Labor Market Assessment for: Computer Systems Occupations (0702.00 Computer Information Systems)

Inland Empire/Desert Center of Excellence, August 2025

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FOR LABOR MARKET RESEARCH
INLAND EMPIRE/DESERT

Summary

Program LMI Endorsement	All LMI Criteria Met	Some LMI Criteria Met (Proceed with Caution)	LMI Criteria NOT Met
	☐	✓	☐

Program LMI Endorsement Criteria		
Supply Gap	**Yes** ✓	No ☐
	Comments: There is *projected* to be **1,017 annual job openings** throughout the Inland Empire/Desert region, which is more than the **531 annual average awards conferred by educational institutions over the last 3 years.** Supply data includes both community college awards (155) and non-community college awards (376).	
Living Wage	**Yes** ✓	No ☐
	Comments: **All assessed** occupations **have entry-level hourly $3-$18 wages above the IE/D living wage of 20.42.**[1]	
Education	Yes ☐	**No** ✓
	Comments: The **minority (36%)** of annual job openings for these six occupations have **some college or associate degree** as their **typical entry-level education level**, and **less than 33**% of all workers in the field (28%) have completed **some college or an associate degree** as their **highest level of education**. See Exhibit 9 for more details.	

The Inland Empire/ Desert (IE/D) Center of Excellence for Labor Market Research (IE/D COE) reviewed the following occupations to prepare this report:

- Middle-Skill (typically require training/education above a HS diploma but less than a bachelor's degree)
  - Computer Network Support Specialists (15-1231)
  - Computer User Support Specialists (15-1232)
- Above Middle-Skill (typically require a bachelor's degree)
  - Computer Systems Analysts (15-1211)
  - Computer Network Architects (15-1241)
  - Software Developers (15-1252)
  - Software Quality Assurance Analysts and Testers (15-1253)

Summary of findings

Demand

- The number of jobs related to the assessed occupations is projected to increase 9% through 2029, with 1,017 annual job openings (new and replacement jobs).
- Hourly entry-level wages for all occupations are above living wage at the 25th percentile hourly wage ranging from $24.97 to $49.25 in IE/D.
- There were 2,654 online job postings from 858 employers over the past 12 months with the highest postings for software developers and computer user support specialists.
- Most job postings for target occupations require a bachelor's degree (66%), followed by a high school diploma or equivalent (21%), associate degree (11%), and above a bachelor's degree (2%).

Supply

- On average, there were 531 annual awards conferred by educational institutions over the last 3 years in related fields: 155 from community colleges and 376 from other institutions (e.g., 4-year universities, private schools).
- IE/D community college students that exited these programs in the 2022-23 academic year earned a median annual wage of $37,000 ($17.79 per hour).
- 40% of students that exited their program in 2022-23 reported that they are now earning a living wage.

[1] *The UW self-sufficiency standard is currently used by the CO and other COEs, the self-sufficiency standard was last updated by UW in 2024. To provide an alternative perspective, the COE will provide an alternative living wage calculation from MIT in the analysis below as an additional reference point. MIT estimates, the living wage for an adult with no kids living in 2024 is $26.30 in Riverside County and $25.17 in San Bernadino County.*

Introduction

California Community College Computer Information Systems (TOP 0702.00) programs prepare students for employment in general programs in data and information storage and processing, including hardware, software, basic design principles, and user requirement (Taxonomy of Programs, 2023). The knowledge, skills, and abilities trained by Computer Information Systems programs lead to employment in occupations related to computer systems support.

Job Demand

In 2024, there were 13,190 jobs in occupations related to computer systems support in the IE/D region. Regional employment for this occupation group is projected to increase by 9% through 2029 with 1,017 job openings projected annually. Exhibit 1 displays the job count, five-year projected job growth, and job openings in the region.

