



# Industry Spotlight

# Autonomous Vehicles

Polk County, Florida



*Polk County's Economic  
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# Spotlight Summary

Autonomous Vehicles  
Polk County, Florida – 2022Q4

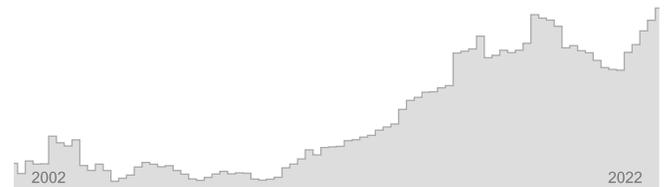
## EMPLOYMENT



**1,875**

Regional employment / 7,494,339 in the nation

## WAGES

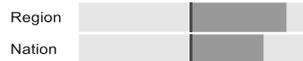


**\$67,872**

Avg Wages per Worker / \$132,087 in the nation

**2.7%** ↑

Avg Ann % Change Last 10 Years / +2.0% in the U.S.



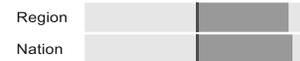
**0.7%**

% of Total Employment / 4.6% in the U.S.



**3.5%** ↑

Avg Ann % Change Last 10 Years / +3.6% in the U.S.



## TOP OCCUPATION GROUPS



## TOP INDUSTRIES

Avg Ann % Change in Employment, Last 10 Years

**4.0%** ↑



Computer Systems Design and Related Services

**2.7%** ↑



Motor Vehicle Parts Manufacturing

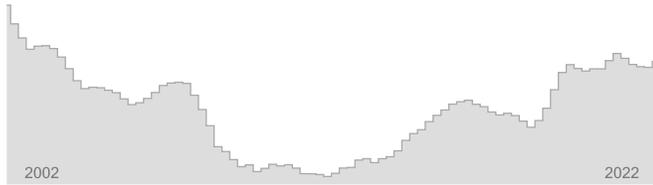
**1.3%** ↑



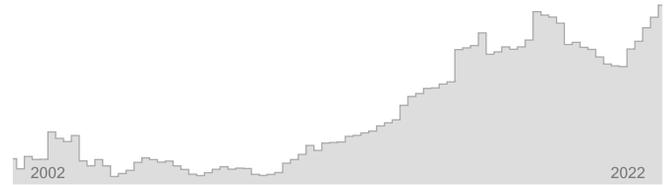
Motor Vehicle Body and Trailer Manufacturing

# Industry Snapshot

## EMPLOYMENT



## WAGES



4-Digit Industry	Empl	Avg Ann Wages	LQ	5yr History	Annual Demand	Forecast Ann Growth
Computer Systems Design and Related Services	759	\$86,316	0.17		84	3.0%
Motor Vehicle Parts Manufacturing	424	\$41,279	0.45		54	1.8%
Motor Vehicle Body and Trailer Manufacturing	130	\$57,217	0.45		17	2.1%
Scientific Research and Development Services	128	\$61,345	0.08		14	2.4%
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	113	\$74,981	0.16		12	1.7%
Motor Vehicle Manufacturing	38	\$37,905	0.08		5	2.2%
Communications Equipment Manufacturing	25	\$59,983	0.17		3	1.5%
Semiconductor and Other Electronic Component Manufacturing	23	\$41,052	0.03		3	1.9%
Aerospace Product and Parts Manufacturing	20	\$54,849	0.02		2	1.5%
Ship and Boat Building	16	\$60,399	0.05		2	1.2%
Remaining Component Industries	19	\$53,455	0.08		1	1.4%
<b>Autonomous Vehicles</b>	<b>1,875</b>	<b>\$67,872</b>	<b>0.15</b>		<b>219</b>	<b>2.3%</b>

 Employment is one of the broadest and most timely measures of a region's economy. Fluctuations in the number of jobs shed light on the health of an industry. A growing employment base creates more opportunities for regional residents and helps a region grow its population.

 Since wages and salaries generally compose the majority of a household's income, the annual average wages of a region affect its average household income, housing market, quality of life, and other socioeconomic indicators.

