



## Data Analytics

April 2018

Prepared by the Los Angeles/Orange County Center of Excellence for  
Labor Market Research

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### Program Recommendation

This report was compiled by the Los Angeles/Orange County Center of Excellence (COE) to provide regional labor market data for the program recommendation of data analytics. This report intends to determine whether there is demand in the local labor market that is not being met by the supply from programs of study.

Based on the labor market supply and demand data, **there is an apparent need** for the data analytics program in Los Angeles County. Reasons include:

- In 2017, there were 3,845 job postings related to data analytics in Los Angeles County.
- Between 2014 and 2017, programs related to data analytics conferred an annual average of 197 community college awards (associate degrees and certificates).
- More than 65% of students conferring awards in programs related to data analytics (in the 2015-2016 academic year) have achieved employment within six months of graduating.

### The COE would especially like to highlight the following:

- While there were many job advertisements in 2017, the vast majority of job postings (**91%**) **specified a Bachelor's degree as the minimum education requirement.**
- A data analytics program in Los Angeles County could be a pathway for community college students in pursuit of a Bachelor's degree **OR** could equip 4-year graduates with the knowledge/skills needed to work as a data analyst.

## Occupation Codes and Descriptions

Currently, there is one occupation in the standard occupational classification (SOC) system related to data analytics, and four emerging occupations in the O\*NET database of occupational information.<sup>1</sup> The occupation titles, descriptions, and reported job titles are included in Exhibit 1.

**Exhibit 1 – Occupations, description, and sample job titles**

SOC Code	Title	Description	Sample of Reported Job Titles
15-1111.00	Computer and Information Research Scientists	Conduct research into fundamental computer and information science as theorists, designers, or inventors. Develop solutions to problems in the field of computer hardware and software.	Computer Scientist, Control System Computer Scientist, Scientific Programmer Analyst
15-1199.07	Data Warehousing Specialists	Design, model, or implement corporate data warehousing activities. Program and configure warehouses of database information and provide support to warehouse users.	N/A
15-1199.08	Business Intelligence Analysts	Produce financial and market intelligence by querying data repositories and generating periodic reports. Devise methods for identifying data patterns and trends in available information sources.	Business Intelligence Analyst; Business Intelligence Manager; Commercial Intelligence Manager; Competitive Intelligence Analyst; Consultant, Strategic Business and Technology Intelligence; Director of Enterprise Strategy; Director of Market Intelligence; Director, Global Intelligence; Intelligence Analyst; Manager, Market Intelligence
15-1199.10	Search Marketing Strategists	Employ search marketing tactics to increase visibility and engagement with content, products, or services in	Channel Supervisor; Director of Audience Generation, Search, & Analytics; Director of Online Marketing Strategy &

<sup>1</sup> New and emerging occupations (N&E) are incorporated into the O\*NET-SOC classification system based on the evolving nature of workforce requirements stemming from changes in technology, society, law, and business practices. Incorporating N&E occupations into the O\*NET system makes O\*NET information more beneficial and responsive. <https://www.onetcenter.org/reports/NewEmerging.html>

		Internet-enabled devices or interfaces. Examine search query behaviors on general or specialty search engines or other Internet-based content. Analyze research, data, or technology to understand user intent and measure outcomes for ongoing optimization.	Performance; Director of Search Engine Optimization (Director of SEO); Director, Search Marketing Strategies; Ecommerce Marketing Manager; Internet Marketing Consultant; Internet Marketing Specialist; Senior Search Engine Optimization Associate (Senior SEO Associate); Senior Search Engine Optimization Specialist (Senior SEO Specialist)
15-2041.02	Clinical Data Managers	Apply knowledge of health care and database management to analyze clinical data, and to identify and report trends.	Clinical Data Associate, Clinical Data Management Associate Director (CDM Associate Director), Clinical Data Management Director (CDM Management Director), Clinical Data Management Manager (CDM Manager), Clinical Data Manager, Clinical Informatics Manager, Clinical Research Associate, Data Deliverables Manager, Data Management Manager, Data Management Specialist

Source: O\*NET Online

## Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is employing big data analysts, and what they are looking for in potential candidates. To identify job postings, the following occupations and codes were used: business intelligence analysts (15-1199.08), data warehousing specialists (15-1199.07), computer and information research scientists (15-1111.00), search marketing strategists (15-1199.10), and clinical data managers (15-2041.02).

### Top Occupations

In 2017, there were 3,845 employer postings in Los Angeles County for occupations related to big data analytics. The majority of the postings (65%) were for business intelligence analysts (2,490 job postings). There were 4,209 job postings for the same cluster of occupations in 2016, and 4,764 job postings in 2015.

**Exhibit 2 – Top occupations in job postings (n=3,845)**

SOC Code	Occupation	Job Postings, Full Year 2017
15-1199.08	Business Intelligence Analysts	2,490
15-1111.00	Computer and Information Research Scientists	506
15-1199.07	Data Warehousing Specialists	402
15-1199.10	Search Marketing Strategists	287
15-2041.02	Clinical Data Managers	160

Source: Labor Insight/Jobs (Burning Glass)

### Top Titles

The most common job titles for big data analysts are listed in Exhibit 3. Data analyst was mentioned in 22% of all relevant job postings (854 postings).

**Exhibit 3 –Job titles (n=3,845)**

Title	Job Postings, Full Year 2017
Data Analyst	854
Business Intelligence Analyst	185
Sap Consultant	160
Business Analyst	157
Data Scientist	140

Source: Labor Insight/Jobs (Burning Glass)

## Top Employers

Exhibit 4 lists the major employers hiring professionals in the field of data analytics. Top employers postings job ads included Anthem Blue Cross, Deloitte, Accenture, City of Hope, and Disney. The top worksite cities in the region for these occupations were Los Angeles, El Segundo, Burbank, Pasadena, and Santa Monica.