Exhibit 1. Five-year projections for occupations related to computer systems support, IE/D Region, 2024-2029

Occupation	SOC	2024 Jobs	2029 Jobs	2024 - 2029 % Change	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)
Computer Systems Analysts	15-1211	2,415	2,588	7%	887	177
Computer Network Support Specialists	15-1231	738	799	8%	305	61
Computer User Support Specialists	15-1232	3,978	4,183	5%	1,504	301
Computer Network Architects	15-1241	647	706	9%	236	47
Software Developers	15-1252	4,858	5,474	13%	1,929	386
Software Quality Assurance Analysts and Testers	15-1253	554	609	10%	224	45
Total		**13,190**	**14,359**	**9%**	**5,084**	**1,017**

SOURCE: LIGHTCAST 2025.3

Job Postings

The following analysis for occupations related to computer systems support using online job posting data.

Important note: The data produced in this section were generated by leveraging online job posting data sourced from Lightcast, which is the labor market analytics software tool COEs use to produce these briefs. The job posting data is collected from scraping online job boards such as LinkedIn, Indeed, Glassdoor and many others. The process Lightcast uses to assemble this data does have some limitations due to methods that recruitment professionals sometimes use (e.g., posting one job to fill multiple positions). For example, the number of jobs posted is not necessarily the same as the number of job vacancies.[2] While not perfect, Lightcast leverages machine learning and other AI technologies to enrich, deduplicate and aggregate this information to make it a meaningful dataset.

Exhibit 2 displays the number of job ads posted for occupations related to computer systems support over the last 12 months and the median posting duration. Over the previous 12 months, there were 2,654 unique job postings for occupations related to computer systems support in the region from 858 employers.

[2] *"Job Posting Analytics (JPA) Methodology." Lightcast Knowledge Base, https://kb.lightcast.io/en/articles/6957446-job-posting-analytics-jpa-methodology*

Exhibit 2. Job ads and posting duration, IE/D Region, Aug 2024 – Jul 2025

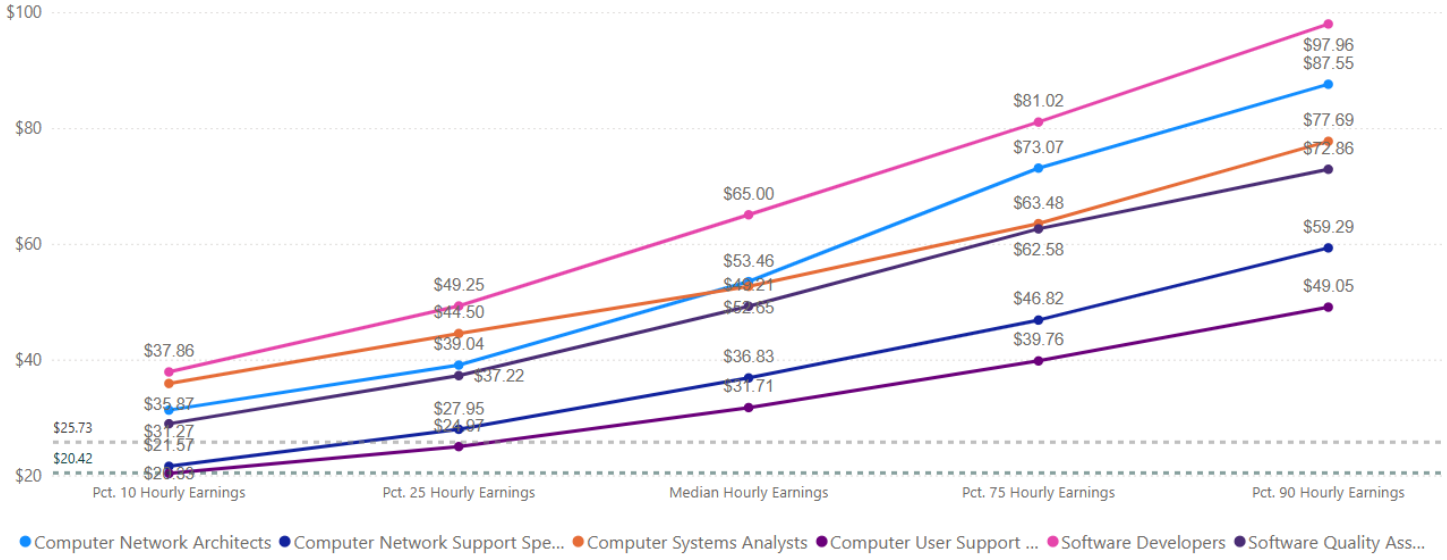
Job Title	Job Ads	Median Posting Duration
Software Developers	990	19 days
Computer User Support Specialists	730	23 days
Computer Systems Analysts	444	23 days
Computer Network Architects	262	23 days
Computer Network Support Specialists	131	25 days
Software Quality Assurance Analysts and Testers	97	22 days
Total	**2,654**	