# Staffing Pattern



6-digit Occupation	Empl	Avg Ann Wages	Annual Demand
Software Developers	251	\$98,300	26
Team Assemblers	154	\$37,900	20
Computer User Support Specialists	50	\$48,600	6
Computer Systems Analysts	42	\$102,000	4
Software Quality Assurance Analysts and Testers	36	\$66,500	4
Computer and Information Systems Managers	35	\$141,400	4
General and Operations Managers	35	\$133,300	4
Welders, Cutters, Solderers, and Brazers	35	\$38,100	5
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	34	\$83,200	5
Electrical, Electronic, and Electromechanical Equipment Assemblers, Except Coil Winders, Tapers, and Finishers	32	\$36,200	5
Remaining Component Occupations	957	\$67,600	123
<b>Total</b>	<b>1,662</b>		

 The mix of occupations points to the ability of a region to support an industry and its flexibility to adapt to future demand. Industry wages are a component of the cost of labor for regional employers.

# Employment Distribution by Type

The table below shows the employment mix by ownership type for Autonomous Vehicles for Polk County, Florida. Four of these ownership types — federal, state, and local government and the private sector — together constitute “Covered Employment” (employment covered by the Unemployment Insurance programs of the United States and reported via the Quarterly Census of Employment and Wages).

“Self-Employment” refers to unincorporated self-employment and represents workers whose primary job is self-employment (that is, these data do not include workers whose primary job is a wage-and-salary position that is supplemented with self-employment).



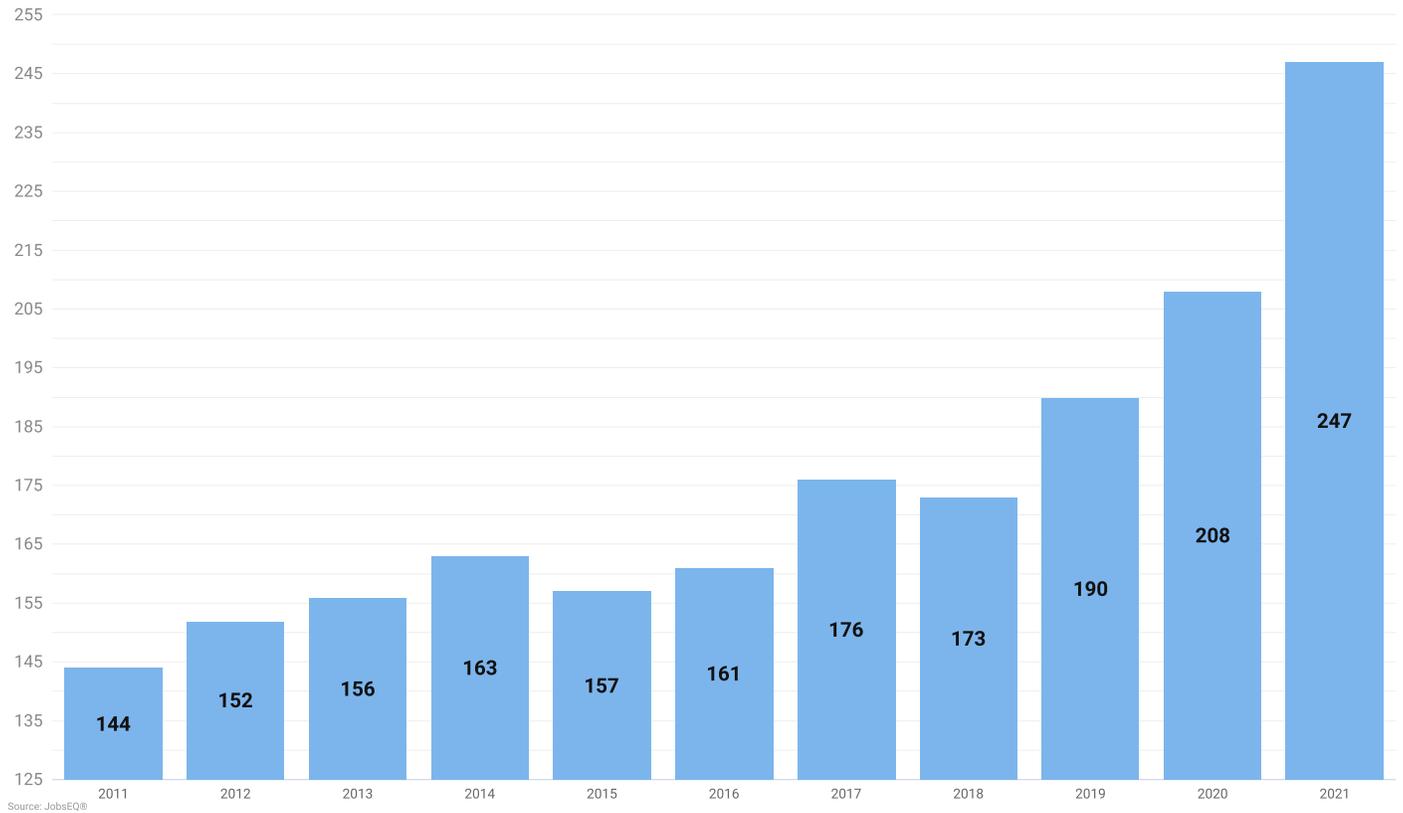
	Empl	%
Private	1,665	88.8%
Self-Employment	210	11.2%

