technology	Services
213112	Support Activities for Oil and Gas Operations	Other Energy and Power Generation	Energy Technology	Services
213113	Support Activities for Coal Mining	Other Energy and Power Generation	Energy Technology	Services
221111	Hydroelectric Power Generation	Other Energy and Power Generation	Energy Technology	Services
221112	Fossil Fuel Electric Power Generation	Other Energy and Power Generation	Energy Technology	Services
221113	Nuclear Electric Power Generation	Other Energy and Power Generation	Energy Technology	Services
221114	Solar Electric Power Generation	Renewable Energy	Energy Technology	Services
221115	Wind Electric Power Generation	Renewable Energy	Energy Technology	Services
221116	Geothermal Electric Power Generation	Renewable Energy	Energy Technology	Services
221117	Biomass Electric Power Generation	Renewable Energy	Energy Technology	Services
221118	Other Electric Power Generation	Renewable Energy	Energy Technology	Services
221121	Electric Bulk Power Transmission and Control	Other Energy and Power Generation	Energy Technology	Services
221122	Electric Power Distribution	Other Energy and Power Generation	Energy Technology	Services
221210	Natural Gas Distribution	Other Energy and Power Generation	Energy Technology	Services
324110	Petroleum Refineries	Other Energy and Power Generation	Energy Technology	Services

Total Technology Industry 6-digit NAICS Code Breakdown

SOC Code	Occupation Description
11-3021	Computer and Information Systems Managers
11-9041	Architectural and Engineering Managers
13-1081	Logisticians
13-1082	Project Management Specialists
13-1111	Management Analysts
13-1141	Compensation, Benefits and Job Analysis Specialists
13-1161	Market Research Analysts and Marketing Specialists
13-1199	Business Operations Specialists, All Other
13-2031	Budget Analysts
13-2041	Credit Analysts
13-2051	Financial and Investment Analysts
13-2054	Financial Risk Specialists
13-2099	Financial Specialists, All Other
15-1211	Computer Systems Analysts
15-1212	Information Security Analysts
15-1221	Computer and Information Research Scientists
15-1231	Computer Network Support Specialists
15-1232	Computer User Support Specialists
15-1241	Computer Network Architects
15-1242	Database Administrators
15-1243	Database Architects
15-1244	Network and Computer Systems Administrators
15-1251	Computer Programmers
15-1252	Software Developers
15-1253	Software Quality Assurance Analysts and Testers
15-1254	Web Developers
15-1255	Web and Digital Interface Designers
15-1299	Computer Occupations, All Other
15-2011	Actuaries

Appendix

Appendix

SOC Code	Occupation Description
15-2021	Mathematicians
15-2031	Operations Research Analysts
15-2041	Statisticians
15-2051	Data Scientists
15-2099	Mathematical Science Occupations, All Other
17-1021	Cartographers and Photogrammetrists
17-2011	Aerospace Engineers
17-2021	Agricultural Engineers
17-2031	Bioengineers and Biomedical Engineers
17-2041	Chemical Engineers
17-2051	Civil Engineers
17-2061	Computer Hardware Engineers
17-2071	Electrical Engineers
17-2072	Electronics Engineers, Except Computer
17-2081	Environmental Engineers
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors
17-2112	Industrial Engineers
17-2121	Marine Engineers and Naval Architects
17-2131	Materials Engineers
17-2141	Mechanical Engineers
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
17-2161	Nuclear Engineers
17-2171	Petroleum Engineers
17-2199	Engineers, All Other
17-3021	Aerospace Engineering and Operations Technologists and Technicians
17-3022	Civil Engineering Technologists and Technicians
17-3023	Electrical and Electronic Engineering Technologists and Technicians
17-3024	Electro-Mechanical and Mechatronics Technologists and Technicians
17-3025	Environmental Engineering Technologists and Technicians
17-3026	Industrial Engineering Technologists and Technicians

SOC Code	Occupation Description
17-3027	Mechanical Engineering Technologists and Technicians
17-3028	Calibration Technologists and Technicians
17-3029	Engineering Technologists and Technicians, Except Drafters, All Other
17-3031	Surveying and Mapping Technicians
19-1021	Biochemists and Biophysicists
19-1031	Conservation Scientists
19-1042	Medical Scientists, Except Epidemiologists
19-1099	Life Scientists, All Other
19-2021	Atmospheric and Space Scientists
19-2031	Chemists
19-2032	Materials Scientists
19-2041	Environmental Scientists and Specialists, Including Health
19-2042	Geoscientists, Except Hydrologists and Geographers
19-2043	Hydrologists
19-2099	Physical Scientists, All Other
19-4012	Agricultural Technicians
19-4013	Food Science Technicians
19-4021	Biological Technicians
19-4031	Chemical Technicians
19-4042	Environmental Science and Protection Technicians, Including Health
19-4043	Geological Technicians, Except Hydrologic Technicians
19-4044	Hydrologic Technicians
19-4051	Nuclear Technicians
43-9111	Statistical Assistants
49-2011	Computer, Automated Teller and Office Machine Repairers
51-9141	Semiconductor Processing Technicians





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