SOURCE: LIGHTCAST 2025.3

Earnings

Exhibit 3 displays the hourly earnings for occupations related to computer systems support compared to both the UW Self-Sufficiency Standard for the IE/D of $20.42[3] and the MIT IE/D living wage of $25.73.[4]

Exhibit 3. Projected hourly earnings by percentile, IE/D Region, 2024



Description	Pct. 10 Hourly Earnings	Pct. 25 Hourly Earnings	Median Hourly Earnings	Pct. 75 Hourly Earnings	Pct. 90 Hourly Earnings
Computer User Support Specialists	$20.33	$24.97	$31.71	$39.76	$49.05
Computer Network Support Specialists	$21.57	$27.95	$36.83	$46.82	$59.29
Software Quality Assurance Analysts and Testers	$28.91	$37.22	$49.21	$62.58	$72.86
Computer Systems Analysts	$35.87	$44.50	$52.65	$63.48	$77.69
Computer Network Architects	$31.27	$39.04	$53.46	$73.07	$87.55
Software Developers	$37.86	$49.25	$65.00	$81.02	$97.96

SOURCE: 2025.3

All projected entry-level earnings (that is, the earnings of the lowest paid 25% of employees in the IE/D) were above the UW Self-Sufficiency Standard for the IE/D (see Exhibit 3). 5 of the 6 occupations listed were also above the MIT living wage for an adult with no children ($25.73) in projected entry-level earnings (see Exhibit 3).

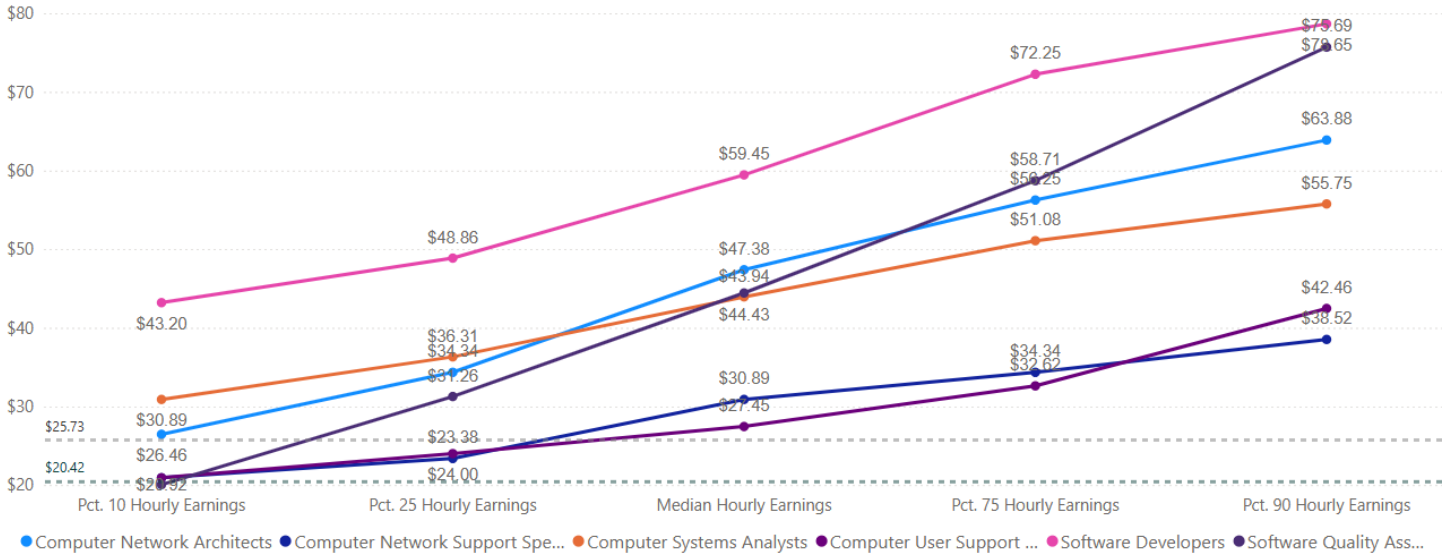
[3] *The UW self-sufficiency standard is currently used by the CO and other COEs, the self-sufficiency standard was last updated by UW in 2024. To provide an alternative perspective, the COE will provide an alternative living wage calculation from MIT in the analysis below as an additional reference point. MIT estimates, the living wage for an adult with no kids living in 2024 is $26.30 in Riverside County and $25.17 in San Bernadino County.*

