JOBSEQ

Industry Spotlight

Autonomous Vehicles

Polk County, Florida

CENTRAL FLORIDA DEVELOPMENT COUNCIL

Polk County's Economic Development Partnership

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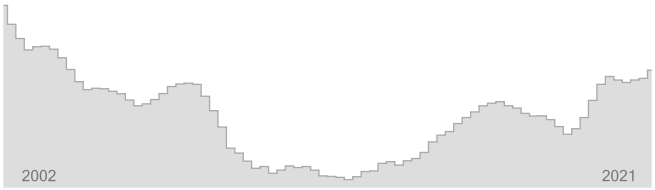
Spotlight Summary 3
Industry Snapshot 4
Staffing Pattern 5
Employment Distribution by Type 6
Establishments 7
GDP & Productivity 8
Supply Chain: Top Suppliers 9
Sector Strategy Pathways 10
Postsecondary Programs Linked to Autonomous Vehicles 11
Polk County, Florida Regional Map 12
Industry Definition 13
Data Notes 15
FAQ 15

Spotlight Summary

Autonomous Vehicles
Polk County, Florida – 2021Q2

EMPLOYMENT



1,842

Regional employment / **6,975,799** in the nation

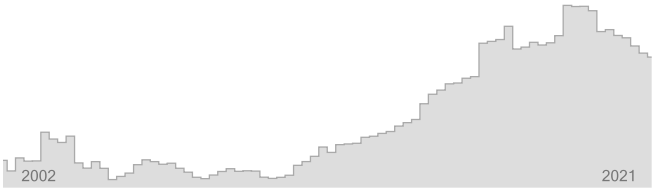
2.5% ↑

Avg Ann % Change Last 10 Years / **+1.7%** in the U.S.

0.7%

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

WAGES



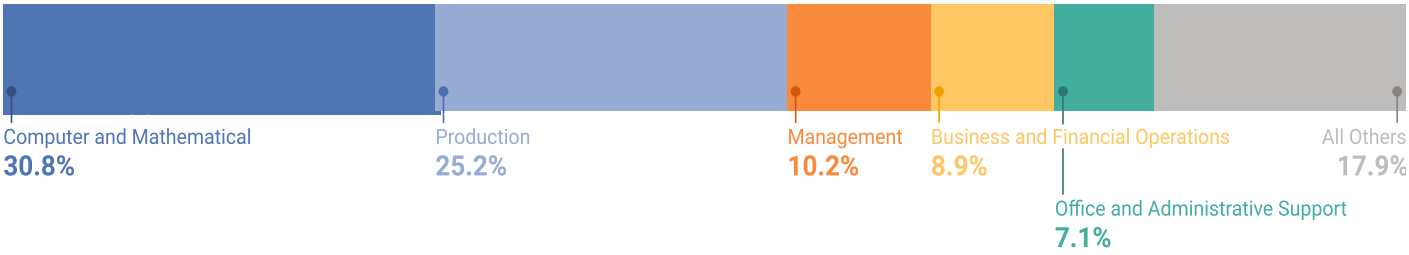
$59,399

Avg Wages per Worker / **$125,339** in the nation

2.7% ↑

Avg Ann % Change Last 10 Years / **+3.5%** in the U.S.

