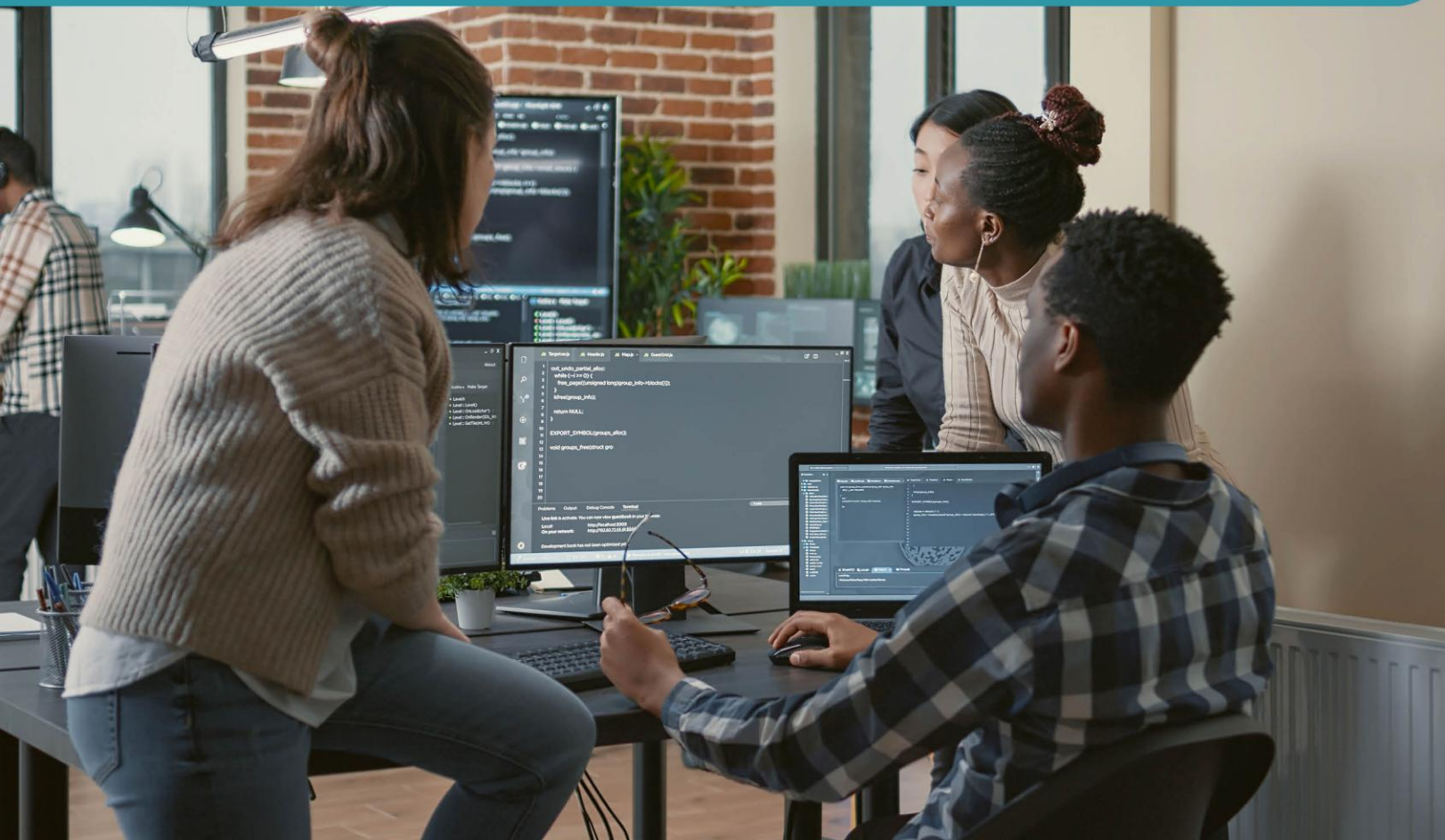




# SKILLS THAT SUPPORT THE CCCCCO INFORMATION & COMMUNICATIONS TECHNOLOGIES AND DIGITAL MEDIA (ICT-DM) SECTOR

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INLAND EMPIRE/DESERT REGION



FOR LABOR MARKET RESEARCH  
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## ACKNOWLEDGEMENTS

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## EXECUTIVE SUMMARY

The California Community College Chancellor's Office (CCCCO) Information and Communication Technologies/Digital Media Priority Sector (ICT/DM) in the Inland Empire/Desert Region accounts for 35,025 jobs in 2024 and is projected to grow by 8% by 2029. Middle-skill ICT/DM occupations, those requiring more than a high school diploma but less than a four-year degree, represent 39% of all ICT/DM-sector jobs and generate over 1,100 annual openings. Approximately 58% of ICT/DM-sector jobs are above middle-skill, due to the high education and experience requirements, indicating that this sector provides ample long-term employment opportunities for middle-skill workers willing to increase their skills over time.

This report examines the skills that define middle-skill ICT/DM occupations, relying on employer job postings for two major occupational groups that together accounted for 13,459 regional jobs in 2024. Using a comparison of two date periods, 2018–2023 and 2023–2025, the analysis identifies which skills are increasing, shrinking, or persistently demanded across the sector.

### Key Findings

#### **Employer demand is shifting toward technical competencies.**

Across occupational groups, foundational skills remain some of the largest competencies requested by employers, with communication, troubleshooting (problem solving), customer service, and operations appearing as a top skill statewide and regionally (e.g., Exhibits 2.1.6, 2.2.6). Furthermore, over half of growing skills are foundational (~53%).

While a majority of growing skills are foundational, the analysis (Section 3) shows that approximately 45% of all growing skills are technical or specialized, reflecting rising expectations for computer science and cyber security skills.

These skills have grown significantly across multiple minor occupational groups (e.g., Exhibits 2.1.4, 2.1.5, 2.2.4, 2.2.5) and point to an evolving operating environment where applied knowledge and electrical expertise play a larger role in daily work.

#### **Customer focused skills are declining across the sector.**

The shrinking-skills analysis shows a trending decline in customer oriented-skills, including:

- Verbal Communication Skills
- Sales
- Customer Service

More than 73% of shrinking skills fall within foundational category, but they represent tasks that employers increasingly assume will be supported by other roles or automated systems and the focus is now on problem solving skills which cannot be fully automated at this time (Exhibits 2.1.7, 2.2.7).

Even within specialized technical categories, the declining skills tend to be customer-oriented skills, such as verbal communication, sales, and customer service skills, that may be replaced by automated functions or other roles that perform these tasks for the user.

#### **Certifications continue to anchor employer expectations.**

Qualifications data across all two occupational groups are less prevalent (the median is less than 10%) compared to other sectors such as Healthcare, but common trends exist including:

- Valid Driver's License
- Commercial Driver's License (CDL)
- Security Clearance
- CompTIA A+
- CompTIA Network+

These credentials appear more consistently than many skills and often serve as the clearest signal of job readiness (e.g., Exhibits 2.1.9, 2.2.9).

### **These patterns reveal a structural shift in middle-skill ICT/DM work.**

Across the sector, employer postings increasingly emphasize competencies requiring troubleshooting (problem solving), operations, and communication and de-emphasizing skills tied to customer communication. This reflects a broader transition in ICT/DM workplaces in which digital systems, reduced client interactions, and AI-enabled tools reduce the need for direct communication with the customer base (Section 3).

As a result, middle-skill ICT/DM workers are expected to engage less directly in the verbal communication and customer service dimensions of this field, and focus more on technical operations.

### **Implications for Education & Training in the Inland Empire/Desert Region**

The regional shift in skill demand points to several opportunities for K12 and community college programs to strengthen workforce alignment:

#### **1. Align curriculum with rising foundational and technical skills.**

Programs should integrate communications, operations, auditing, computer science, and cyber security skills, showing the strongest growth across minor occupational groups (Section 3).

#### **2. Embed credentials within program structures.**

Given the consistency of employer demand for vehicle operations and security clearances, and other certifications, colleges should map coursework, field work, and internships directly to these credentials. K12 pathways can strengthen 9–14 alignment by offering exposure or dual enrollment opportunities in areas related to technology certifications and cybersecurity.

#### **3. Strengthening K12 pathway - Community College ICT/DM Pathway Alignment**

The qualification and program lists can aid K12 partners aligning foundational health pathway courses with postsecondary preparation. High schools offering Information Support and Services, Networking, Software and Systems Development, and Games and Simulation pathways can integrate early exposure to skills such as Amazon Web Services, ArcGIS, leadership, operations, and auditing.

### **Conclusion**

The CCCCO ICT/DM Priority Sector is a key part of the Inland Empire/Desert Region workforce, and employer demand within this sector is shifting toward both human-centered foundational skills and higher-level technical competencies. At the same time, soft skills are declining as digital systems take on a larger role in ICT/DM operations and the need for customer service in this field declines.

This report is a part of a ten-sector series that provides a skills-based roadmap for strengthening workforce preparation across K12, community colleges, and regional partners. Together with forthcoming analyses on artificial intelligence, job creation strategies, and climate-related shifts in the regional economy, this work will guide the development of programs that equip learners for the demands of today's information and communication technologies/digital media sector, and the transformations ahead.