[4] *ibid.*

Advertised Salary from Online Job Ads

Exhibit 4 displays the regional online advertised salaries for the occupations related to computer systems support over the last 12 months. The salary information of online job ad data suggests employers advertise entry level hourly wages between $23.38 and $48.86 (estimated to be equal to an annual salary between $48,630 and $101,629).

Exhibit 4. Hourly earnings of job postings by percentile, IE/D Region, Aug 2024 – Jul 2025



Description	Pct. 10 Hourly Earnings	Pct. 25 Hourly Earnings	Median Hourly Earnings	Pct. 75 Hourly Earnings	Pct. 90 Hourly Earnings
Computer Network Architects	$26.46	$34.34	$47.38	$56.25	$63.88
Computer Network Support Specialists	$20.92	$23.38	$30.89	$34.34	$38.52
Computer Systems Analysts	$30.89	$36.31	$43.94	$51.08	$55.75
Computer User Support Specialists	$20.92	$24.00	$27.45	$32.62	$42.46
Software Developers	$43.20	$48.86	$59.45	$72.25	$78.65
Software Quality Assurance Analysts and Testers	$20.06	$31.26	$44.43	$58.71	$75.69

SOURCE: LIGHTCAST 2025.3

Online Job Advertisements: top job titles, skills, education & work experience.

Exhibit 5 displays the job titles most frequently used in job postings for the occupations related to computer systems support over the last 12 months. Assessing the top advertised job titles may provide insight into the types of positions sought by employers.

Exhibit 5. Job titles most frequently used in job ads, IE/D Region, Aug 2024 – Jul 2025

Job Title	Unique Postings
Software Engineers	77
IT Specialists	50
IT Technicians	47
Network Engineers	45
Solutions Architects	42
IT Support Specialists	40
Software Developers	40
C++ Software Developers	38
Business Systems Analysts	36
Help Desk Technicians	33

SOURCE: LIGHTCAST 2025.3

Exhibit 6 displays the employers posting the most job ads for this occupational group during the last 12 months. Showing employer names can provide insight into where students may find employment after completing a program and may inform job development and other employer engagement targets for faculty and staff involved in related programs. Esri and Canonical Group had the highest unique job posts for this occupational group in the last 12 months. Posting intensity is the ratio of total job posts to unique job posts which are deduplicated. A higher posting intensity can represent the level of effort and activity the organization is putting into hiring for that position. The following report comes directly from Lightcast's Job Posting Analytics dashboard.

Exhibit 6. Employers posting the most job ads, IE/D Region, Aug 2024 – Jul 2025

Company	Total/Unique (Aug 2024 - Jul 2025)	Posting Intensity	Median Posting Duration
Esri	840 / 292	3 : 1	19 days
Canonical Group	144 / 72	2 : 1	29 days
County Of Riverside	104 / 51	2 : 1	40 days
Loma Linda University	203 / 49	4 : 1	24 days
Anywhere Real Estate	70 / 42	2 : 1	28 days
Prime Healthcare Services	155 / 41	4 : 1	21 days
San Bernardino County	69 / 36	2 : 1	20 days
Veralto	55 / 33	2 : 1	9 days
CACI International	91 / 29	3 : 1	23 days
NavitsPartners	51 / 28	2 : 1	16 days

SOURCE: LIGHTCAST 2025.3

Exhibit 7 displays the top common, specialized and computer skills that were included in the job postings over the last 12 months. Today's demand is an important indicator of which skills employers are looking for in the current market. Analyzing skills from a historical perspective as well as projecting the future needs of employers may provide insight into how the job posting skills demand compares to the market as a whole. Rapidly growing skills are those that are increasing in demand at a faster rate than the market as a whole. [5]