TOP OCCUPATION GROUPS



TOP INDUSTRIES

Avg Ann % Change in Employment, Last 10 Years

10.2 % ↑

Custom Computer Programming Services

77.4 % ↑

Motor Vehicle Metal Stamping

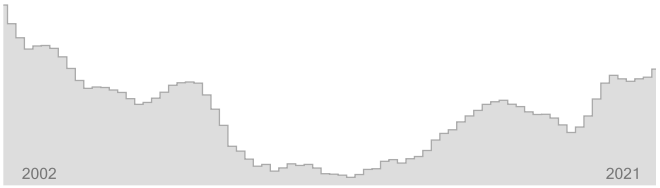
13.3 % ↑

Other Motor Vehicle Parts Manufacturing

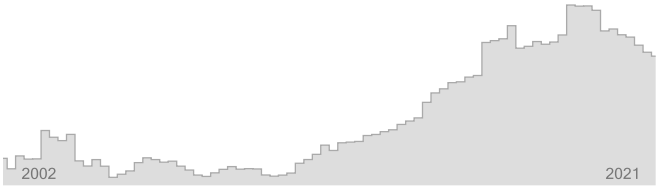
Source: JobsEQ®, http://www.chmuraecon.com/jobseq

Industry Snapshot

EMPLOYMENT



WAGES



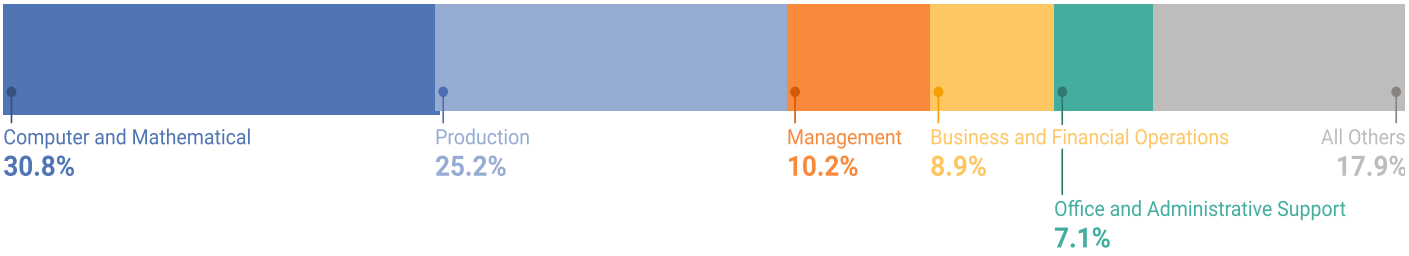
6-Digit Industry	Empl	Avg Ann Wages	LQ	5yr History	Annual Demand	Forecast Ann Growth
Custom Computer Programming Services	606	$71,115	0.35		68	3.5%
Motor Vehicle Metal Stamping	210	$30,313	1.56		26	1.9%
Other Motor Vehicle Parts Manufacturing	173	$50,484	0.70		21	1.9%
Computer Systems Design Services	153	$73,735	0.08		16	2.9%
Heavy Duty Truck Manufacturing	92	$33,456	1.61		12	2.1%
Other Computer Related Services	89	$84,384	0.41		10	3.5%
Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	79	$58,181	0.34		9	1.8%
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	51	$51,635	0.06		5	1.9%
Motor Home Manufacturing	41	$26,312	1.33		5	1.1%
Computer Facilities Management Services	24	$67,430	0.17		3	3.3%
Remaining Component Industries	165	$38,404	0.07		15	0.9%
Autonomous Vehicles	**1,842**	**$59,399**	**0.16**		**194**	**2.5%**

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.

Source: JobsEQ®, http://www.chmuraecon.com/jobseq

Staffing Pattern



6-digit Occupation	Empl	Avg Ann Wages	Annual Demand
Software Developers and Software Quality Assurance Analysts and Testers	183	$91,500	22
Team Assemblers	154	$37,400	20
Computer Systems Analysts	77	$82,600	8
Computer User Support Specialists	76	$56,600	10
Computer and Information Systems Managers	43	$136,200	5
Project Management Specialists and Business Operations Specialists, All Other	41	$80,300	6
Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	34	$34,400	5
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	33	$94,900	6
General and Operations Managers	32	$132,600	4
Computer Occupations, All Other	31	$69,700	3
Remaining Component Occupations	945	$63,000	122
Total	**1,648**		

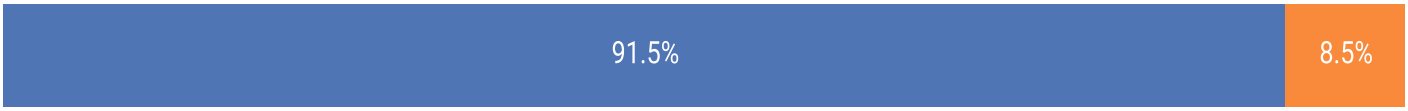
The mix of occupations points to the ability of a region to support an industry and its flexibility to adapt to future demand. Industry wages are a component of the cost of labor for regional employers.

