



Labor Market Analysis for Program Recommendation

Data Science Occupations

Mid-Peninsula Subregion

Prepared by the Bay Region Center of Excellence for Labor Market Research

September 2025

Recommendation

Based on all available data, there appears to be an “undersupply” of Data Science workers compared to the demand for this cluster of occupations in the Bay Region and in the Mid-Peninsula Subregion (San Francisco, San Mateo counties). There is a projected annual gap of about 1,084 students in the Bay Region and 473 students in the Mid-Peninsula Subregion.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0799.00 - Other Information Technology programs in the state and region. It is recommended that this data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at subregion in the state and region.

This report profiles Data Science Occupations in the 12-county Bay Region and in the Mid-Peninsula Subregion. This report includes above middle-skill occupations that require a bachelor’s degree or higher. This Data Science program is intended for students who are expected to transfer and ultimately earn bachelor’s degrees.

- **Data Scientists (15-2051):** Develop and implement a set of techniques or analytics applications to transform raw data into meaningful information using data-oriented programming languages and visualization software. Apply data mining, data modeling, natural language processing, and machine learning to extract and analyze information from large structured and unstructured datasets. Visualize, interpret, and report data findings. May create dynamic data reports.
Typical Entry-Level Educational: Bachelor’s degree
Skill Level: Above Middle-Skill
Work Experience Required: None
Percentage of individuals 25+ with an associate degree, certificate, or some postsecondary coursework as their highest level of education attainment: 10%
- **Mathematical Science Occupations, All Other (15-2099):** All mathematical scientists not listed separately.
Typical Entry-Level Educational: Bachelor’s degree
Skill Level: Above Middle-Skill
Work Experience Required: None
Percentage of individuals 25+ with an associate degree, certificate, or some postsecondary coursework as their highest level of education attainment: 10%

Occupational Demand

Table 1. Employment Outlook for Data Science Occupations in the Bay Region

Occupation	2023 Jobs	2028 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Wage	Median Hourly Wage
Data Scientists	13,957	15,760	1,803	13%	6,172	1,234	\$60	\$79
Mathematical Science Occupations, All Other	237	238	1	0%	78	16	\$72	\$87
Total	14,194	15,998	1,804	13%	6,250	1,250	\$60	\$79

Source: Lightcast 2025.1

The Bay Region includes: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

Table 2. Employment Outlook for Data Science Occupations in the Mid-Peninsula Subregion

Occupation	2023 Jobs	2028 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Wage	Median Hourly Wage
Data Scientists	5,511	6,342	831	15%	2,598	520	\$62	\$83
Mathematical Science Occupations, All Other	125	124	0	0%	41	8	\$87	\$91
Total	5,636	6,466	831	15%	2,639	528	\$63	\$83

Source: Lightcast 2025.1

Mid-Peninsula Subregion includes: San Francisco, San Mateo Counties

Job Postings in the Bay Region and Mid-Peninsula Subregion

Table 3. Number of Job Postings by Occupation for the latest 12 months

Occupation	Bay Region	Mid-Peninsula
Data Scientists	14,148	5,140

Source: Lightcast 2025.3; "Job Posting Analytics." Sep. 2024 - Aug. 2025

Table 4a. Top Job Titles in Job Postings for Data Science Occupations in the Bay Region

Title	Bay	Title	Bay
Data Scientists	1,616	Enterprise Architects	154
Data Analysts	895	SAP Consultants	132
Data Science Managers	269	Data Analytics Engineers	97
Chief Data Scientists	226	Data Science Interns	90
Directors of Data Science	201	Lead Data Scientists	86
Business Intelligence Analysts	197	Data Analytics Managers	85
Principal Data Scientists	173	Data Analytics Scientists	85
Applied Scientists	166	Principal Engineers	85
Machine Learning Engineers	159	Analytics Managers	81

Source: Lightcast 2025.3; "Job Posting Analytics." Sep. 2024 - Aug. 2025

Table 4b. Top Job Titles in Job Posting for Data Science Occupations in the Mid-Peninsula Subregion

Title	Mid-Peninsula	Title	Mid-Peninsula
Data Scientists	672	Applied Scientists	47
Data Analysts	294	Marketing Data Scientists	46
Data Science Managers	104	Data Analytics Scientists	44
Chief Data Scientists	103	Clinical Data Managers	43
Directors of Data Science	99	Analytics Managers	42
Principal Data Scientists	79	Machine Learning Interns	41
Business Intelligence Analysts	70	Data Analytics Engineers	40
Machine Learning Engineers	68	Data Analytics Managers	39
Enterprise Architects	60	Labeling Associates	39

Source: Lightcast 2025.3; "Job Posting Analytics." Sep. 2024 - Aug. 2025

Industry Concentration

Table 5. Industries Hiring for Data Science Occupations in the Bay Region

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2023)	Jobs in Industry (2028)	% Change (2023-28)	% Occupation Group in Industry (2023)
Custom Computer Programming Services	1,582	2,100	33%	11%
Corporate, Subsidiary, and Regional Managing Offices	726	1,848	154%	10%
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	968	1,326	37%	7%
Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	849	1,410	66%	7%
Software Publishers	1,109	1,292	17%	7%
Computer Systems Design Services	702	1,023	46%	6%
Web Search Portals and All Other Information Services	705	848	20%	4%
Research and Development in Biotechnology (except Nanobiotechnology)	556	749	35%	4%
Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers	553	585	6%	3%
Administrative Management and General Management Consulting Services	318	391	23%	2%

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2023)	Jobs in Industry (2028)	% Change (2023-28)	% Occupation Group in Industry (2023)
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Source: Lightcast 2025.3

Table 6. Top Employers Posting Data Science Occupations in the Bay Region and the Mid-Peninsula Subregion

Employer	Bay	Employer	Mid-Peninsula
Amazon	338	Meta	197
Apple	322	Uber	133
Google	313	Genentech	120
Meta	278	Accenture	88
Tiktok	270	Amazon	85
Walmart	239	Roblox	84

Source: Lightcast 2025.3; "Job Posting Analytics." Sep. 2024 - Aug. 2025

Educational Supply

There are two community colleges in the Bay Region issuing 23 awards on average annually (last 3 years ending 2023-24) on TOP 0799.00 - Other Information Technology. In the Mid-Peninsula Subregion, there are no community colleges that issued awards on average annually (last 3 years) on this TOP code.

There are two other CTE educational institutions in the Bay Region issuing 143 awards on average annually (last 3 years ending 2022-23) on CIP 30.0801-Mathematics and Computer Science. There is one other CTE educational institution in the Mid-Peninsula Subregion issuing 55 awards on average annually (last 3 years) on this CIP code.

Table 7a. Community College Awards on TOP 0799.00 - Other Information Technology in the Bay Region

College	Subregion	Low unit Certificate	Total
Las Positas	East Bay	1	1
Santa Rosa	North Bay	22	22
Total	-	23	23

Source: Data Mart

Note: The annual average for awards is 2021-22 to 2023-24.

Table 7b. Other CTE Institutions Awards on CIP 30.0801- Mathematics and Computer Science in the Bay Region

College	Subregion	Bachelor's degree	Total
Minerva University	Mid-Peninsula	55	55
Santa Clara University	Silicon Valley	88	88
Total	-	143	143

Source: Data Mart

Note: The annual average for awards is 2020-21 to 2022-23.

Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay Region with 1,250 annual openings for the Data Science occupational cluster and 166 annual (3-year average) awards for an annual undersupply of 1,084 students. In the Mid-Peninsula Subregion, there is also a gap with 528 annual openings and 55 annual (3-year average) awards for an annual undersupply of 473 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0799.00 - Other Information Technology

Metric Outcomes	Bay All CTE Program	State 0799.00	Bay 0799.00	Mid-Peninsula 0799.00
Students with a Job Closely Related to Their Field of Study	74%	71%	75%	71%
Median Annual Earnings for SWP Exiting Students	\$53,090	\$46,188	\$48,630	\$66,464
Median Change in Earnings for SWP Exiting Students	24%	13%	19%	18%
Exiting Students Who Attained the Living Wage	54%	59%	47%	55%

Source: Launchboard Strong Workforce Program Median of 2018 to 2021.

Skills, Certifications and Education

Table 9. Top Skills in Job Postings for Data Science Occupations in the Bay Region

Skill	Posting	Skill	Posting
Python (Programming Language)	6,218	Tableau (Business Intelligence Software)	2,624
SQL (Programming Language)	5,828	Scalability	2,257
Data Science	5,449	Data Visualization	2,154
Data Analysis	5,286	Finance	2,053
Computer Science	5,079	SAP Applications	1,977
Machine Learning	4,831	Workflow Management	1,909
Statistics	4,121	Economics	1,868
R (Programming Language)	3,195	Project Management	1,857
Dashboard	2,939	Business Requirements	1,716
Artificial Intelligence	2,640	Data Modeling	1,662

Source: Lightcast 2025.3; "Job Posting Analytics." Sep. 2024 - Aug. 2025

Table 10. Certifications in Job Postings for Data Science Occupations in the Bay Region

Certification	Posting	Certification	Posting
Epic EMR Certification	144	Salesforce Certification	30
SAP Certification	116	Project Management Certification	27
Project Management Professional Certification	64	TOGAF Certification	22
Oracle Certification	53		

Source: Lightcast 2025.3; "Job Posting Analytics." Sep. 2024 - Aug. 2025

Table 11. Education Requirements for Data Science Occupations in the Bay Region

Education Level	Job Postings	% of Total
High school or GED	195	1%
Associate degree	276	2%
Bachelor's degree & higher	14,230	97%

Source: Lightcast 2025.3; "Job Posting Analytics." Sep. 2024 - Aug. 2025

Note: 36% of records have been excluded because they do not include a degree level. As a result, the chart above may not be representative of the full sample.

Methodology

Occupations for this report were identified by use of job descriptions and skills listed in O*Net. Labor demand data is sourced from Lightcast occupation and job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CCCCCO Data Mart and CTE Launchboard.

Sources

O*Net Online
 Lightcast
 CTE LaunchBoard www.calpassplus.org
 Statewide CTE Outcomes Survey
 Employment Development Department Unemployment Insurance Dataset
 CCCCCO Data Mart

Contacts

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