Exhibit 7. Top 10 in-demand skills from employer job ads, IE/D Region, Aug 2024 – Jul 2025

Common skills	Total Postings	Skill Growth Relative to Market
Communication	1,145	
Troubleshooting (Problem Solving)	1,071	
Problem Solving	813	
Management	706	
Customer Service	628	
Operations	610	
Information Technology	455	
Leadership	409	
Detail Oriented	378	
Writing	368	

[5] *"What are Lightcast Skill Projects", Lightcast Knowledge base, https://kb.lightcast.io/en/articles/8496296-what-are-lightcast-skill-projections*

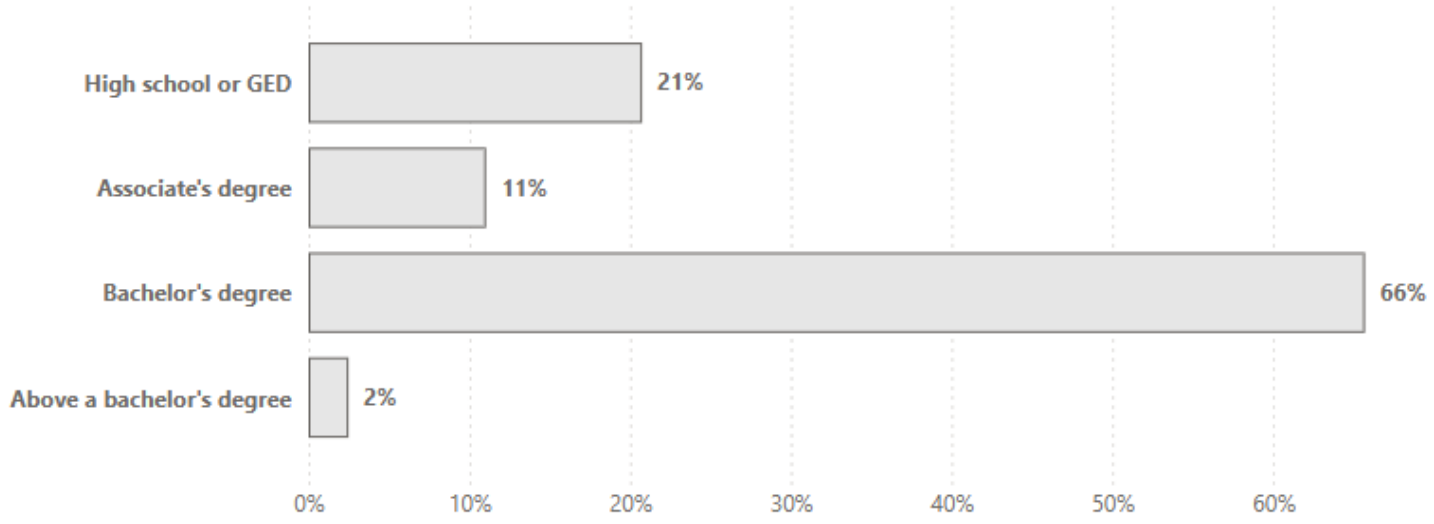
Specialized skills	Total Postings	Skill Growth Relative to Market
Computer Science	922	Growing
Technical Support	434	Growing
SQL (Programming Language)	387	Growing
Workflow Management	384	Growing
Python (Programming Language)	364	Growing
Application Programming Interface (API)	345	Stable
Agile Methodology	331	Stable
Operating Systems	321	Stable
Software Development	321	Stable
Project Management	313	Stable

Computer Skills	Total Postings	Skill Growth Relative to Market
SQL (Programming Language)	387	Growing
Python (Programming Language)	364	Growing
Application Programming Interface (API)	345	Stable
Operating Systems	321	Stable
ArcGIS (GIS Software)	282	Lagging
Microsoft Office	271	
Microsoft Azure	266	Growing
JavaScript (Programming Language)	244	Lagging
C# (Programming Language)	241	Lagging
Microsoft Excel	224	

SOURCE: LIGHTCAST 2025.3

Exhibit 8 includes the minimum educational requirements from job postings for this occupational group with bachelor's degree (66%) significantly greater than high school diploma or equivalent (21%) or associate degree (11%) or above a bachelor's degree (2%).