Source: JobsEQ®, http://www.chmuraecon.com/jobseq

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).



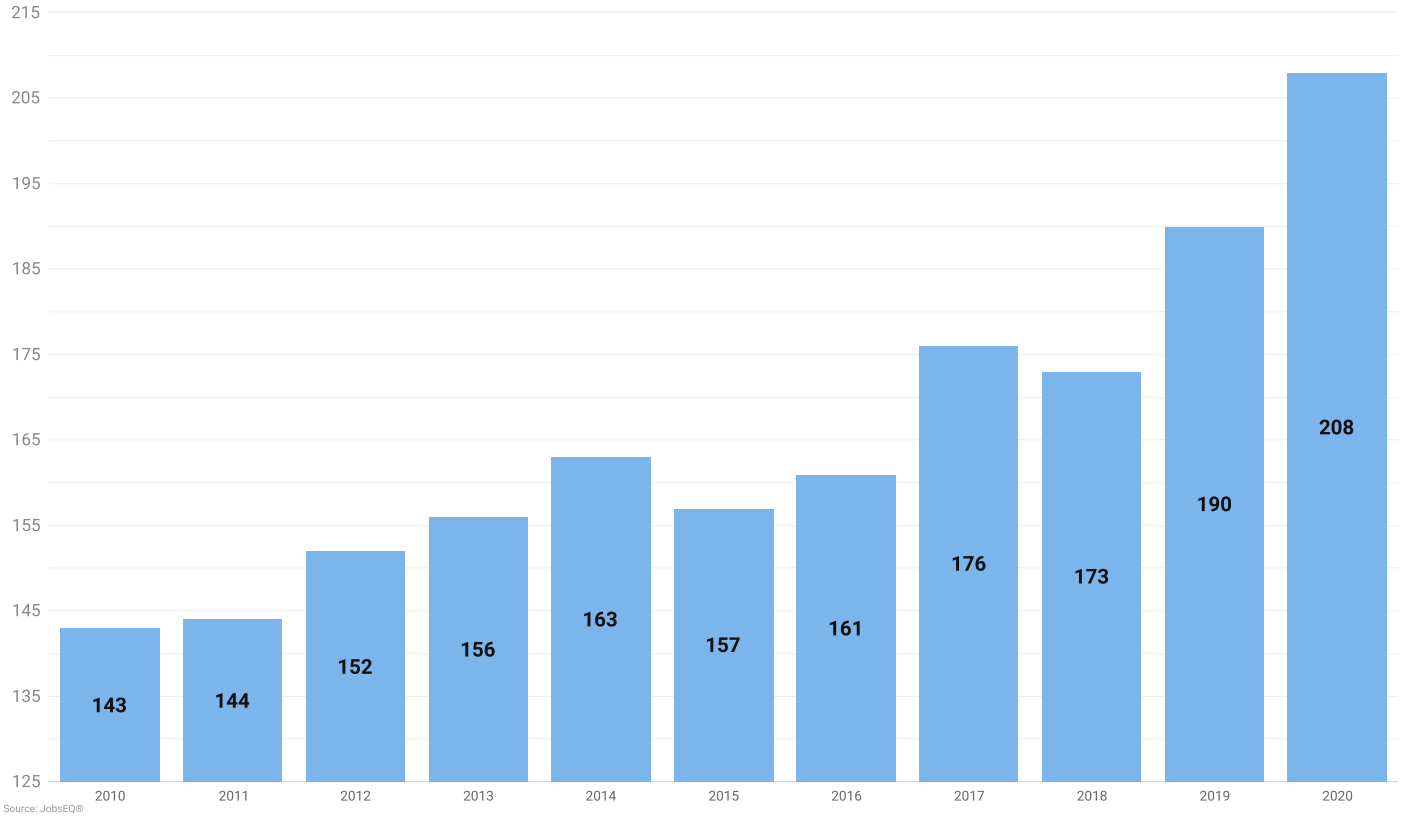
	Empl	%
Private	1,685	91.5%
Self-Employment	157	8.5%

