



Labor Market Analysis for Program Recommendation

AI Enabled Cybersecurity Occupations

East Bay Subregion

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

Certificate Program

September 2026

Recommendation Based on Labor Market Data: ☒ Yes ☐ With Reservations ☐ No		
	Earning Wage Meets Living Wage	Meets Demand
Bay Region	Entry Level Hourly Wage- \$43 Mid-Career Hourly Wage- \$54 Mid-Career Hourly Wage at or above the Bay Living Wage (\$27)? ☒ Yes ☐ No	Demand: 2,626 Supply: 502 (19% of Demand is Met) Gap: 2,124 In-Demand? ☒ Yes ☐ No
East Bay Subregion	Entry Level Hourly Wage- \$37 Mid-Career Hourly Wage- \$47 Mid-Career Hourly Wage at or above the Subregion Living Wage (\$25)? ☒ Yes ☐ No	Demand: 399 Supply: 101 (25% of Demand is Met) Gap: 298 In-Demand? ☒ Yes ☐ No

Note: An occupation is considered to provide a living wage if the mid-career wage is at or above the amount required for a single adult to be economically self-sufficient within a specified region. In this report, living wage estimates are based on the California Self-Sufficiency Standard. The Bay Region Center of Excellence is gradually transitioning to the MIT Living Wage Calculator. During this transition, we include estimates in the methodology section from both sources for reference and comparison. As a rule of thumb, an occupation will be considered **in-demand** when the supply is less than 75% of the demand and the labor market gap exceeds 40 openings (a reasonable regional threshold for starting a new program), but this approach may not apply in all cases. For definitions of demand, supply, and living wage, please scroll to the bottom of the report under **Definitions**.

Recommendation

The labor market data supports this proposed program. The occupations meet both the Bay Region and East Bay subregion living wage at the entry and mid-career levels. An additional 2,124 students are needed in the Bay Region and 298 students in the East Bay subregion to complete their program. Lastly, only 19% of labor market demand is being met in the Bay Region, and 25% of demand is being met in the East Bay subregion overall.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0708.10 - Computer Networking programs in the state and region. It is recommended that these 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 AI Enabled Cybersecurity Occupations in the 12 county Bay Region and in the East Bay subregion. The occupations classified as middle-skill occupations require a certificate, or an associate degree, or it may require a bachelor's degree, but 33% or fewer of current workers in these roles hold one.

- **Computer User Support Specialists (15-1232):** Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, via telephone, or electronically. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems.
Typical Entry-Level Educational: Some college, no degree
Skill Level: 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: 38%
- **Computer Network Support Specialists (15-1231):** Analyze, test, troubleshoot, and evaluate existing network systems, such as local area networks (LAN), wide area networks (WAN), cloud networks, servers, and other data communications networks. Perform network maintenance to ensure networks operate correctly with minimal interruption.
Typical Entry-Level Educational: Associate's degree
Skill Level: 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: 38%
- **Computer Network Architects (15-1241):** Design and implement computer and information networks, such as local area networks (LAN), wide area networks (WAN), intranets, extranets, and other data communications networks. Perform network modeling, analysis, and planning, including analysis of capacity needs for network infrastructures. May also design network and computer security measures. May research and recommend network and data communications hardware and software.
Typical Entry-Level Educational: Bachelor's degree
Skill Level: Middle-Skill
Work Experience Required: 5 years or more
Percentage of individuals 25+ with an associate degree, certificate, or some postsecondary coursework as their highest level of education attainment: 36%
- **Network and Computer Systems Administrators (15-1244):** Install, configure, and maintain an organization's local area network (LAN), wide area network (WAN), data communications network, operating systems, and physical and virtual servers. Perform system monitoring and verify the integrity and availability of hardware, network, and server resources and systems. Review system and application logs and verify completion of scheduled jobs, including system backups. Analyze network and server resource consumption and control user

access. Install and upgrade software and maintain software licenses. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software.