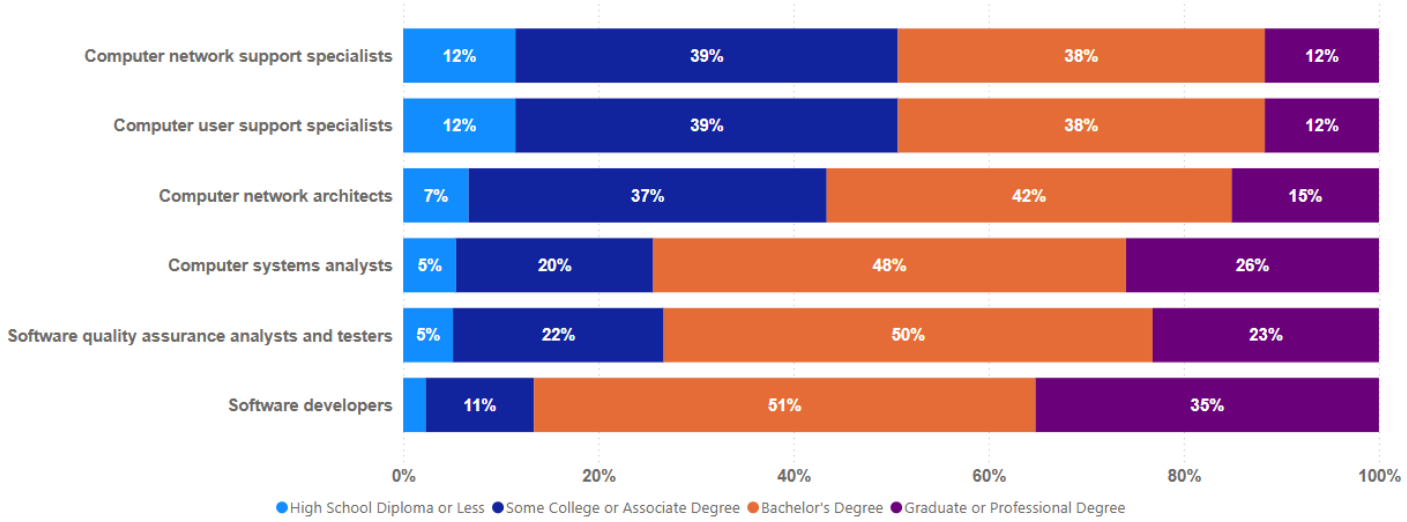
Exhibit 8 Minimum educational requirements in job postings for this occupational group, IE/D Region, Aug 2024 – Jul 2025



SOURCE: LIGHTCAST 2025.3

For the assessed occupations, the Bureau of Labor Statistics (BLS) education attainment data in Exhibit 9 for current professionals in the occupations of interest indicates that between 11% and 39% of workers have completed some college or an associate degree as their highest level of education.