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 2020, there were 208 Autonomous Vehicles establishments in Polk County, Florida (per covered employment establishment counts), an increase from 143 establishments ten years earlier in 2010.

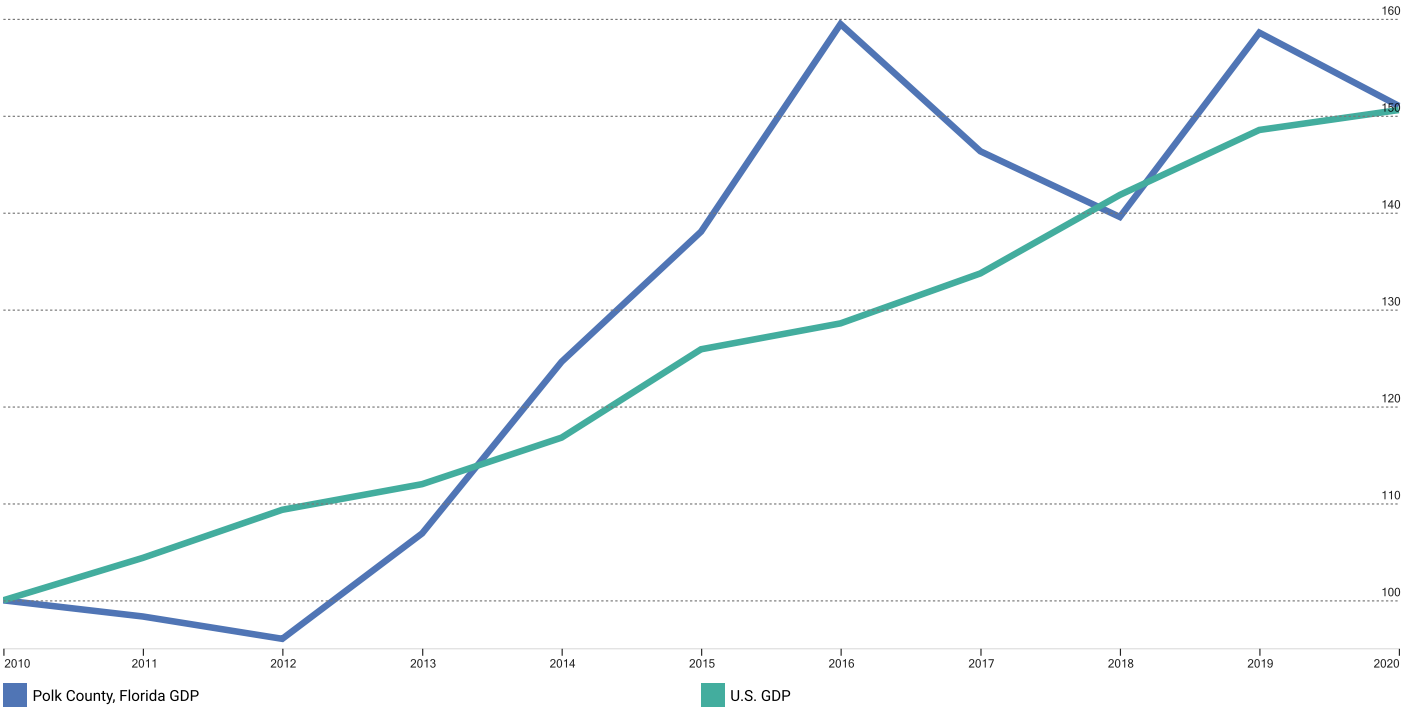


New business formations are an important source of job creation in a regional economy, spurring innovation and competition, and driving productivity growth. Establishment data can provide an indicator of growth in businesses by counting each single location (such as a factory or a store) where business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

GDP & Productivity

In 2020, Autonomous Vehicles produced $0.2 billion in GDP for Polk County, Florida.

GDP: Indexed 2010 = 100



0.7 %

Industry Share of Total GDP / **7.2 %** in the nation

4.2 %

Avg Ann % Change Last 10 Yrs / **4.2 %** in the nation

$284k

Output per Worker / **$423k** 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.

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

Supply Chain: Top Suppliers

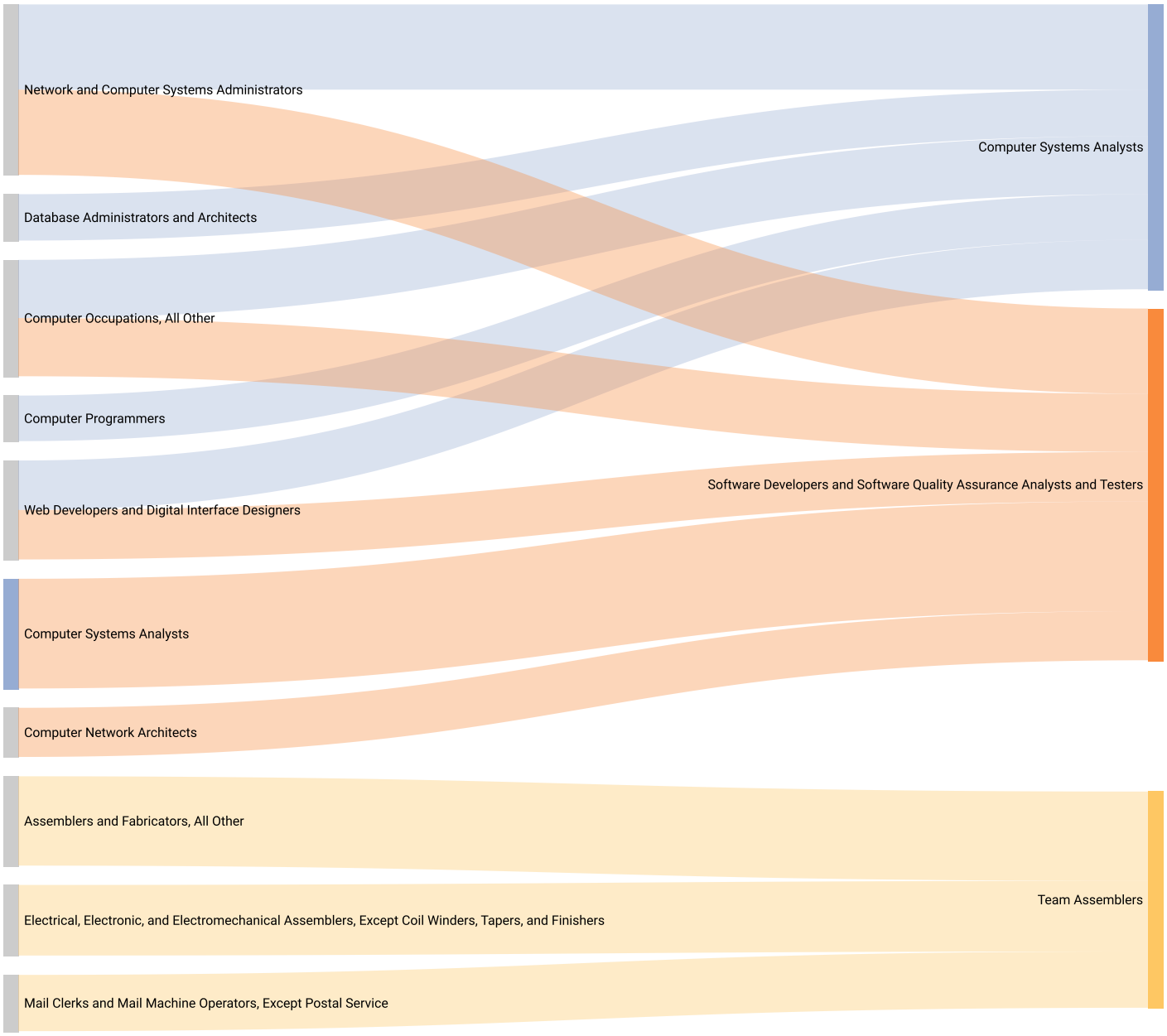
As of 2021Q2, Autonomous Vehicles in Polk County, Florida are estimated to make $328.4 million in annual purchases from suppliers in the United States with about 43% or $139.7 million of these purchases being made from businesses located in Polk County, Florida.