Typical Entry-Level Educational: Bachelor's degree

Skill Level: 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: 38%

Occupational Demand

Table 1. Employment Outlook for AI Enabled Cybersecurity Occupations in the Bay Region

Occupation	2025 Jobs	2030 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	Entry Level Hourly	Mid-Career Hourly Wage
Computer User Support Specialists	19,774	20,395	621	3%	7,030	1,406	\$34	\$43
Computer Network Support Specialists	4,046	4,322	276	7%	1,590	318	\$39	\$50
Computer Network Architects	6,626	7,209	582	9%	2,260	452	\$66	\$84
Network and Computer Systems Administrators	7,662	7,950	287	4%	2,251	450	\$47	\$61
Total	38,108	39,876	1,766	5%	13,131	2,626	\$43	\$54

Source: Lightcast 2026.3

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 AI Enabled Cybersecurity Occupations in the East Bay Subregion

Occupation	2025 Jobs	2030 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	Entry Level Hourly	Mid-Career Hourly Wage
Computer User Support Specialists	3,753	3,591	-161	-4%	1,124	225	\$30	\$38
Computer Network Support Specialists	805	788	-16	-2%	243	49	\$35	\$43
Computer Network Architects	1,087	1,079	-8	-1%	263	53	\$55	\$71
Network and Computer Systems Administrators	1,510	1,470	-40	-3%	359	72	\$43	\$55
Total	7,155	6,928	-225	-3%	1,989	399	\$37	\$47

Source: Lightcast 2026.3

East Bay Subregion includes: Alameda, Contra Costa Counties

Job Postings in the Bay Region and East Bay Subregion

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

Occupation	Bay Region	East Bay
Computer Network Architects	6,015	837
Computer User Support Specialists	5,098	1,240
Network and Computer Systems Administrators	2,882	644

Occupation	Bay Region	East Bay
Computer Network Support Specialists	514	147

Source: Lightcast 2026.3; "Job Posting Analytics." Sep. 2025 - Aug. 2026

Table 4a. Top Job Titles in Job Postings for AI Enabled Cybersecurity Occupations in the Bay Region

Title	Bay	Title	Bay
Network Engineers	735	Software Development Engineers in Test	129
Technical Support Engineers	423	Systems/Software Engineers	128
Automation Engineers	363	Technical Support Specialists	119
Systems Administrators	343	Network Architects	116
IT Specialists	256	Network Administrators	111
Software Systems Engineers	244	Principal Software Engineers	110
IT Support Specialists	207	IT Technicians	107
Network Software Engineers	192	Infrastructure Software Engineers	93
Desktop Support Technicians	161	Software Automation Engineers	91

Source: Lightcast 2026.3; "Job Posting Analytics." Sep. 2025 - Aug. 2026

Table 4b. Top Job Titles in Job Posting for AI Enabled Cybersecurity Occupations in the East Bay Subregion

Title	East Bay	Title	East Bay
Network Engineers	118	Network Administrators	39
Technical Support Engineers	98	Software Systems Engineers	28
Automation Engineers	87	Technical Support Specialists	27
Systems Administrators	82	Geek Squad Managers	25
IT Specialists	80	Desktop Support Specialists	25
Desktop Support Technicians	43	DevOps Automation Engineers	23
Network Architects	43	IT Support Technicians	22
IT Support Specialists	40	Software Development Engineers in Test	21
IT Technicians	40	Quality Management System Specialists	21

Source: Lightcast 2026.3; "Job Posting Analytics." Sep. 2025 - Aug. 2026

Industry Concentration

Table 5. Industries Hiring for AI Enabled Cybersecurity Occupations in the Bay Region

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2025)	Jobs in Industry (2030)	% Change (2025-30)	% Occupation Group in Industry (2025)
Custom Computer Programming Services	8,020	8,580	7%	21%
Computer Systems Design Services	4,038	4,227	5%	11%
Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	2,813	3,413	21%	7%
Software Publishers	2,506	2,685	7%	7%
Corporate, Subsidiary, and Regional Managing Offices	1,891	2,451	30%	5%
Local Government, Excluding Education and Hospitals	1,090	1,119	3%	3%
Colleges, Universities, and Professional Schools (State Government)	910	904	-1%	2%
Colleges, Universities, and Professional Schools	832	840	1%	2%
Elementary and Secondary Schools (Local Government)	768	774	1%	2%
Web Search Portals and All Other Information Services	716	740	3%	2%

Source: Lightcast 2026.3

Table 6. Top Employers Posting AI Enabled Cybersecurity Occupations in the Bay Region and the East Bay Subregion

Employer	Bay	Employer	East Bay
Apple	589	Insight Global	87
Nvidia	396	Robert Half	61
Google	322	Kaiser Permanente	54
Insight Global	277	Odoo	52
Amazon	203	General Dynamics	51
Palo Alto Networks	157	Tesla	37

Source: Lightcast 2026.3; "Job Posting Analytics." Sep. 2025 - Aug. 2026

Educational Supply

There are fourteen community colleges in the Bay Region issuing 498 awards on average annually (last 3 years ending 2024-25) on TOP 0708.10 - Computer Networking. In the East Bay subregion, there are four community colleges that issued 101 awards on average annually (last 3 years) on this TOP code.

There are two other CTE educational institutions in the Bay Region issuing 4 awards on average annually (last 3 years ending 2023-24) on CIP 11.1003- Computer and Information Systems Security/Auditing/Information Assurance. There

is no other CTE educational institution in the East Bay subregion issuing any awards on average annually (last 3 years) on this CIP code.

Table 7a. Community College Awards on TOP 0708.10 - Computer Networking in the Bay Region

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Cabrillo	SC-Monterey	5	3	1	9
Chabot	East Bay	3	0	1	4
Deanza	Silicon Valley	22	0	11	33
Evergreen Valley	Silicon Valley	0	0	2	2
Foothill	Silicon Valley	1	0	0	1
Las Positas	East Bay	17	15	23	55
Los Medanos	East Bay	10	0	12	22
Mission	Silicon Valley	21	0	35	56
Monterey	SC-Monterey	5	1	8	14
Ohlone	East Bay	3	0	17	20
San Francisco	Mid-Peninsula	68	0	165	233
San Jose City	Silicon Valley	9	0	14	23
Santa Rosa	North Bay	1	1	7	9
Skyline	Mid-Peninsula	10	6	1	17
Total	-	175	26	297	498

Source: Data Mart

Note: The annual average for awards is 2022-23 to 2024-25.

Table 7b. Other CTE Institutions Awards on CIP 11.1003- Computer and Information Systems Security/Auditing/Information Assurance. in the Bay Region

College	Subregion	Associate degree	Certificates of at least 1 but less than 2 years	Total
Institute for Business and Technology	Silicon Valley	2	0	2
InterCoast Colleges-Fairfield	North Bay	0	2	2
Total	-	2	2	4

Source: IPEDS

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

Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay Region with 2,626 annual openings for the AI Enabled Cybersecurity occupational cluster and 502 annual (3-year average) awards for an annual undersupply of 2,124 students. In the East Bay subregion, there is also a gap with 399 annual openings and 101 annual (3-year average) awards for an annual undersupply of 298 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0708.10 - Computer Networking

Metric Outcomes	Bay All CTE Program	State 0708.10	Bay 0708.10	East Bay 0708.10
Students with a Job Closely Related to Their Field of Study	75%	68%	75%	92%
Median Annual Earnings for SWP Exiting Students	\$59,448	\$56,297	\$62,649	\$58,915
Median Change in Earnings for SWP Exiting Students	30%	22%	27%	25%
Exiting Students Who Attained the Living Wage	50%	57%	54%	54%

Source: DataVista Program Median of 2021 to 2023.