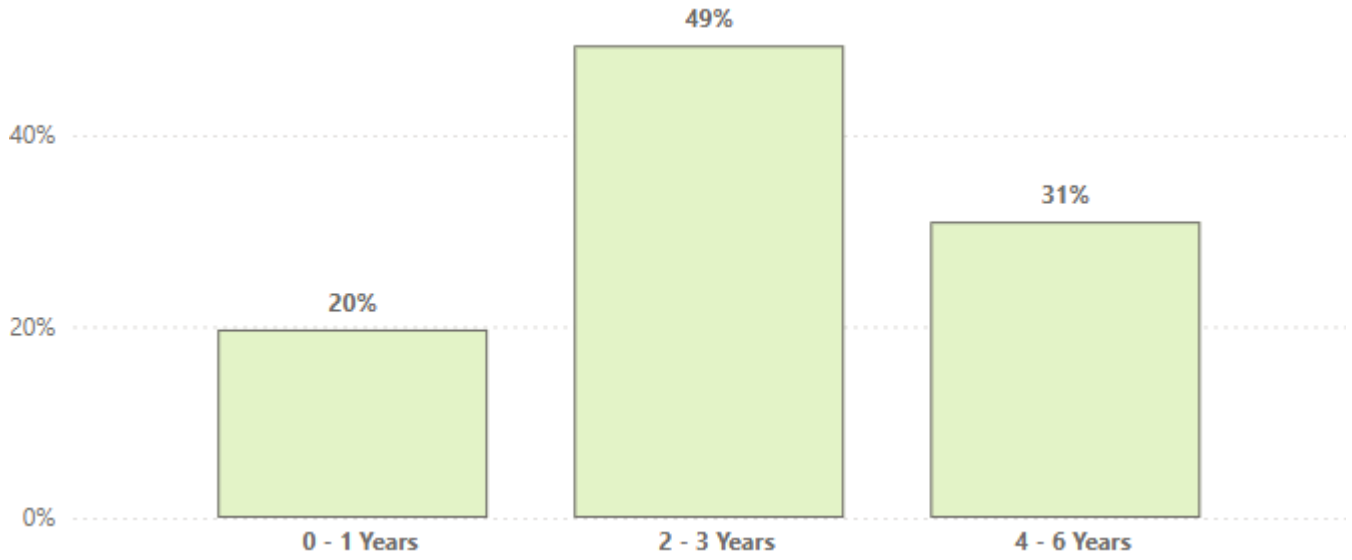
Exhibit 9 National-level Education Attainment for the Occupational Group



SOURCE: BLS 2021

Exhibit 10 displays the work experience typically required from employer job ads for this occupational group. The plurality (49%) of employers listing minimum experience requirements sought candidates with 2-3 years of previous work experience.

Exhibit 10 Work experience requirements, IE/D Region, Aug 2024 – Jul 2025



SOURCE: LIGHTCAST 2025.3

Student Completions and Program Outcomes

Exhibit 11 displays student completions for the Computer Information Systems (TOP 0702.00) programs over the last three academic years (2021-2024). In the previous three academic years, 9 regional community colleges issued an average of 155 awards in relevant programs.

Exhibit 11 Annual average community college awards for Computer Information Systems (TOP 0702.00), IE/D, 2021-2024

Top Code	Program	College	2021-2022 Awards	2022-2023 Awards	2023-2024 Awards	3-Year Award Average
0702.00	Computer Information Systems	Barstow	12	27	78	39
0702.00	Computer Information Systems	Victor Valley	32	30	38	33
0702.00	Computer Information Systems	Chaffey	24	26	45	32
0702.00	Computer Information Systems	Mt. San Jacinto	29	25	26	27
0702.00	Computer Information Systems	San Bernardino	7	14	11	11
0702.00	Computer Information Systems	College of the Desert	3	6	6	5
0702.00	Computer Information Systems	Crafton Hills	8	6	1	5
0702.00	Computer Information Systems	Copper Mountain	3	3	0	2
0702.00	Computer Information Systems	Palo Verde	0	2	3	2
Total			**118**	**139**	**208**	**155**

SOURCE: MIS DATA MART

Non-Community College Supply

Exhibit 12 displays award completion data available for these IE/D non-community college programs: Computer and Information Sciences, General (CIP 11.0101), Information Technology (CIP 11.0103), Computer Systems Analysis/Analyst (CIP 11.0501).

However, student award completion data was not found in the IE/D for other related non-community college programs: Data Science, General (CIP 30.7001), Data Analytics, General (CIP 30.7101), Data Visualization (CIP 30.7103).

In the previous three academic years, 7 regional non-community college institutions issued an average of 376 awards in relevant programs.

Exhibit 12 Annual average non-community college awards for computer systems support programs, IE/D, 2020-2023

CIP	Program	College	2020-2021 Awards	2021-2022 Awards	2022-2023 Awards	3-Year Award Average
11.0103	Information Technology	DeVry University-California	45	120	212	126
11.0103	Information Technology	California State University-San Bernardino	134	145	154	144
11.0501	Computer Systems Analysis/Analyst	DeVry University-California	46	49	23	39
11.0101	Computer and Information Sciences, General	University of Redlands	8	14	19	14
11.0103	Information Technology	California Baptist University	25	11	13	16
11.0103	Information Technology	Platt College-Riverside	8	6	13	9
11.0103	Information Technology	Platt College-Ontario	14	9	12	12
11.0103	Information Technology	University of Phoenix-California	27	16	4	16
11.0501	Computer Systems Analysis/Analyst	University of Phoenix-California	1	0	0	0
Total			**308**	**370**	**450**	**376**

SOURCE: IPEDS

Strong Workforce Program Outcomes

California SWP program outcome data may provide useful insight into the likelihood of success for the proposed program. Community college student outcome information based on the selected TOP code and region is provided in Exhibit 13.