6-digit Supplier Industries	Purchases from In-Region ($000s)	Purchases from Out-of-Region ($000s)
Corporate, Subsidiary, and Regional Managing Offices	$18,809.0	$1,234.0
Iron and Steel Mills and Ferroalloy Manufacturing	$10,580.0	$820.0
Other Motor Vehicle Parts Manufacturing	$8,056.0	$2,369.0
Motor Vehicle Metal Stamping	$8,206.0	$1,088.0
Other Engine Equipment Manufacturing	<$0.1	$9,062.0
Remaining Supplier Industries	$94,015.0	$174,179.0
Total	**$139,666.0**	**$188,752.0**

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.

Source: JobsEQ®, http://www.chmuraecon.com/jobseq

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.

Source: JobsEQ®, http://www.chmuraecon.com/jobseq

Postsecondary Programs Linked to Autonomous Vehicles

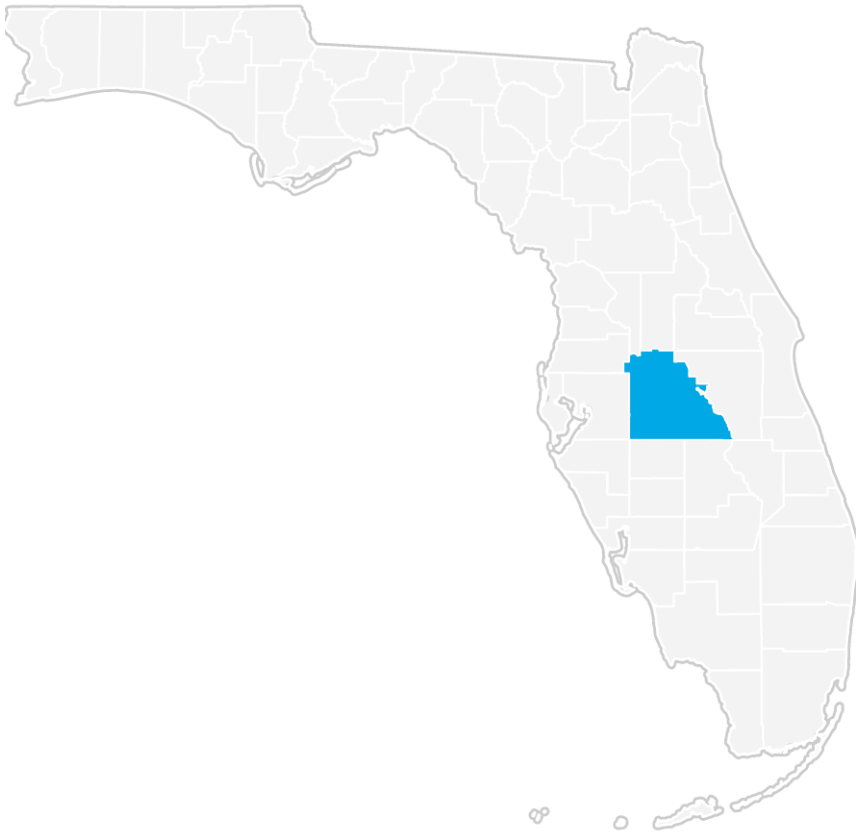
Program	Awards
Florida Polytechnic University	
Computer and Information Sciences, General	9
Computer Engineering, General	42
Electrical and Electronics Engineering	17
Mechanical Engineering	61
Florida Southern College	
Computer Science	10
Polk State College	
Engineering Technologies/Technicians, General	18
Network and System Administration/Administrator	17
Ridge Technical College	
Welding Technology/Welder	22
Traviss Technical College	
Computer Systems Networking and Telecommunications	13
Welding Technology/Welder	11