Skills, Certifications and Education

Table 9. Top Skills in Job Postings for AI Enabled Cybersecurity Occupations in the Bay Region

Skill	Posting	Skill	Posting
Computer Science	4,710	Debugging	2,090
Automation	4,613	Software Engineering	1,898
Python (Programming Language)	3,884	Virtual Private Networks (VPN)	1,748
Technical Support	2,849	Firewall	1,736
Linux	2,832	Amazon Web Services	1,603
Workflow Management	2,807	Technical Issues	1,599
Operating Systems	2,752	TCP/IP	1,512
Scalability	2,474	Microsoft Azure	1,507
Network Routing	2,248	Help Desk Support	1,506
Scripting	2,109	Active Directory	1,499

Source: Lightcast 2026.3; "Job Posting Analytics." Sep. 2025 - Aug. 2026

Table 10. Certifications in Job Postings for AI Enabled Cybersecurity Occupations in the Bay Region

Certification	Posting	Certification	Posting
CompTIA A+	693	Certified Information Systems Security Professional	190
Cisco Certified Network Associate	658	Advanced Cardiovascular Life Support (ACLS) Certification	179
CompTIA Security+	602	ITIL Foundation Certification	168
Cisco Certified Network Professional	567	CompTIA Linux+	163
CompTIA Network+	550	Red Hat Certified Engineer (RHCE)	140
Cisco Certified Internetwork Expert	306	Red Hat Certified System Administrator (RHCSA)	116
IAT Level II Certification	229	CompTIA Certification	99

Source: Lightcast 2026.3; "Job Posting Analytics." Sep. 2025 - Aug. 2026

Table 11. Education Requirements for AI Enabled Cybersecurity Occupations in the Bay Region

Education Level	Job Postings	% of Total
High school or GED	730	6%
Associate degree	956	8%
Bachelor's degree & higher	9,954	86%

Source: Lightcast 2026.3; "Job Posting Analytics." Sep. 2025 - Aug. 2026

Note: 44% 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.

This report uses living wage estimates from the California Self-Sufficiency Standard. The Bay Region Center of Excellence is gradually transitioning to the Massachusetts Institute of Technology (MIT) Living Wage Calculator, which will become the primary living wage benchmark used in future reports. During this transition, we include both estimates to provide context and allow readers to understand how the selected benchmark affects wage comparisons. Because the California Self-Sufficiency Standard and the MIT Living Wage Calculator use different methodologies, their estimates are not directly interchangeable. The MIT Living Wage Calculator generally produces higher living wage thresholds; therefore, future reports may identify fewer occupations as providing a living wage, even when the underlying occupational wage data has not changed. For comparison, the MIT living wage is \$33 per hour for the Bay Region and \$33 per hour for the East Bay subregion. Under the California Self-Sufficiency Standard, the living wage is \$27 per hour for the Bay Region and \$25 per hour for the East Bay subregion.

Definitions

Demand refers to average annual openings which includes a combination of both [new jobs and replacement jobs](#) between 2025 to 2030. New jobs represent the total number of additional workers required in an occupation, calculated as the difference between the current number of workers and the projected number of unfilled positions. Replacements are jobs that will need to be filled by [new hires](#) due to existing workers leaving the occupation. The average annual openings figure is derived by dividing total openings (2025 to 2030) by five years.

Supply refers to the average number of [graduates](#) between academic years 2021–2022 and 2023–2024. Graduates include students from community colleges, other two-year private and public institutions, as well as four-year institutions.

Living wage refers to the amount of income required for working families to meet basic needs at a minimally adequate level, considering family composition, ages of children, and geographic differences in costs based on the Self-Sufficiency Standard methodology.

Entry-level wages are the hourly earnings paid to workers who are newly entering an occupation.

Mid-career wages are the hourly earnings paid to workers who have accumulated several years of experience in an occupation, reflecting increased productivity, skill proficiency, and responsibility beyond entry-level roles but short of late-career or senior positions.

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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