Source: JobsEQ®

 Strong entrepreneurial activity is indicative of growing industries. Using self-employment as a proxy for entrepreneurs, a higher share of self-employed individuals within a regional industry points to future growth.

# Establishments

In 2021, there were 247 Autonomous Vehicles establishments in Polk County, Florida (per covered employment establishment counts), an increase from 144 establishments ten years earlier in 2011.

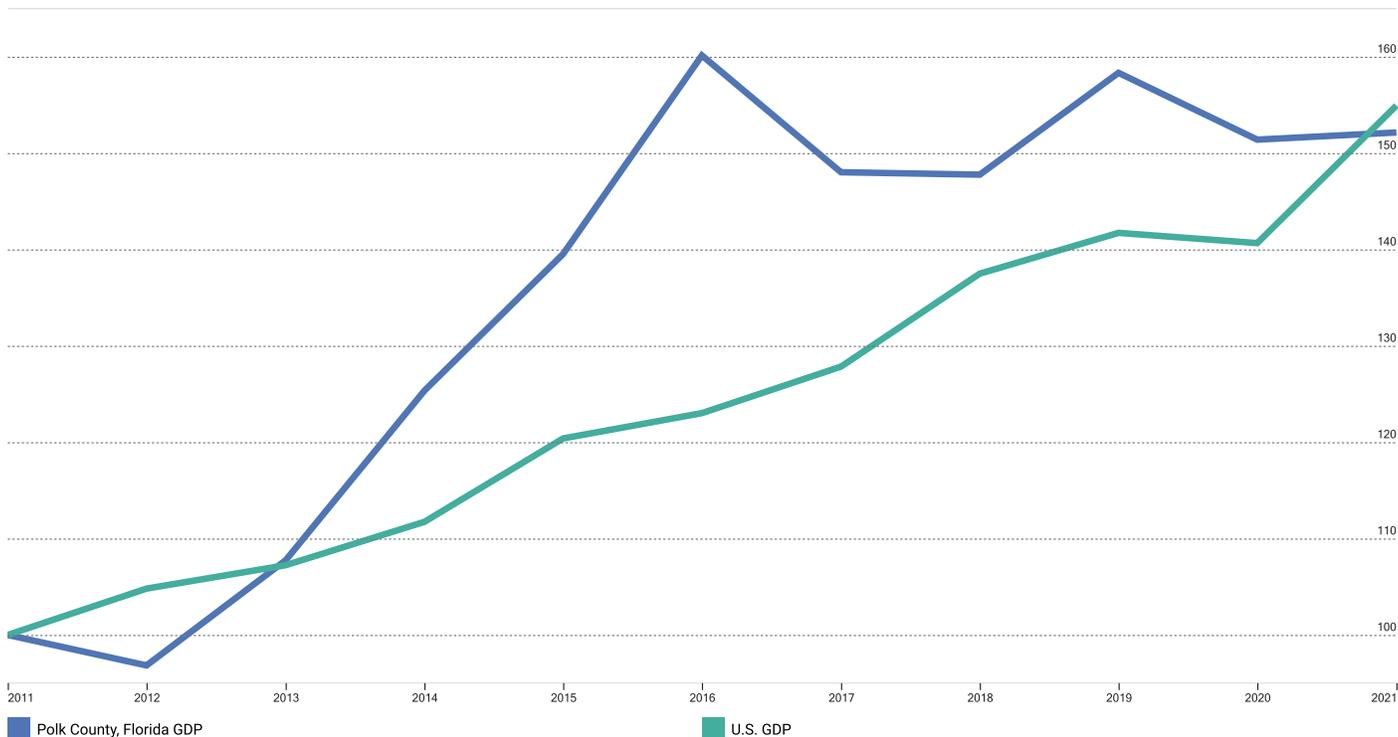


 New business formations are an important source of job creation in a regional economy, spurring innovation and competition, and driving productivity growth. Establishment data can provide an indicator of growth in businesses by counting each single location (such as a factory or a store) where business activity takes place, and with at least one employee.

# GDP & Productivity

In 2021, Autonomous Vehicles produced \$0.2 billion in GDP for Polk County, Florida.

GDP: Indexed 2011 = 100



## 0.6 %

Industry Share of Total GDP /  
**7.0 %** in the nation



## 4.3 % ↑

Avg Ann % Change Last 10 Yrs /  
**4.5 %** in the nation



## \$299k

Output per Worker /  
**\$471k** in the nation



💡 Gross domestic product (GDP) is the most comprehensive measure of regional economic activity, and an industry's contribution to GDP is an important indicator of regional industry strength. It is a measure of total value-added to a regional economy in the form of labor income, proprietor's income, and business profits, among others. GDP values shown on this page are nominal GDP data.

💡 Growth in productivity (output per worker) leads to increases in wealth and higher average standards of living in a region.

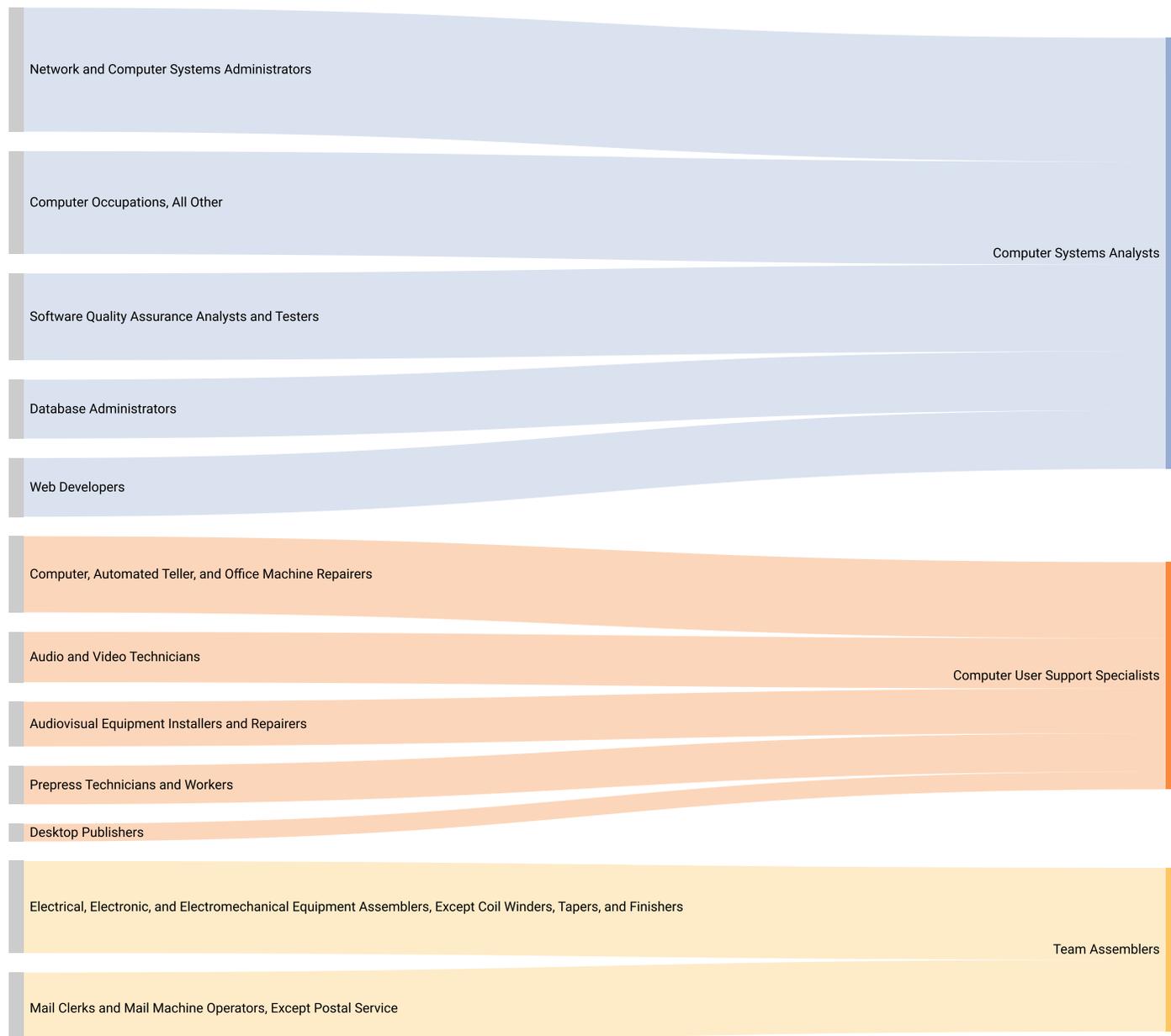
# Supply Chain: Top Suppliers

As of 2022Q4, Autonomous Vehicles in Polk County, Florida are estimated to make \$233.1 million in annual purchases from suppliers in the United States with about 50% or \$116.7 million of these purchases being made from businesses located in Polk County, Florida.

<b>4-digit Supplier Industries</b>	<b>Purchases from In-Region (\$M)</b>	<b>Purchases from Out-of-Region (\$M)</b>
Motor Vehicle Parts Manufacturing	\$21.9	\$10.1
Iron and Steel Mills and Ferroalloy Manufacturing	\$12.6	<\$0.1
Management of Companies and Enterprises	\$8.1	\$0.4
Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	\$4.1	\$2.8
Engine, Turbine, and Power Transmission Equipment Manufacturing	\$1.9	\$4.9
Remaining Supplier Industries	\$68.2	\$98.1
<b>Total</b>	<b>\$116.7</b>	<b>\$116.4</b>

 Supplier-buyer networks can indicate local linkages between industries, regional capacity to support growth in an industry, and potential leakage of sales out of the region.

# Sector Strategy Pathways



 The graphics on this page illustrate relationships and potential movement (from left to right) between occupations that share similar skill sets. Developing career pathways as a strategy promotes industry employment growth and workforce engagement.

# Postsecondary Programs Linked to Autonomous Vehicles

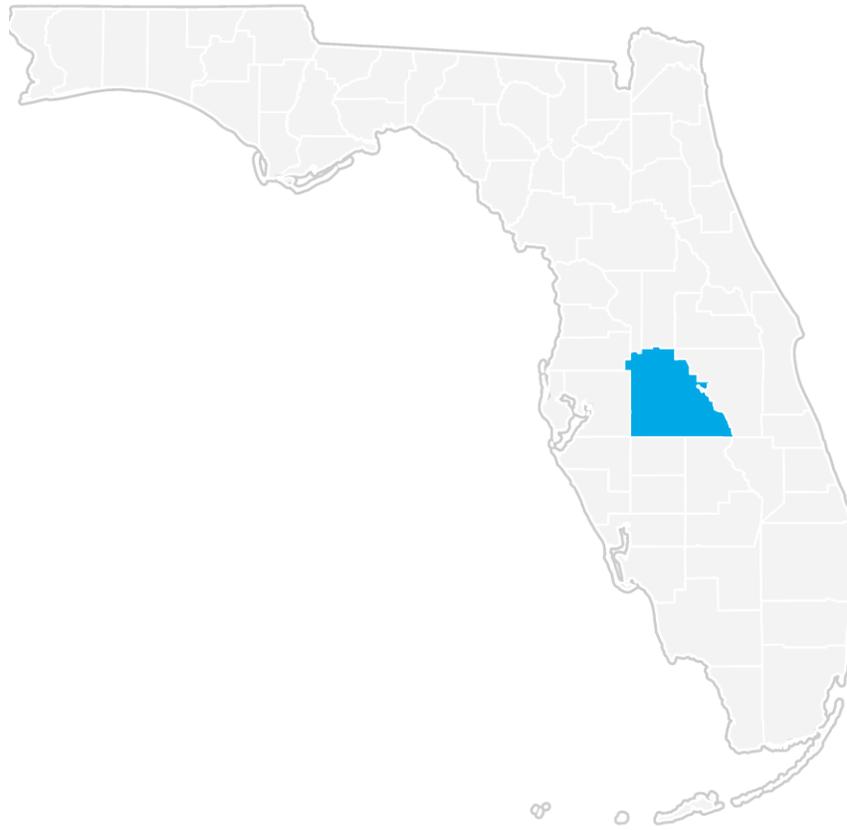
Program	Awards
<b>Florida Polytechnic University</b>	
Computer Engineering, General	39
Computer Science	65
Electrical and Electronics Engineering	15
Mechanical Engineering	66
<b>Polk State College</b>	
Manufacturing Engineering Technology/Technician	13
<b>Ridge Technical College</b>	
Welding Technology/Welder	15
<b>Southeastern University</b>	
Intercultural/Multicultural and Diversity Studies	4
<b>Traviss Technical College</b>	
Aircraft Powerplant Technology/Technician	16
Airframe Mechanics and Aircraft Maintenance Technology/Technician	21
Welding Technology/Welder	13

Source: [JobsEQ®](#)

 The number of graduates from postsecondary programs in the region identifies the pipeline of future workers as well as the training capacity to support industry demand.

 Among postsecondary programs at schools located in Polk County, Florida, the sampling above identifies those most linked to occupations relevant to Autonomous Vehicles. For a complete list see JobsEQ®, <http://www.chmuraecon.com/jobseq>

# Polk County, Florida Regional Map



# Data Notes

- Industry employment and wages (including total regional employment and wages) are as of 2022Q4 and are based upon BLS QCEW data, imputed by Chmura where necessary, and supplemented by additional sources including Census ZBP data. Employment forecasts are modeled by Chmura and are consistent with BLS national-level 10-year forecasts.
- Occupation employment is as of 2022Q4 and is based on industry employment and local staffing patterns calculated by Chmura and utilizing BLS OEWS data. Wages by occupation are as of 2022, utilizing BLS OEWS data and imputed by Chmura.
- GDP is derived from BEA data and imputations by Chmura. Productivity (output per worker) is calculated by Chmura using industry employment and wages as well as GDP and BLS output data. Supply chain modeling including purchases by industry are developed by Chmura.
- Postsecondary awards are per the NCES and are for the 2020-2021 academic year.
- Establishment counts are per the BLS QCEW data.
- Figures may not sum due to rounding.

# Industry Definition

**Autonomous Vehicles is defined as the following NAICS industries:**

<b>Code</b>	<b>Description</b>
3341	Computer and Peripheral Equipment Manufacturing
3342	Communications Equipment Manufacturing
3343	Audio and Video Equipment Manufacturing
3344	Semiconductor and Other Electronic Component Manufacturing
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing
3346	Manufacturing and Reproducing Magnetic and Optical Media
3361	Motor Vehicle Manufacturing
3362	Motor Vehicle Body and Trailer Manufacturing
3363	Motor Vehicle Parts Manufacturing
3364	Aerospace Product and Parts Manufacturing
3365	Railroad Rolling Stock Manufacturing
3366	Ship and Boat Building
3369	Other Transportation Equipment Manufacturing
5415	Computer Systems Design and Related Services
5417	Scientific Research and Development Services

# FAQ

## **What is (LQ) location quotient?**

Location quotient is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

## **What is annual demand?**

Annual demand is a of the sum of the annual projected growth demand and separation demand. Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. Growth demand is the increase or decrease of jobs expected due to expansion or contraction of the overall number of jobs.

## **What is the difference between industry wages and occupation wages?**

Industry wages and occupation wages are estimated via separate data sets, often the time periods being reported do not align, and wages are defined slightly differently in the two systems (for example, certain bonuses are included in the industry wages but not the occupation wages). It is therefore common that estimates of the average industry wages and average occupation wages in a region do not match exactly.