Exhibit 13 Computer Information Systems strong workforce program outcomes, IE/D & California, AY 2022-23

Program Metric Title	Inland Empire	Statewide
Students	6,762	24,271
Earned 9+ Career Education Units	31%	35%
Completed Noncredit Workforce Preparation Milestone	64%	60%
Earned an Award: Degree or Cert or Attained Appren. Journey Level Status	2%	3%
Transferred to a Four-Year Institution: Four-Year Postsecondary Institution	6%	8%
Median Annual Earnings	$37,000	$41,582
Median Change in Earnings	32%	28%
Attained Living Wage	40%	39%

SOURCE: DATAVISTA

Appendix: Methodology

Exhibit 11 displays the average annual California Community College (CCC) awards conferred during the three academic years between 2021 and 2024 from the California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart. Awards are the combined total during the timeframe, divided by three in this case to calculate an annual average. This is done to minimize the effect of atypical variations that might be present in a single year.

Community college student outcome information is from DataVista and based on the selected TOP code and region. These metrics are based on records submitted to the California Community Colleges Chancellor's Office Management Information Systems (MIS) by community colleges, which come from self-reported student information from CCC Apply and the National Student Clearinghouse. Employment and earnings metrics are sourced from California's Employment Development Department's Unemployment Insurance database. When available, outcomes for completers are reported to demonstrate the impact that earning a degree or certificate can have on employment and earnings. For more information on the types of students included for each metric, please see the web link for DataVista's Strong Workforce Program Metrics Data Element Dictionary in the Resources section (DataVista, 2025).

Appendix: References

Type of Data	Source
Occupational Projections, Wages, and Job Postings	Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment. https://lightcast.io/
Living Wage (UW)	Center for Women's Welfare, University of Washington. (2024). The self-sufficiency standard for California 2024. http://www.selfsufficiencystandard.org/California. The COE refers to the Self-Sufficiency Wage as a "living wage." This calculation measures the income necessary for an individual of family to afford basic expenses. The data assesses the cost of housing, food, childcare, health care, transportation, and taxes. The living wage for one adult in San Bernardino County is $20.07 per hour ($42,392 annually). The living wage for one adult in Riverside County is $20.76 per hour ($43,854 annually). The average living wage to represent Inland Empire/Desert is $20.42 per hour ($43,123 annually).
Living Wage (MIT)	Glasmeier, A. K. (2024). *Living wage calculator*. Massachusetts Institute of Technology. Accessed on April 14, 2025, https://livingwage.mit.edu/states/06/locations The living wage is derived from MITs Living Wage Calculator, which measures the income necessary for an individual of family to afford basic expenses. The data assesses the cost of housing, food, childcare, health care, transportation, and taxes. For more information, see: https://livingwage.mit.edu/pages/methodology The living wage for one adult in San Bernardino County is $25.17 per hour ($52,353.60 annually). The living wage for one adult in Riverside County is $26.30 per hour ($54,704 annually). The average living wage to represent Inland Empire/Desert is $25.74 per hour (53,539.20 annually)
Typical Education and Training Requirements, and Educational Attainment	The Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. BLS uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. For more information, see https://www.bls.gov/emp/documentation/education/tech.htm
Educational Supply	The CCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: https://datamart.cccco.edu The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the

	number of postsecondary awards earned (completions). For more information, see https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions
Student Metrics and Demographics	DataVista aims to provide up-to-date and useful information on students within the California Community Colleges and its Adult Education partners. DataVista is a modernization of the supporting architecture and visualization of metrics previously available on the LaunchBoard. DataVista is a collaboration between the California Community Colleges Chancellor's Office and WestEd, see: https://datavista.cccco.edu/data_views/swp_report