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



Source: JobsEQ®, http://www.chmuraecon.com/jobseq

Industry Definition

Autonomous Vehicles is defined as the following NAICS industries:

Code	Description
334111	Electronic Computer Manufacturing
334112	Computer Storage Device Manufacturing
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing
334210	Telephone Apparatus Manufacturing
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
334290	Other Communications Equipment Manufacturing
334310	Audio and Video Equipment Manufacturing
334412	Bare Printed Circuit Board Manufacturing
334413	Semiconductor and Related Device Manufacturing
334416	Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing
334417	Electronic Connector Manufacturing
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing
334419	Other Electronic Component Manufacturing
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables
334514	Totalizing Fluid Meter and Counting Device Manufacturing
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals
334516	Analytical Laboratory Instrument Manufacturing
334517	Irradiation Apparatus Manufacturing
334519	Other Measuring and Controlling Device Manufacturing
334613	Blank Magnetic and Optical Recording Media Manufacturing
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing
336111	Automobile Manufacturing
336112	Light Truck and Utility Vehicle Manufacturing
336120	Heavy Duty Truck Manufacturing
336211	Motor Vehicle Body Manufacturing
336212	Truck Trailer Manufacturing
336213	Motor Home Manufacturing
336214	Travel Trailer and Camper Manufacturing
336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing
336340	Motor Vehicle Brake System Manufacturing
336350	Motor Vehicle Transmission and Power Train Parts Manufacturing
336360	Motor Vehicle Seating and Interior Trim Manufacturing
336370	Motor Vehicle Metal Stamping
336390	Other Motor Vehicle Parts Manufacturing
336411	Aircraft Manufacturing
336412	Aircraft Engine and Engine Parts Manufacturing
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing
336414	Guided Missile and Space Vehicle Manufacturing
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing
336510	Railroad Rolling Stock Manufacturing
336611	Ship Building and Repairing

Autonomous Vehicles is defined as the following NAICS industries:

Code	Description
336612	Boat Building
336991	Motorcycle, Bicycle, and Parts Manufacturing
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing
336999	All Other Transportation Equipment Manufacturing
541511	Custom Computer Programming Services
541512	Computer Systems Design Services
541513	Computer Facilities Management Services
541519	Other Computer Related Services
541713	Research and Development in Nanotechnology
541714	Research and Development in Biotechnology (except Nanobiotechnology)
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)
541720	Research and Development in the Social Sciences and Humanities

Data Notes

- Industry employment and wages (including total regional employment and wages) are as of 2021Q2 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 2021Q2 and is based on industry employment and local staffing patterns calculated by Chmura and utilizing BLS OES data. Occupation wages are per the BLS OES data and are as of 2020.
- 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 2019-2020 academic year.
- Establishment counts are per the BLS QCEW data.
- Figures may not sum due to rounding.

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.