## INTRODUCTION

The purpose of this report is to strengthen community college program development and review by aligning regional education pathways with the evolving skill needs of the Inland Empire/Desert economy. Using the California Community Colleges Chancellor's Office (CCCCO) priority sector framework as its foundation, this analysis focuses on the skills that define and sustain the region's middle-skill information, communications, and digital media technologies workforce, providing research for K12 schools and community colleges to examine how well programs prepare students for occupations within this priority sector.<sup>1</sup>

This report examines the specialized and foundational skills appearing in employer job postings for middle-skill ICT-DM occupations. Middle-skill occupations are those that typically require more than a high school diploma, but less than a four-year degree, and are largely associated with community college CTE programs, placing community colleges at the center of preparing the workforce that supports regional ICT-DM delivery.

This report is one in a ten-part series that leverages the CCCCCO priority sector association to the region's middle-skill occupations. The first four sector reports will be released ahead of a companion analysis examining how artificial intelligence, job creation strategies, and emerging climate and clean-tech initiatives, outlined in the Thrive Inland SoCal California Jobs First Regional Plan, are reshaping skill demand in cybersecurity, manufacturing, climate innovation, and technology occupations.<sup>2</sup> That research will sit alongside the sector series to help colleges understand both current and future drivers of workforce change. Following the release of this broader analysis, the COE will complete the remaining sector reports (sectors five through ten), providing a full view of skill needs across the regional economy.

The ten-part skills analysis reports will be released in the following order:

1. Health
2. Energy, Construction, and Utilities,
3. Advanced Manufacturing
4. Information and Communication Technologies/Digital Media (ICT/DM)
5. Business and Entrepreneurship
6. Advanced Transportation and Logistics
7. Retail, Hospitality, and Tourism
8. Public Safety
9. Education and Human Development
10. Agriculture, Water, and Environmental Technologies

The report seeks to answer three major questions:

- SECTION 1: How does the middle-skill ICT-DM workforce support the regional economy?
- SECTION 2: What skills are essential for middle-skill ICT-DM workers?
- SECTION 3: How can skills information be used to guide career education program development in the Inland Empire/Desert region?

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<sup>1</sup> <https://www.cccco.edu/About-Us/Chancellors-Office/Divisions/Workforce-and-Economic-Development/Strong-Workforce-Program/SWP-Archive/Events/K12-SWP-Industry-Sector-Crosswalk>

<sup>2</sup> Thrive Inland SoCal California Jobs First (CJF) Regional Plan Part II. 2024. Retrieved from: <https://www.labor.ca.gov/wp-content/uploads/sites/338/2024/11/Inland-SoCal-RPP2-DRAFT.pdf>

## METHODOLOGY

This report analyzes the skills that are essential to the middle-skill workforce in occupations that are associated with the California Community College Chancellor's Office (CCCCO) Information & Communications Technologies and Digital Media Sector (ICT-DM). The Chancellor's Office grouped career and technical education programs into twelve priority sectors, further referred to as CCCCCO priority sectors<sup>3</sup>. The grouping of community college programs by CCCCCO priority sector facilitates the analysis of programs and occupations that have similar knowledge bases and skillsets. The Center of Excellence, in collaboration with the CCCCCO, developed a crosswalk that identifies vocational occupations associated with each program code. This crosswalk serves as the foundation for program and workforce assessments by the CCCCCO priority sector. Please note that the CCCCCO priority sector should not be confused with the industry employment sectors identified by the North American Industry Classification System (NAICS). Additionally, only ten CCCCCO reports will be developed as the Life Sciences/Biotech and Global Trade priority sectors are typically rolled up into the larger sectors, Health and Business and Entrepreneurship, respectively.

Skills considered essential to the ICT-DM CCCCCO Priority Sector occupations were identified through an analysis of employer job advertisements. Job advertisement information, such as skills and qualifications, was obtained from Lightcast's Job Posting Analytics, which aggregates job advertisements posted over 220,000 current and historical sources.<sup>4</sup> To provide a more nuanced perspective and to ensure the utility of this report, skills and qualifications information is analyzed at the minor occupation group level.

The Standard Occupational Classification (SOC) system aggregates occupation information by four levels: major group, minor group, broad occupation, and detailed occupation.<sup>5</sup> This report relies on the minor occupational groupings of detailed occupations for the skills analysis as it provides greater detail than the broader major occupational groups and ensures the feasibility and readability of this study that would lack in a detailed occupation skills analysis.

The following is an example of the SOC coding structure for Computer User Support Specialists (15-1232).

- Major Occupational Group: Computer and Mathematical Occupations (15-0000)
  - Minor Occupational Group: Computer Occupations (15-1200)
    - Broad Occupation: Computer Support Specialists (15-1230)
      - Detailed Occupation: Computer User Support Specialists (15-1232)

Minor occupational groups enable this report to focus on occupations connected by similar work activities and area of focus in the priority sector, in order to determine what skills are either currently most in-demand, the demand is growing rapidly, or the demand is shrinking rapidly. This data will allow program designers, owners, and administrators to have a window into what skills employers need in their workforce for each group of occupations and how to plan for growing future needs.

This analysis focuses on minor occupational groups comprising three or more detailed occupations related to the CCCCCO ICT/DM sector. This ensures that the occupations are grouped by similar work activities and have sufficient job advertisements to analyze. As a result of this requirement, there are four occupations related to the CCCCCO ICT/DM sector that are not included in this skills analysis. A list of these occupations can be found in the Appendix.

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<sup>3</sup> DataVista Sector Explanation. 2024. Retrieved from: <https://datavista.cccco.edu/resources/7>

<sup>4</sup> Lightcast. Job Posting Analytics (JPA) Methodology. 2025. Retrieved from: <https://kb.lightcast.io/en/articles/6957446-job-posting-analytics-jpa-methodology>

<sup>5</sup> Bureau of Labor Statistics. Standard Occupational Classification and Coding Structure. 2018. Retrieved from: [https://www.bls.gov/soc/2018/soc\\_2018\\_class\\_and\\_coding\\_structure.pdf](https://www.bls.gov/soc/2018/soc_2018_class_and_coding_structure.pdf)

The skills analysis compares skills posted over a two-year period (October 2023 – September 2025) to a historical five-year period (October 2018 – September 2023) to identify skills that are growing and shrinking in terms of their prevalence in job ads. This report intentionally uses a two-year period for the current analysis to ensure a sufficient volume of recent job advertisements and avoid the instability that can come with relying on a single year of data. The five-year historical period provides a stable benchmark of longer-term industry skill patterns and reduces the influence of short-term fluctuations. This analysis also illuminates the skills with the highest share of job ads in the most recent period to address employer demand for skills that are persistently in-demand across time.

A goal for this research was to include skills in this report that are most significant for the CCCC Information & Communications Technologies and Digital Media sector workforce, based on how frequently they appear in employer job postings. To ensure the analysis focuses on skills that employers consistently value, only skills appearing frequently in job ads within each minor occupational group during the most recent period (October 2023–September 2025) were included.

The Lightcast taxonomy organizes skills into a tiered structure that groups related competencies according to the type of work or task they support. Within this framework, skills are categorized as common, specialized, or software skills. To determine which skills should be included in our analysis, we examined how frequently individual skills appear in job postings. We calculated the median share of job ads in which common skills appear across all occupations, providing a baseline measure of typical skill prevalence. Our analysis found that common skills typically appeared in roughly five percent of job postings across occupations. We used this median value as the threshold for determining which skills were included in our research.

The five percent threshold is sufficient to capture in-demand skills while eliminating skills included in job ads that are not essential for employment in the minor occupational group. Additionally, in-demand skills found in employer job ads posted throughout California are also included in this analysis to provide context for the regional skills data, highlighting nuances of the regional employment environment.

Foundational skills, or common skills, “are prevalent across many different occupations and industries, including both personal attributes and learned skills.”<sup>6</sup> Since these skills are found across industries, they are considered foundational for the workplace. Specialized skills, also known as technical skills, are those that equip an individual to perform specific tasks effectively.<sup>7</sup> Our analysis of specialized skills will denote whether these skills were specific to a minor occupation group, or were identified across multiple minor groups, appearing to be industry specific skills.

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<sup>6</sup> Lightcast. Skills Glossary. 2023. Retrieved from: <https://kb.lightcast.io/en/articles/7934140-skills>

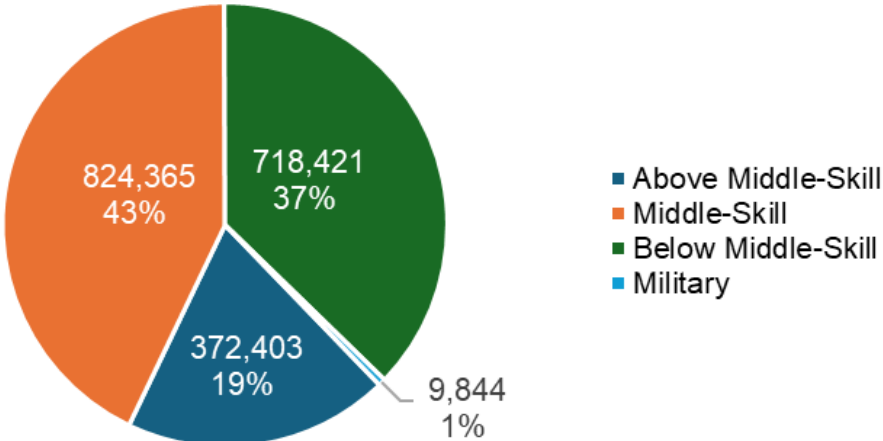
<sup>7</sup> Ibid.

# SECTION 1: HOW DOES THE MIDDLE-SKILL ICT/DM WORKFORCE SUPPORT THE REGIONAL ECONOMY?

## 1.1 REGIONAL EMPLOYMENT

In 2024, there were nearly 1.93 million jobs in the Inland Empire/Desert Region. Exhibit 1.1.1 displays the distribution regional jobs in 2024 jobs by skill level. Approximately 824,400 or 43% of regional jobs are middle skill. The number of regional jobs is projected to grow by over 139,000 through 2029, representing 7% job growth. While there are over 257,500 annual job openings expected between 2024 and 2029 across all jobs, these employment opportunities are not evenly distributed by skill level. Approximately 41% of annual job openings in the Inland Empire/Desert Region are expected for middle-skill workers at over 107,500 annual job openings.

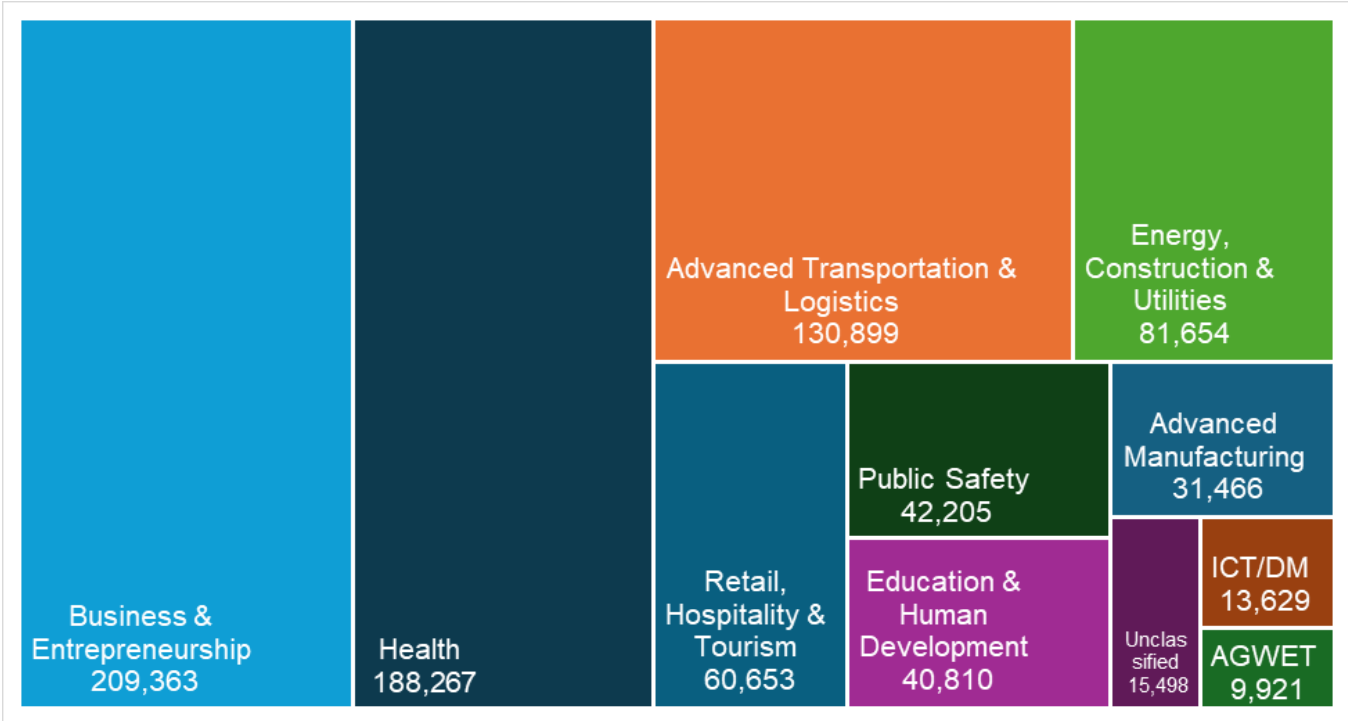
Exhibit 1.1.1: Distribution of Employment by Skill Level, Inland Empire/Desert Region, 2024



Source: Lightcast 2025.4 – Occupation Table, QCEW Employees, Non-QCEW Employees, and Self-Employed

Exhibit 1.1.2 displays the distribution of middle-skill employment by CCCCCO priority sector in the Inland Empire/Desert Region in 2024. ICT/DM employment is not a significant source of regional middle-skill employment, accounting for only 1.7% of middle-skill jobs in 2024. This CCCCCO priority sector is projected to provide approximately 1% of middle-skill annual job openings in the region between 2024 and 2029.

Exhibit 1.1.2: Distribution of Middle-Skill Employment by CCCC Priority Sector, Inland Empire/Desert Region, 2024



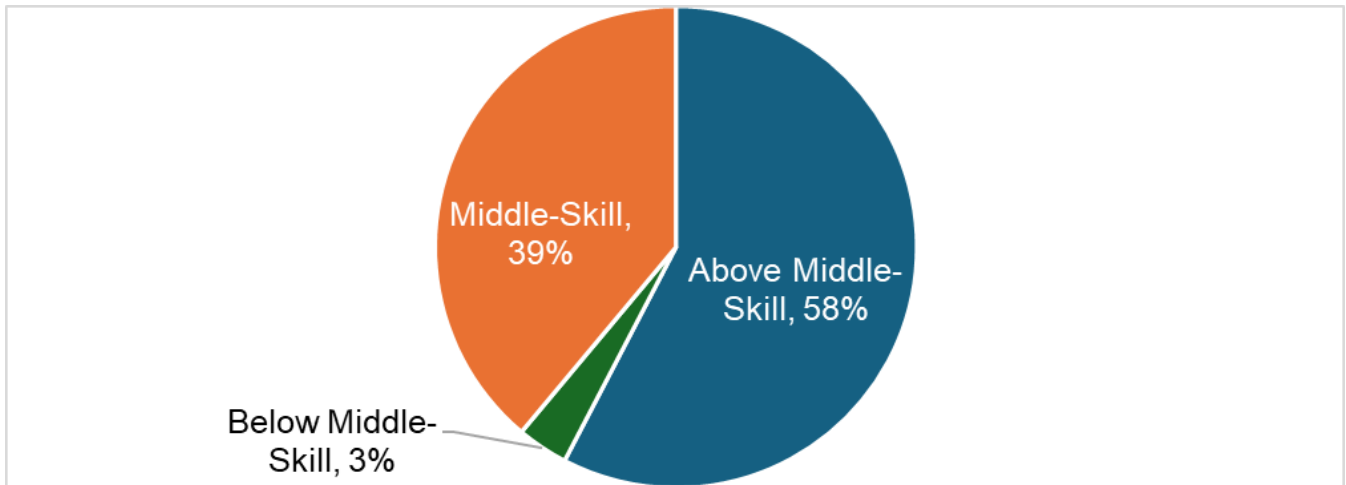
Source: Lightcast 2025.4 – Occupation Table, QCEW Employees, Non-QCEW Employees, and Self-Employed

**1.2: ICT/DM SECTOR OVERVIEW**

The CCCC ICT/DM priority sector is defined by the 36 TOP codes that prepare students for employment in the ICT/DM priority sector. Across all levels of educational attainment, experience, and training, there are 42 occupations related to the CCCC ICT/DM priority sector. While the CCCC ICT/DM priority sector is not currently a large source of regional employment, it provides workers with strong wages. Approximately 1.8% of regional jobs across all education levels are related to the CCCC ICT/DM priority sector, at 35,025 jobs in 2024. The share of regional employment is significantly less than California as a whole, at 5.2% and nationally, at 4.1%. Regional ICT/DM employment is projected to grow by 8.3% through 2029, aligned with the national growth rate at 8.3%, but significantly outpacing ICT/DM employment projected in California, at 5.5%.

Exhibit 1.2.1 displays the share of CCCC ICT/DM sector jobs by skill level in the Inland Empire/Desert Region in 2024. Approximately 58% of the CCCC ICT/DM sector jobs are related to the 23 above middle-skill occupations. The 15 middle-skill occupations in the CCCC ICT/DM account for 39% of 2024 jobs. There are four occupations below middle-skill, accounting for 3% of sector jobs, indicating fewer employment opportunities for individuals with less than a postsecondary education.

Exhibit 1.2.1: Distribution of Information and Communication Technologies/Digital Media Employment by Skill Level, Inland Empire/Desert Region, 2024



Source: Lightcast 2025.4 – Occupation Table, QCEW Employees, Non-QCEW Employees, and Self-Employed

Exhibit 1.2.2 displays minor occupational group employment for middle-skill occupations in the CCCC ICT/DM priority sector. This report provides an in-depth skills analysis for two minor occupational groups related to the CCCC ICT/DM priority sector, accounting for nearly 13,500 jobs in 2024. See Appendix for a list of the four middle-skill CCCC ICT/DM sector occupations not included in the skills analysis. Middle-skill ICT/DM occupations are projected to grow by 7% through 2029. Over 71% of annual job openings are projected for occupations in the computer occupations occupational group.

Exhibit 1.2.2: Middle-skill Information and Communication Technologies/Digital Media Employment by Minor Group, Inland Empire/Desert Region, 2024-2029

SOC Minor Group Title	2024 Jobs	2029 Jobs	2024 - 2029 % Change	Average Annual Openings	Occupation Count
Computer Occupations	10,453	11,116	6%	780	5
Media and Communications Equipment Workers	3,006	3,237	8%	311	6
<b>Middle-Skill Total</b>	<b>13,459</b>	<b>14,353</b>	<b>7%</b>	<b>1,091</b>	<b>11</b>

Source: Lightcast 2025.4 – Occupation Table, QCEW Employees, Non-QCEW Employees, and Self-Employed

The following section will analyze the specialized skills, foundational skills, qualifications, and programs for the above minor occupational groups.

# SECTION 2: WHAT SKILLS ARE ESSENTIAL FOR MIDDLE-SKILL ICT/DM WORKERS?

## 2.1: COMPUTER OCCUPATIONS

Exhibit 2.1.1 displays current and projected employment data for the computer occupational group from 2024 to 2029. The computer occupational group contains five occupations that had over 10,000 jobs in 2024. This occupational group is projected to grow by 6%, adding over 600 jobs to the region through 2029. This occupational group offers high median wages and there are more than 700 annual job openings projected over the next five years.

Exhibit 2.1.1: Current and Projected Employment for Computer Occupational Group, Inland Empire/Desert Region, 2024-2029

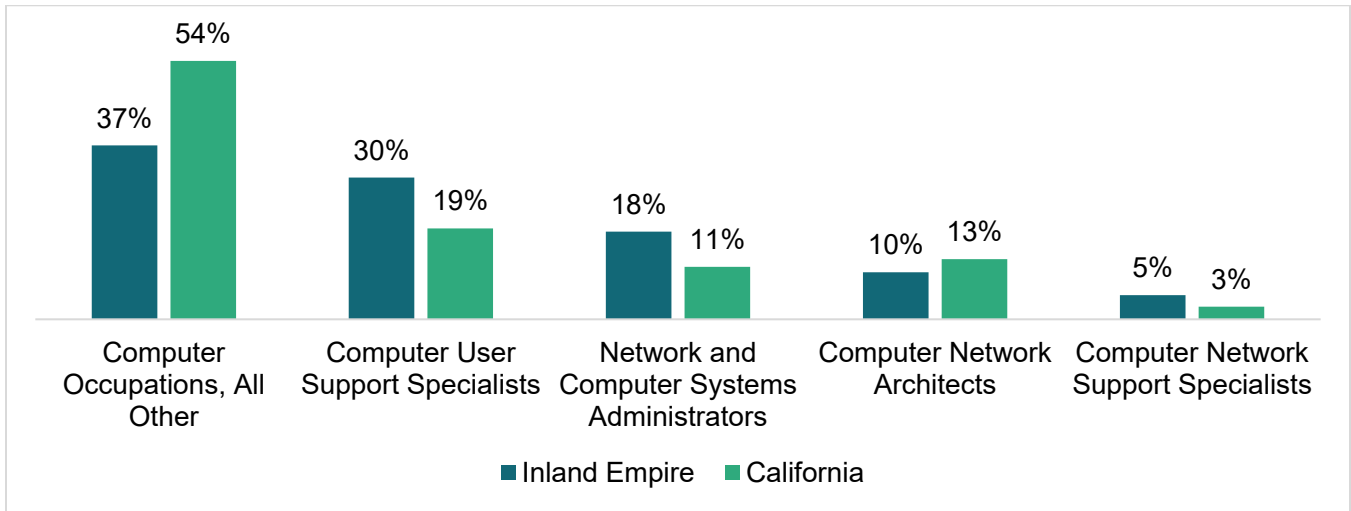
Occupation Title	2024 Jobs	2029 Jobs	2024-2029 % Change	Average Annual Openings	Median Hourly Earnings
Computer User Support Specialists	3,973	4,184	5%	302	\$31.71
Computer Occupations, All Other	3,332	3,601	8%	262	\$43.10
Network and Computer Systems Administrators	1,765	1,823	3%	107	\$47.53
Computer Network Support Specialists	737	800	9%	61	\$36.83
Computer Network Architects	647	709	10%	48	\$53.46
<b>Total</b>	<b>10,453</b>	<b>11,116</b>	<b>6%</b>	<b>780</b>	

Source: Lightcast 2025.4 – Occupation Table, QCEW Employees, Non-QCEW Employees, and Self-Employed

Over the last 24 months, October 2023 to September 2025, referred to as the “most recent period” going forward, 5,109 job ads were posted for computer occupational group in the Inland Empire, as compared to 130,875 job ads posted for the same occupations across California. In the previous period, October 2018 to September 2023, there were 18,044 job ads posted for this occupational group in the Inland Empire and 598,324 job ads posted in California.

Exhibit 2.1.2 displays the share of computer occupation job advertisements by occupation in the Inland Empire/Desert Region and California. Over 35% of the regional and statewide job ads were posted for computer occupations (all other), followed by computer user support specialists. The scale of these occupational job advertisements may influence the skills most frequently requested by employers for this occupational group.

Exhibit 2.1.2: Share of Advertisements by Occupation for Computer Occupations, Inland Empire/Desert Region and California, October 2023 – September 2025

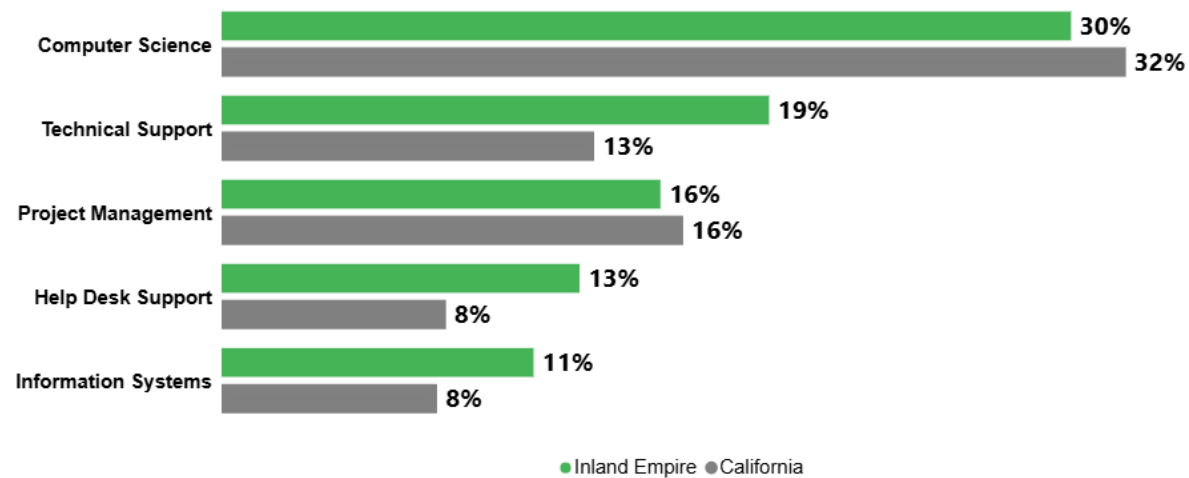


Source: Lightcast 2025.4 – Job Posting Analytics

### Specialized Skills

Exhibit 2.1.3 displays the top specialized skills included in employer job advertisements for computer occupations in the Inland Empire/Desert Region and their share of job ads in California. The top skills may provide insight into the specialized skills employers find critical to employment.

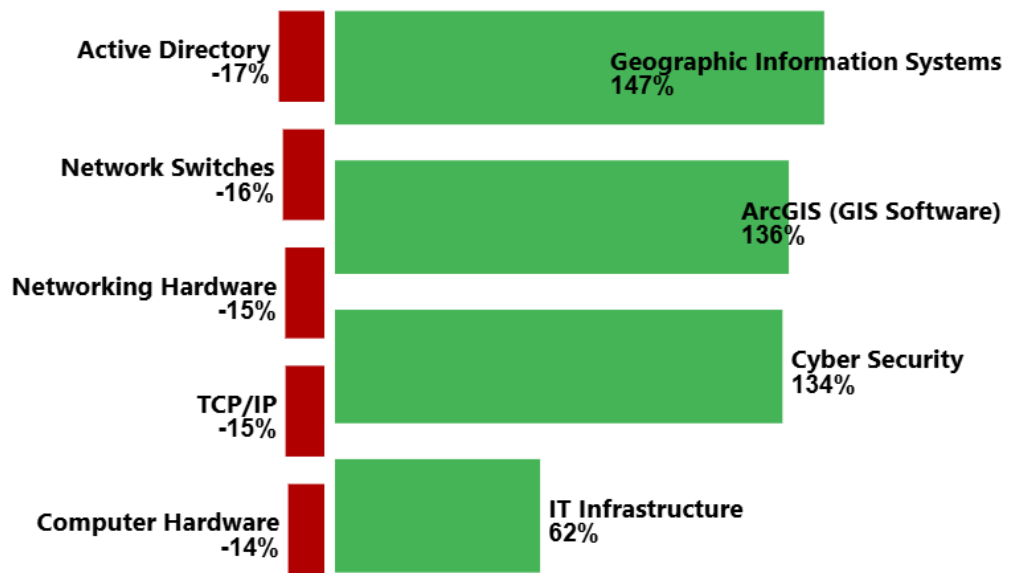
Exhibit 2.1.3: Top Specialized Skills from Employer Job Ads for Computer Occupations, Inland Empire/Desert Region and California, October 2023 – September 2025



Source: Lightcast 2025.4 – Job Posting Analytics

Exhibit 2.1.4 displays the specialized skills that have increased or decreased the most in their share of job advertisements for the computer occupational group in the Inland Empire/Desert Region, based on a comparison of the two time periods. Recent employer demand (2023-2025) for candidates with geographic information systems, ArcGIS (GIS software), and cyber security skills has more than doubled in prevalence since the previous period (2018-2023). Employers' desire for candidates with active directory skills has decreased by 17% between the two periods in the Inland Empire.

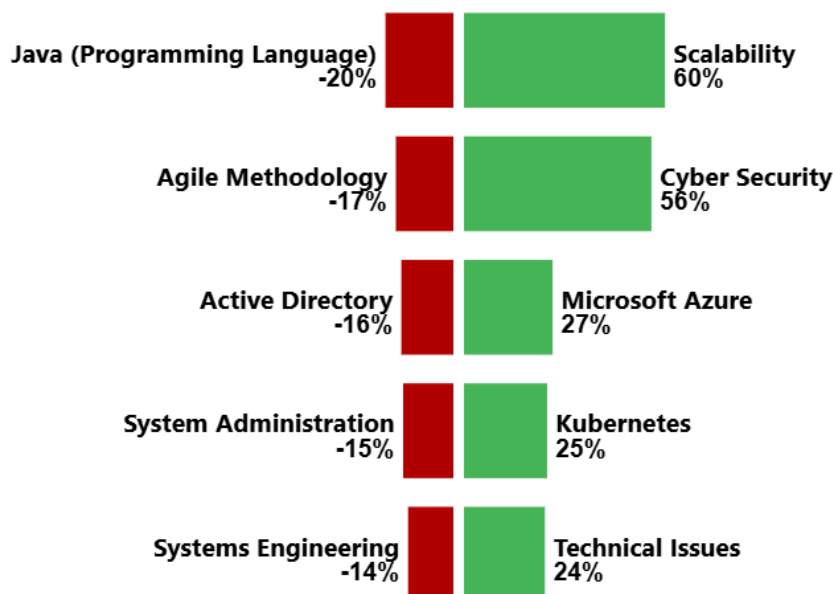
Exhibit 2.1.4: Specialized Skills that Have Increased or Decreased the Most in Their Share of Job Advertisements for Computer Occupations in the Inland Empire/Desert Region



Source: Lightcast 2025.4 – Job Posting Analytics

Exhibit 2.1.5 displays the specialized skills that have increased or decreased the most in their share of job advertisements for the computer occupational group in California, based on a comparison of the two time periods. Recent employer demand (2023-2025) for candidates with scalability and cyber security skills has increased by over 50% since the previous period (2018-2023). Employers' desire for candidates with Java (programming language) has decreased by 20% between the two periods in California.

Exhibit 2.1.5: Specialized Skills that Have Increased or Decreased the Most in Their Share of Job Advertisements for Computer Occupations in California

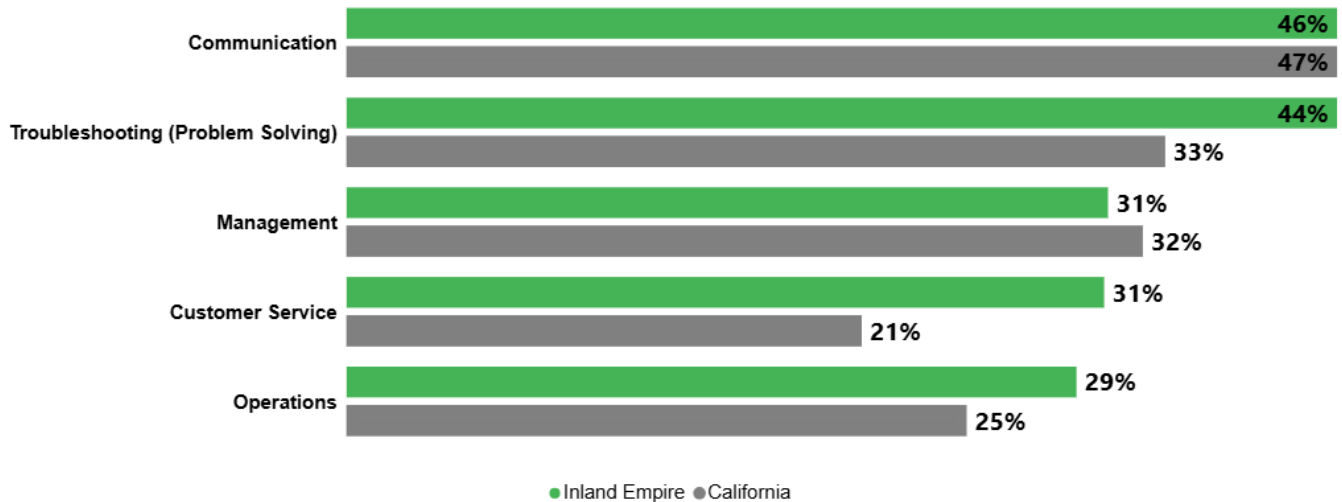


Source: Lightcast 2025.4 – Job Posting Analytics

## Foundational Skills

Exhibit 2.1.6 displays the top foundational skills included in employer job advertisements for computer occupations in the Inland Empire/Desert Region and their share of job ads in California. The top skills may provide insight into the foundational skills employers find critical to employment. Communication and troubleshooting (problem solving) was the top foundational skill for this occupational group across both regions.

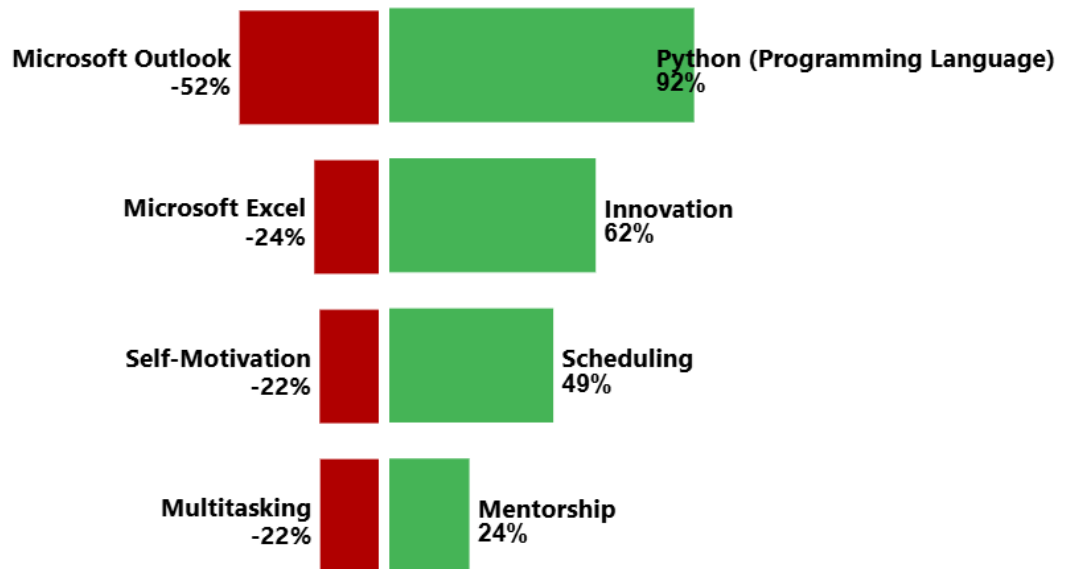
Exhibit 2.1.6: Top Foundational Skills from Employer Job Ads for Computer Occupations, Inland Empire/Desert Region and California, October 2023 – September 2025



Source: Lightcast 2025.4 – Job Posting Analytics

Exhibit 2.1.7 displays the foundational skills that have increased or decreased the most in their share of job advertisements for the computer occupational group in the Inland Empire/Desert Region, based on a comparison of the two time periods. Recent employer demand (2023-2025) for candidates with Python (programming language) skills has increased by 92% since the previous period (2018-2023). Employers' desire for candidates with Microsoft Outlook skills has decreased by 52% between the two periods in the Inland Empire.

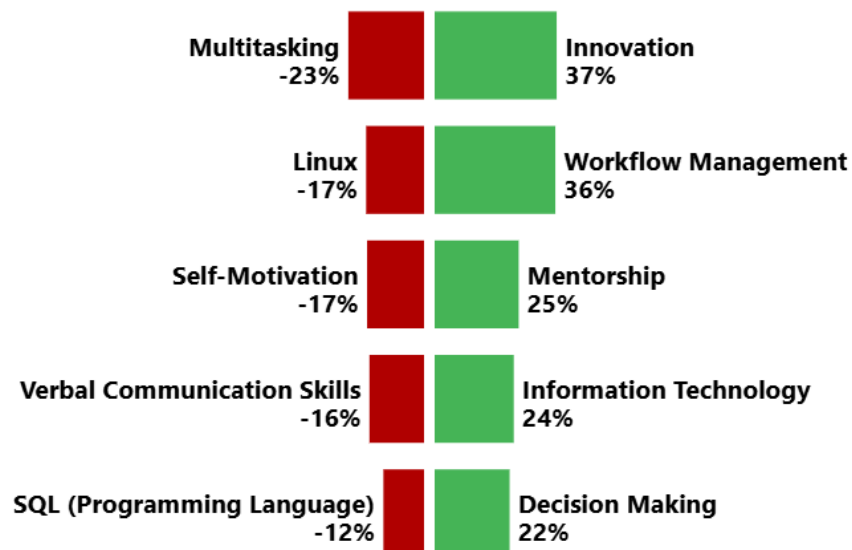
Exhibit 2.1.7: Foundational Skills that Have Increased or Decreased the Most in Their Share of Job Advertisements for Foundational Skills for Computer Occupations in the Inland Empire/Desert Region



Source: Lightcast 2025.4 – Job Posting Analytics

Exhibit 2.1.8 displays the foundational skills that have increased or decreased the most in their share of job advertisements for the computer occupational group in California, based on a comparison of the two time periods. Recent employer demand (2023-2025) for candidates with Innovation skills has grown by 37% since the previous period (2018-2023). Employers' desire for candidates with multitasking skills has decreased by 23% between the two periods in California.

Exhibit 2.1.8: Foundational Skills that Have Increased or Decreased the Most in Their Share of Job Advertisements for Computer Occupations in California



Source: Lightcast 2025.4 – Job Posting Analytics

## Qualifications and Programs

Exhibit 2.1.9 displays the qualifications most frequently included in employer job advertisements for computer occupations. A valid driver’s license was the most frequently requested qualification in regional employer job advertisements, appearing in approximately 12% of job ads.

Exhibit 2.1.9: Top Qualifications Skills from Employer Job Ads for Computer Occupations, Inland Empire/Desert Region and California, October 2023 – September 2025

Inland Empire/Desert Region		California	
Qualification	Share	Qualification	Share
Valid Driver's License	12%	Certified Information Systems Security Professional	5%
CompTIA A+	8%	Security Clearance	5%
Secret Clearance	6%	Valid Driver's License	5%
Security Clearance	5%	Secret Clearance	5%
CompTIA Network+	5%	Top Secret-Sensitive Compartmented Information (TS/SCI Clearance)	4%

Source: Lightcast 2025.4 – Job Posting Analytics

The following community college programs prepare students for employment in the computer occupational group.

- Agriculture Business, Sales and Service (0112.00)
- Biotechnology and Biomedical Technology (0430.00)
- Computer Information Systems (0702.00)
- Computer Infrastructure and Support (0708.00)
- Computer Networking (0708.10)
- Computer Programming (0707.10)
- Computer Software Development (0707.00)
- Computer Support (0708.20)
- Computer Systems Analysis (0707.30)
- Corrections (2105.10)
- Health Information Technology (1223.00)
- Information Technology, General (0701.00)
- Software Applications (0702.10)
- World Wide Web Administration (0709.00)

## 2.2: MEDIA AND COMMUNICATION EQUIPMENT WORKERS OCCUPATIONS

Exhibit 2.2.1 displays current and projected employment data for the media and communication equipment worker occupational group from 2024 to 2029. The media and communication equipment worker middle-skill occupational group contains 6 occupations that had more than 3,000 jobs in 2024. This occupational group is projected to grow by 8%, adding over 200 jobs to the region through 2029. All occupations in this group offer median wages at or above \$23 and are projected to have over 300 annual job openings over the next five years.

Exhibit 2.2.1: Current and Projected Employment the Media and Communication Equipment Worker Occupational Group, Inland Empire/Desert Region, 2024-2029

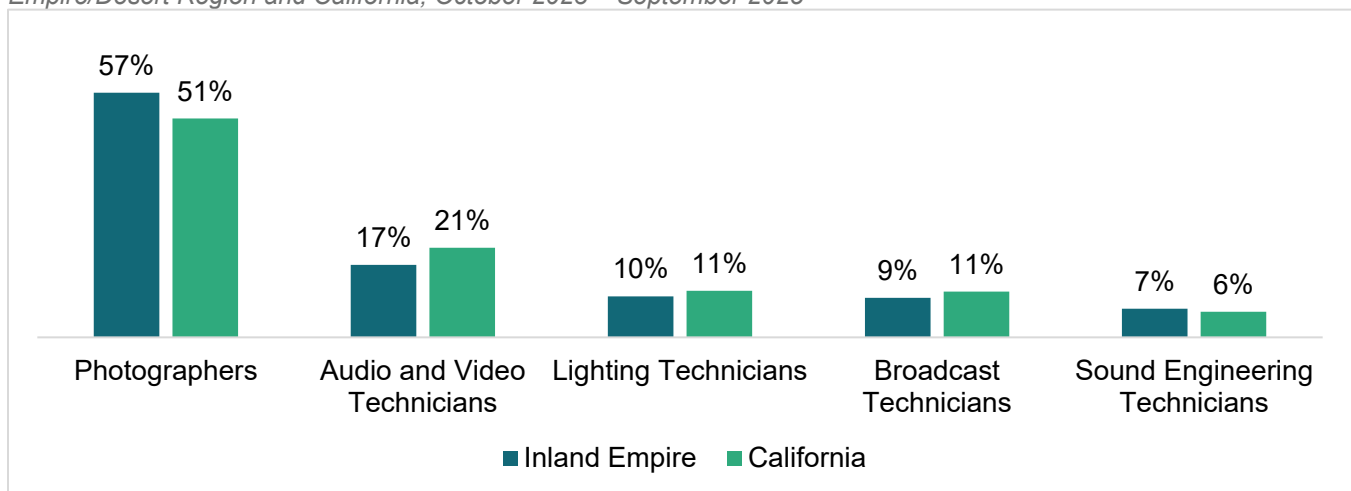
Occupation Title	2024 Jobs	2029 Jobs	2024-2029 % Change	Average Annual Openings	Median Hourly Earnings
Photographers	1,662	1,791	8%	172	\$24.17
Audio and Video Technicians	633	684	8%	66	\$27.77
Media and Communication Equipment Workers, All Other	368	369	0%	32	\$24.43
Sound Engineering Technicians	164	195	18%	21	\$30.67
Broadcast Technicians	100	109	9%	11	\$31.95
Lighting Technicians	79	88	12%	9	\$23.49
<b>Total</b>	<b>3,006</b>	<b>3,237</b>	<b>8%</b>	<b>311</b>	

Source: Lightcast 2025.4 – Occupation Table, QCEW Employees, Non-QCEW Employees, and Self-Employed

Over the last 24 months, October 2023 to September 2025, referred to as the “most recent period” going forward, 1,382 job ads were posted for the media and communication equipment worker occupational group in the Inland Empire, as compared to 17,234 job ads posted for the same occupations across California. In the previous period, October 2018 to September 2023, there were 3,456 job ads posted for this occupational group in the Inland Empire and 52,335 job ads posted in California.

Exhibit 2.2.2 displays the share of media and communication equipment worker job advertisements by occupation in the Inland Empire/Desert Region and California. Approximately 57% of the regional and statewide job ads were posted for photographers, followed by audio and video technicians. The scale of these occupational job advertisements may influence the skills most frequently requested by employers for this occupational group.

Exhibit 2.2.2: Share of Advertisements by Occupation for Media and Communication Equipment Workers, Inland Empire/Desert Region and California, October 2023 – September 2025



Source: Lightcast 2025.4 – Job Posting Analytics

### Specialized Skills

Exhibit 2.2.3 displays the top specialized skills included in employer job advertisements for media and communication equipment worker occupations in the Inland Empire/Desert Region and their share of job ads in California. The top skills may provide insight into the specialized skills employers find critical to employment.

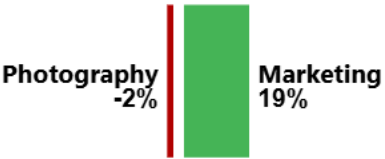
Exhibit 2.2.3: Top Specialized Skills from Employer Job Ads for Media and Communication Equipment Worker Occupations, Inland Empire/Desert Region and California, October 2023 – September 2025



Source: Lightcast 2025.4 – Job Posting Analytics

Exhibit 2.2.4 displays the specialized skills that have increased or decreased the most in their share of job advertisements for the media and communication equipment worker occupational group in the Inland Empire/Desert Region, based on a comparison of the two time periods. Recent employer demand (2023-2025) for candidates with marketing has increased by over 19% since the previous period (2018-2023). Employers’ desire for candidates with photography skills have decreased by 2% between the two periods in the Inland Empire.

Exhibit 2.2.4: Specialized Skills that Have Increased or Decreased the Most in Their Share of Job Advertisements for Media and Communication Equipment Worker Occupations in the Inland Empire/Desert Region



Source: Lightcast 2025.4 – Job Posting Analytics

Exhibit 2.2.5 displays the specialized skills that have increased or decreased the most in their share of job advertisements for the media and communication equipment worker occupational group in California, based on a comparison of the two time periods. Recent employer demand (2023-2025) has not shown any growth in specialized skills that are found in 5% or more of job ads. Employers’ desire for candidates with marketing has decreased by 11% between the two periods in California.

Exhibit 2.2.5: Specialized Skills that Have Increased or Decreased the Most in Their Share of Job Advertisements for Media and Communication Equipment Worker Occupations in California

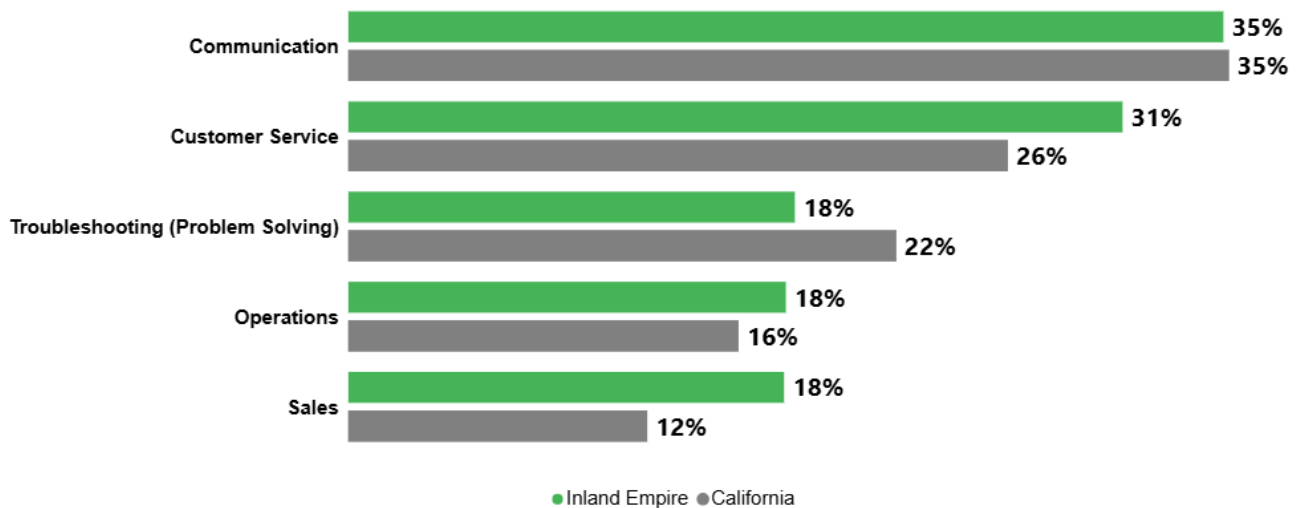


Source: Lightcast 2025.4 – Job Posting Analytics

### Foundational Skills

Exhibit 2.2.6 displays the top foundational skills included in employer job advertisements for media and communication equipment worker occupations in the Inland Empire/Desert Region and their share of job ads in California. The top skills may provide insight into the foundational skills employers find critical to employment. Communication was the top foundational skill for this occupational group across both regions.

Exhibit 2.2.6: Top Foundational Skills from Employer Job Ads for Media and Communication Equipment Worker Occupations, Inland Empire/Desert Region and California, October 2023 – September 2025

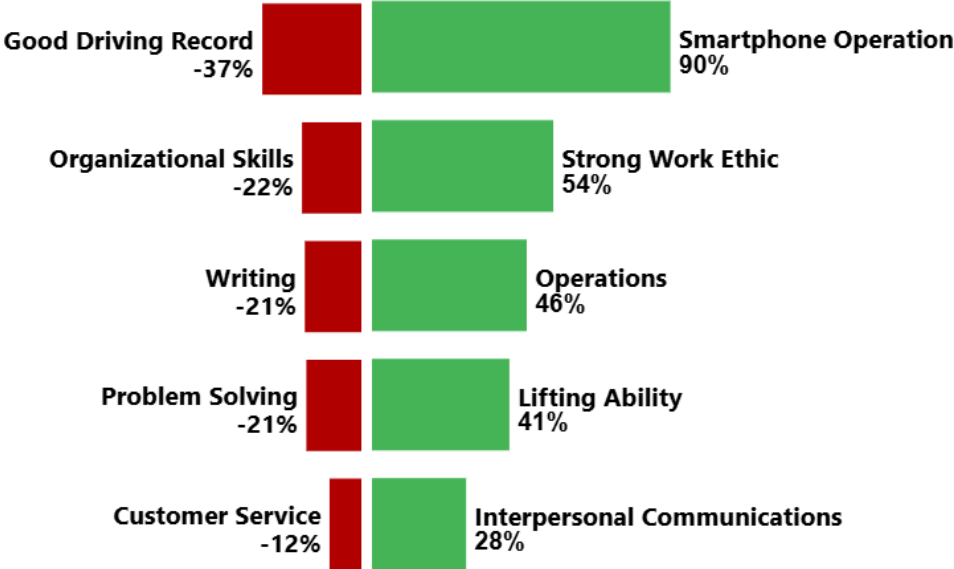


Source: Lightcast 2025.4 – Job Posting Analytics

Exhibit 2.2.7 displays the foundational skills that have increased or decreased the most in their share of job advertisements for the media and communication equipment worker occupational group in the

Inland Empire/Desert Region, based on a comparison of the two time periods. Recent employer demand (2023-2025) for candidates with smartphone operation skills has increased by 90% since the previous period (2018-2023). Employers' desire for candidates with good driving record skills has decreased by 37% between the two periods in the Inland Empire.

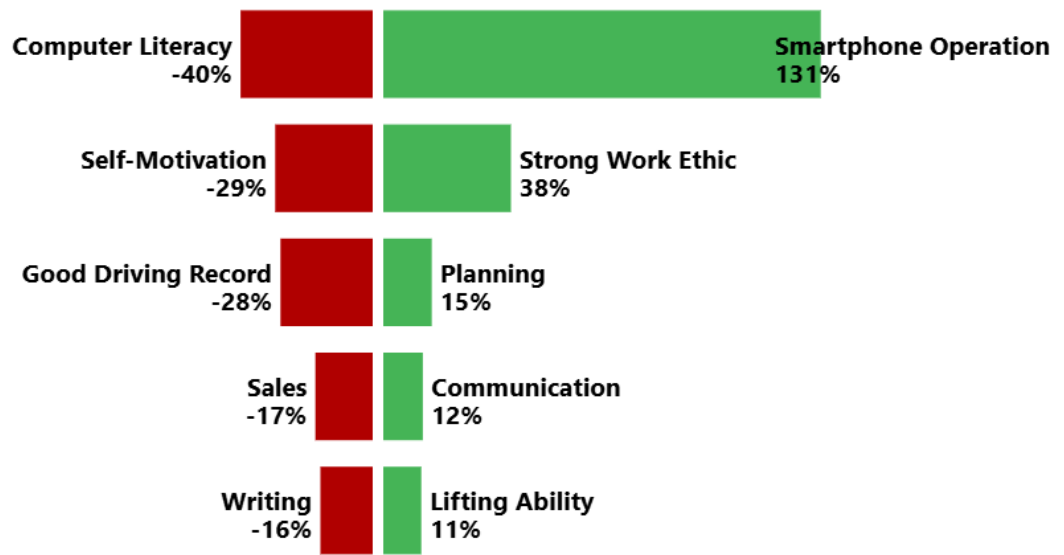
Exhibit 2.2.7: Foundational Skills that Have Increased or Decreased the Most in Their Share of Job Advertisements for Media and Communication Equipment Worker Occupations in the Inland Empire/Desert Region



Source: Lightcast 2025.4 – Job Posting Analytics

Exhibit 2.2.8 displays the foundational skills that have increased or decreased the most in their share of job advertisements for the media and communication equipment worker occupational group in California, based on a comparison of the two time periods. Recent employer demand (2023-2025) for candidates with smartphone operations has grown by 131% since the previous period (2018-2023). Employers' desire for candidates with computer literacy skills has decreased by 40% between the two periods in California.

Exhibit 2.2.8: Foundational Skills that Have Increased or Decreased the Most in Their Share of Job Advertisements for Media and Communication Equipment Worker Occupations in California



Source: Lightcast 2025.4 – Job Posting Analytics

### Qualifications and Programs

Exhibit 2.2.9 displays the qualifications most frequently included in employer job advertisements for media and communication equipment worker occupations. A valid driver’s license certification was the most frequently requested qualification in employer job advertisements, appearing in approximately one-fifth of job ads.

Exhibit 2.2.9: Top Qualifications Skills from Employer Job Ads for Media and Communication Equipment Worker Occupations, Inland Empire/Desert Region and California, October 2023 – September 2025

Inland Empire/Desert Region		California	
Qualification	Share	Qualification	Share
Valid Driver's License	21%	Valid Driver's License	20%
AVIXA Certified Technology Specialist	3%	AVIXA Certified Technology Specialist	3%
Drone Pilot Certificate	2%	Drone Pilot Certificate	1%
Security Clearance	2%	Security Clearance	1%
Secret Clearance	1%	Secret Clearance	1%

Source: Lightcast 2025.4 – Job Posting Analytics

The following community college programs prepare students for employment in the media and communication equipment worker occupational group.

- Applied Photography (1012.00)
- Commercial Music (1005.00)
- Digital Media (0614.00)
- Mass Communications (0610.00)
- Radio (0604.10)
- Radio and Television (0604.00)
- Television (including combined TV/Film/Video) (0604.20)

## SECTION 3: HOW CAN SKILLS INFORMATION BE USED TO GUIDE CAREER EDUCATION PROGRAM DEVELOPMENT IN THE INLAND EMPIRE/DESERT REGION?

To identify which skills are increasing most noticeably in employer demand, we compared their prevalence in job postings across the two time periods analyzed. We then examined how many middle-skill occupational minor groups each skill appeared in. Weighing skills by the number of occupational groups in which they increased provides a clearer indication of which skill shifts are occurring broadly across the sector rather than within isolated occupations. Below is the distribution within each skills tier for skills which are increasing by 10% or more:

- Foundational skills (53.5% IE/D; 62.1% California)
  - These are broad, transferable competencies that support communication, operations, auditing, and leadership. While not technical or occupation-specific, these skills are increasingly central to the provision of ICT/DM services, where operations and auditing skills are essential.
- Specialized or technical skills
  - Cross Sector (20.9% IE/D; 13.8% California)
    - These are more specialized/technical than foundational skills but still found in multiple sectors. They require more advanced training but are not unique to the ICT/DM field.
  - Occupation-specific: (25.6% IE/D; 24.1% California)
    - These are highly technical skills tied to particular roles or specialized tasks, such as computer science, cyber security, and Microsoft Azure. They require more advanced training and typically reflect the unique technical demands of specific ICT/DM occupations.

Using the same approach as described above, we present the distribution of skills that declined in prevalence between the two time periods. This approach highlights which skill declines are sector-wide rather than limited to a single occupational group. Below is the distribution within each skills tier for skills which are decreasing by 10% or more:

- Foundational skills (73.1% IE/D; 62.1% California)
  - The skills decreasing in prevalence are not the operations or leadership skills that appear in the growing analysis above. Instead, they are primarily customer facing and organizational competencies, such as customer service and sales, that reflect tasks more easily handled through digital tools or by other internal roles. Their decline across multiple occupational groups suggests that employers increasingly expect technology to support or streamline these functions.
- Specialized or technical skills
  - Cross Sector (15.4% IE/D; 13.6% California)
    - These declining skills tend to be broad or baseline ICT/DM competencies that employers increasingly treat as assumed knowledge rather than differentiating qualifications. Examples include active directory, networking hardware, network switches, network routing, and marketing. Their reduced appearances in postings does not indicate these skills are less important in practice; rather, employers no longer list them explicitly because they are expected of any working entering a middle-skill ICT/DM role.
  - Occupation-specific: (11.5% IE/D; 27.3% California)
    - Shrinking skills in this tier reflect baseline or non-differentiating technical activities that serve as foundational aspects of many ICT/DM occupations. These include skills such as computer hardware, help desk support, system administration, and

systems engineering. Their decline may suggest that employers assume proficiency in these competencies, or tools now exist to make these activities less reliant on experience, and they now prioritize more specialized or advanced skills in job postings.

The distribution of growing skills indicates that employer demand is shifting in two notable directions. Foundational skills, such as communication, operations, auditing, and leadership, remain essential across all middle-skill ICT/DM occupations and account for more than half of all skill growth (53.5% in the IE/D region). On the other hand, technical or specialized competencies that require deeper ICT/DM knowledge and hands-on proficiency, accounted for nearly 46.5% of skill growth between the two periods.

By comparison, the shrinking-skills shows a consistent decline customer facing and organizational competencies such as customer service and sales. More than 73% of shrinking skills fall within foundational categories. Within the technical tiers, the shrinking skills tend to be broad or baseline competencies (e.g., active directory, network hardware, and network routing) that employers appear to treat as assumed prerequisites rather than differentiating skills worth listing in job postings.

Taken together, these patterns reveal a clear transition in the nature of middle-skill ICT/DM work. Tasks that are routine and customer facing are declining across multiple occupational groups, reflecting functions that are increasingly supported, streamlined, or automated by digital systems and AI-enabled tools.<sup>8</sup> Conversely, the skills that are rising in prevalence are those that rely on human judgement, such as cybersecurity. These are domains where technology complements, rather than replaces, the work of middle-skill ICT/DM professionals.<sup>9</sup>

This shift underscores the importance of preparing students for strong foundational competencies that support modern, technology-enabled models of information and communication technologies/digital media. For K12 and community colleges, these findings highlight several opportunities to strength program design and student outcomes:

### **Curriculum alignment with growing skills.**

Growing skills indicate a need for stronger emphasis on both foundational and technical competencies. Colleges can review program and course learning outcomes to ensure rising skills, such as communication, operations, auditing, leadership, computer science, and cyber security, are explicitly and consistently taught. These competencies show the strongest growth across occupational minor groups and represent the skill sets most critical to modern, technology-integrated ICT/DM work. K12 ICT/DM pathways can introduce early exposure to these foundational competencies, so students enter community college programs with aligned expectations and baseline readiness.

### **Align curriculum and pathways to key certifications and credentials.**

Qualifications data across all minor occupational groups point to a consistent set of required and preferred certifications in the regional labor market. Programs can map course content directly to credentials ensuring students graduate with credentials employers actively request. Where possible, high schools can embed dual enrollment opportunities to accelerate student readiness and facilitate smoother transitions into community college ICT/DM programs.

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<sup>8</sup> University of Cincinnati, "AI and IT: How Artificial Intelligence is Changing Information Technology Jobs," <https://www.uc.edu/news/articles/uc/how-ai-is-changing-it-jobs.html?utm>

<sup>9</sup> Ibid.

**K12 Pathway Alignment.**

The qualification and program lists can aid K12 partners aligning foundational ICT/DM pathway courses with postsecondary preparation. High schools offering Information Support and Services, Networking, Software and Systems Development, and Games and Simulation pathways can integrate early exposure to skills such as Amazon Web Services, ArcGIS, leadership, operations, and auditing.

## APPENDICES

### A: RESEARCH DEFINITIONS AND METHODOLOGIES

#### Definitions

**Labor market information** was pulled from Lightcast, a labor market analytics firm that specializes in providing insights for workforce development, economic planning, and education. Lightcast compiles its regional and occupational datasets from a variety of federal and state sources. Among these are the Quarterly Census of Employment and Wages (QCEW), which offers detailed industry employment and wage data, and other critical sources such as the U.S. Census Bureau's American Community Survey (ACS) and Quarterly Workforce Indicators, the Bureau of Labor Statistics' Occupational Employment and Wage Statistics and Current Population Survey, and data from the Bureau of Economic Analysis.<sup>10</sup> These combined resources provide comprehensive insights into employment trends, wage patterns, and quality job workforce characteristics. The baseline year of 2024 was used to offer the maximum comparability with the student data available, and the projected data was through 2029.

**Annual job openings** include the projected growth (new jobs) and replacement needs of an occupation annually. This figure is often used to assess the expected employer demand for an occupation, providing a number of job openings that will require new workers to fill.

**Educational attainment** is the highest level of education attained by workers aged 25 years or older. This information may illuminate mismatches between resident skills and employment needs.

An **occupation** is a set of activities or tasks employees are paid to perform. Employees that perform essentially the same tasks are in the same occupation, whether or not they work in the same industry. Some occupations are concentrated in a few particular industries; other occupations are found in many industries. For example, jobs for registered nurses are concentrated in the healthcare industry sector, but educational industries may also employ these jobs.

**SOC code:** The Standard Occupational Classification system is a federally defined system used to classify workers into occupational categories that are grouped together according to job duties.<sup>11</sup>

**TOP code:** The Taxonomy of Programs is a system of codes used by the State of California to compare differently named academic programs with similar outcomes across community colleges.<sup>12</sup> Each course offered by California Community Colleges is assigned to a TOP code.

#### Methodologies and Sources

The data sources used in this study include data from Lightcast, a labor market analytics firm that specializes in providing insights for workforce development, economic planning, and education. Lightcast compiles its regional and occupational datasets from a variety of federal and state sources. Among these are the Quarterly Census of Employment and Wages (QCEW), which offers detailed industry employment and wage data, and other critical sources such as the U.S. Census Bureau's American Community Survey (ACS) and Quarterly Workforce Indicators, the Bureau of Labor Statistics' Occupational Employment and Wage Statistics and Current Population Survey, and data from the

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<sup>10</sup> Lightcast (2025). Version 2025.1. Retrieved from <https://lightcast.io/> in April 2025.

<sup>11</sup> "Standard Occupational Classification," Bureau of Labor Statistics, [bls.gov/soc/](https://bls.gov/soc/)

<sup>12</sup> "Taxonomy of Programs," California Community Colleges, <https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Educational-Services-and-Support/Academic-Affairs/What-we-do/Curriculum-and-Instruction-Unit/Files/TOPmanual6200909corrected12513>

Bureau of Economic Analysis. These combined resources provide comprehensive insights into employment trends, wage patterns, and industry-specific workforce characteristics across the Inland Empire/Desert regions.

The Lightcast taxonomy organizes skills into a tiered structure that groups related competencies according to the type of work or task they support. Within this framework, skills are categorized as common, specialized, or software skills. To determine which skills should be included in our analysis, we examined how frequently individual skills appear in job postings. We calculated the median share of job ads in which common skills appear across all occupations, providing a baseline measure of typical skill prevalence. Our analysis found that common skills typically appeared in roughly five percent of job postings across occupations. We used this median value as the threshold for determining which skills were included in our research.

The skills analysis compares skills posted over a two-year period (October 2023 – September 2025) to a historical five-year period (October 2018 – September 2023) to identify skills that are growing and shrinking in terms of their prevalence in job ads. This report intentionally uses a two-year period for the current analysis to ensure a sufficient volume of recent job advertisements and avoid the instability that can come with relying on a single year of data. The five-year historical period provides a stable benchmark of longer-term industry skill patterns and reduces the influence of short-term fluctuations. This analysis also illuminates the skills with the highest share of job ads in the most recent period to address employer demand for skills that are persistently in-demand across time.

The Standard Occupational Classification (SOC) system aggregates occupation information by four levels: major group, minor group, broad occupation, and detailed occupation. This report relies on the minor occupational groupings of detailed occupations for the skills analysis as it provides greater detail than the broader major occupational groups and ensures the feasibility and readability of this study that would lack in a detailed occupation skills analysis.

**APPENDIX B: ADDITIONAL OCCUPATIONS RELATED TO THE CCCC ICT/DM SECTOR**

Exhibit B.1 displays current and projected employment data for the miscellaneous occupational group from 2024 to 2029. The miscellaneous occupational group contains four occupations that had 170 jobs in 2024. Employment for this occupational group is projected to decline by 4%, shedding seven jobs to the region through 2029.

Exhibit B.1: Additional Occupations Related to the CCCC ICT/DM Sector, Inland Empire/Desert Region, 2024-2029

SOC Minor Group Title	2024 Jobs	2029 Jobs	2024 - 2029 % Change	Average Annual Openings	Median Hourly Earnings
Communications Equipment Operators, All Other	122	121	(-1%)	18	\$31.86
Desktop Publishers	24	19	(-21%)	2	\$27.77
Camera and Photographic Equipment Repairers	12	12	(0%)	1	\$28.83
Telephone Operators	12	11	(-7%)	1	\$24.45
<b>Total</b>	<b>170</b>	<b>163</b>	<b>(4%)</b>	<b>23</b>	<b>-</b>

Source: Lightcast 2025.4 – Occupation Table, QCEW Employees, Non-QCEW Employees, and Self-Employed