**Exhibit 4 – Top employers (n=2,450)**

Employer	Job Postings, Full Year 2017
Anthem Blue Cross	94
Deloitte	61
Accenture	57
City of Hope	50
Disney	38

Source: Labor Insight/Jobs (Burning Glass)

## Job Skills

SQL is the most sought after skill for this occupation, and was included on 38% of the postings that specified a job skill. Other job-specific skills desired by employers include data analysis, teamwork/collaboration, and project management. It is worth noting that proficiency in Tableau has become a prominent job skill desired by employers in recent years. Tableau is a data analytics software that is used for advanced data aggregation and data visualization.

**Exhibit 5 –Job skills (n=3,543)**

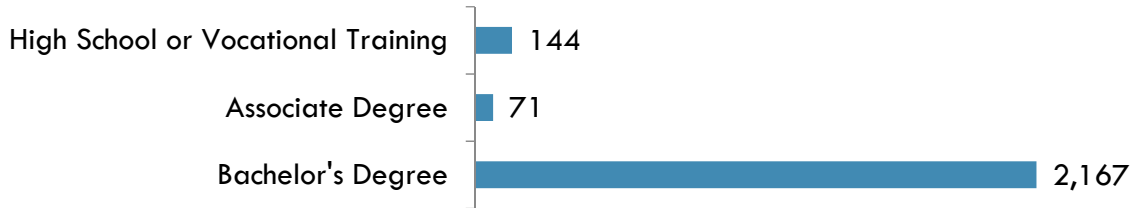
Skills	Job Postings, Full Year 2017	Skills	Job Postings, Full Year 2017
SQL	1,336	Business Intelligence	638
Data Analysis	1,294	Tableau	546
Teamwork / Collaboration	838	Python	538
Project Management	674	Data Warehousing	531

Source: Labor Insight/Jobs (Burning Glass)

*Advertised Education Levels*

Exhibit 6 displays the education level requested by employers in online job ads. The majority of employers were looking for a candidate with a Bachelor’s degree. Approximately 38% of job postings did not specify a level of education.

**Exhibit 6 – Advertised education requirements for data analysts (n=2,382)**



Source: Labor Insight/Jobs (Burning Glass)

In Los Angeles County, 16 community colleges have conferred awards in programs related to data analytics. Between 2014 and 2017, there was an average of 197 community college awards conferred annually across three programs: Information Technology, General (TOP Code: 0701.00), Computer Information Systems (TOP Code: 0702.00), and Database Design and Administration (0707.20). These three TOP Codes were included as they all contain one or more program(s) that train students with skills related to data analytics. It is important to note that an award is not equivalent to a single person in search of a job opening, since a student may earn more than one award (e.g. an associate degree and a certificate).

**Exhibit 7 – CCC Student Awards (by TOP and College)**

TOP Code	Program	College	2014-2015 Awards	2015-2016 Awards	2016-2017 Awards	3-Year Award Average
0701.00	Information Technology, General	East LA	N/A	4	8	6
		LA Mission	N/A	N/A	4	4
		LA Southwest	N/A	3	N/A	3
		Long Beach	7	10	27	15
		Mt San Antonio	104	83	61	83
		West LA	2	2	3	2
0702.00	Computer Information Systems	Citrus	N/A	N/A	5	5
		Compton	2	2	1	2
		East LA	16	14	14	15
		El Camino	12	24	15	17
		Glendale	1	3	2	2
		LA City	2	4	2	3
		LA Harbor	2	N/A	N/A	2
		LA Mission	4	9	3	5
		LA Trade	19	14	22	18
Pasadena	N/A	N/A	2	2		

		Rio Hondo	9	10	10	10
		West LA	11	5	10	9
0707.20	Database Design and Administration	Mt San Antonio	3	7	11	7
		Santa Monica	1	1	2	1
<b>Total</b>			<b>195</b>	<b>195</b>	<b>202</b>	<b>197</b>

Source: California Community Colleges Chancellor's Office MIS Data Mart

### Student Outcomes

The CTE LaunchBoard provides student outcome data on the effectiveness of CTE programs. The following student outcome information was collected from exiters of the Information Technology, General Program (TOP Code: 0701.00) in Los Angeles County for the 2015-2016 academic year.

- The median annual wage after program completion is \$26,341
- 50% of students are earning a living wage
- 66% of students are employed within six months after completing a program

The following student outcome information was collected from exiters of the Computer Information Systems Program (TOP Code: 0702.00) in Los Angeles County for the 2015-2016 academic year.

- The median annual wage after program completion is \$45,642
- 39% of students are earning a living wage
- 66% of students are employed within six months after completing a program

The following student outcome information was collected from exiters of the Database Design and Administration Program (TOP Code: 0707.20) in Los Angeles County for the 2015-2016 academic year.

- The median annual wage after program completion is \$26,077
- 68% of students are earning a living wage
- 69% of students are employed within six months after completing a program

Source: CTE LaunchBoard

### Sources

O\*Net Online, Labor Insight/Jobs (Burning Glass), Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

## Notes

Data included in this analysis represents the labor market demand for positions most closely related to big data analytics.

Real-time labor market information captures job post advertisements for occupations relevant to the field of study and should not be used to establish current job openings, because the numbers may include duplicate job postings or postings intended to gather a pool of applicants. Real-time labor market information can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions.