



# Labor Market Information Report

## Virtual Production Occupations

### Regional Virtual Production Academy

(Diablo Valley College, Berkeley City College, Laney College,  
Ohlone College, Santa Rosa Junior College and Mission College)

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research

July 2023

#### Recommendation

Based on all available data, there appears to be an “undersupply” of Virtual Production workers compared to the demand for this cluster of occupations in the Bay region, the East Bay sub-region (Alameda, Contra Costa counties), the North Bay sub-region (Marin, Solano, Napa and Sonoma counties) and Silicon Valley sub-region (Santa Clara county). There is a projected annual gap of about 935 students in the Bay region, 213 students in the Silicon Valley sub-region, 183 students in the East Bay sub-region and 51 students in the North Bay sub-region.

#### Introduction

This report provides student outcomes data on employment and earnings for TOP 0699.00 - Other Media and Communications 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 colleges in the state and region.

This report profiles Virtual Production Occupations in the 12 county Bay region, East Bay sub-region, North Bay sub-region and Silicon Valley sub-region for a Regional Virtual Production Academy at Diablo Valley College, Berkeley City College, Laney College, Ohlone College, Santa Rosa Junior College and Mission College.

- **Special Effects Artists and Animators (27-1014):** Create special effects, animation, or other visual images using film, video, computers, or other electronic tools and media for use in products or creations, such as computer games, movies, music videos, and commercials.  
Entry-Level Educational Requirement: Bachelor’s degree  
Training Requirement: None  
Percentage of Community College Award Holders or Some Postsecondary Coursework: 26%
- **Producers and Directors (27-2012):** Produce or direct stage, television, radio, video, or motion picture productions for entertainment, information, or instruction. Responsible for creative decisions, such as interpretation of script, choice of actors or guests, set design, sound, special effects, and choreography.  
Entry-Level Educational Requirement: Bachelor’s degree  
Training Requirement: None  
Percentage of Community College Award Holders or Some Postsecondary Coursework: 20%
- **Camera Operators, Television, Video, and Film (27-4031):** Operate television, video, or motion picture camera to record images or scenes for various purposes, such as TV broadcasts, advertising, video production,

or motion pictures.

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: None

Percentage of Community College Award Holders or Some Postsecondary Coursework: 24%

## Occupational Demand

**Table 1. Employment Outlook for Virtual Production Occupations in Bay Region**

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Special Effects Artists and Animators	2,247	2,391	145	6%	1,381	276	\$37	\$52
Producers and Directors	5,341	5,743	402	8%	3,046	609	\$36	\$51
Camera Operators, Television, Video, and Film	485	529	44	9%	303	61	\$24	\$28
<b>Total</b>	<b>8,072</b>	<b>8,663</b>	<b>591</b>	<b>7%</b>	<b>4,729</b>	<b>946</b>		

Source: Lightcast 2022.3

**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 Virtual Production Occupations in East Bay Sub-region**

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Special Effects Artists and Animators	445	448	4	1%	242	48	\$29	\$47
Producers and Directors	1,151	1,193	42	4%	607	121	\$33	\$47
Camera Operators, Television, Video, and Film	133	137	4	3%	74	15	\$24	\$27
<b>Total</b>	<b>1,728</b>	<b>1,778</b>	<b>50</b>	<b>3%</b>	<b>923</b>	<b>184</b>		

Source: Lightcast 2022.3

**East Bay Sub-Region includes:** Alameda, Contra Costa Counties

**Table 3. Employment Outlook for Virtual Production Occupations in North Bay Sub-region**

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Special Effects Artists and Animators	139	139	0	0%	79	16	\$35.92	\$50.47
Producers and Directors	282	332	50	18%	202	40	\$28.68	\$41.43
Camera Operators, Television, Video, and Film	44	37	-7	-16%	23	5	\$27.67	\$24.37
<b>Total</b>	<b>465</b>	<b>509</b>	<b>44</b>	<b>9%</b>	<b>304</b>	<b>61</b>		

Source: Lightcast 2022.3

**North Bay Sub-Region includes:** Marin, Solano, Napa and Sonoma counties

**Table 4. Employment Outlook for Virtual Production Occupations in Silicon Valley Sub-region**

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earnings	Median Hourly Wage
Special Effects Artists and Animators	636	655	19	3%	371	74	\$36.62	\$48.09
Producers and Directors	1,120	1,223	103	9%	647	129	\$43.02	\$58.56
Camera Operators, Television, Video, and Film	68	87	19	28%	58	12	\$20.94	\$27.96
<b>Total</b>	<b>1,824</b>	<b>1,965</b>	<b>141</b>	<b>8%</b>	<b>1,076</b>	<b>215</b>		

Source: Lightcast 2022.3

**Silicon Valley Sub-Region includes:** Santa Clara county

### Job Postings in Bay Region and East Bay Sub-Region

**Table 5. Number of Job Postings by Occupation for latest 12 months (July 2022 - June 2023)**

Occupation	Bay Region	East Bay	North Bay	Silicon Valley
Special Effects Artists and Animators	470	37	13	168
Producers and Directors	978	170	53	258
Camera Operators, Television, Video, and Film	214	33	25	50

Source: Lightcast

**Table 6. Top Job Titles for Virtual Production Occupations for latest 12 months (July 2022 - June 2023)**  
**Bay Region**

Title	Bay	Title	Bay
Interaction Designers	103	VFX Artists	43
Executive Producers	97	Paid Media Managers	44
Videographers	84	Animators	35
Producers	74	Stage Managers	30
Associate Producers	70	Videographers/Editors	25
Video Producers	64	News Producers	24
Digital Producers	47	Game Producers	20
Creative Producers	45	Technical Animators	19
Motion Graphics Designers	44	Interactive Designers	17

Source: Lightcast

## Industry Concentration

**Table 7. Industries hiring Virtual Production Workers in Bay Region**

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2021)	Jobs in Industry (2026)	% Change (2021-26)	% Occupation Group in Industry (2022)
Internet Publishing and Broadcasting and Web Search Portals	1,464	1,709	17%	17%
Motion Picture and Video Production	898	920	2%	11%
Software Publishers	779	879	13%	10%
Television Broadcasting	576	436	-24%	6%
Independent Artists, Writers, and Performers	469	569	21%	6%
Cable and Other Subscription Programming	389	251	-35%	4%
Custom Computer Programming Services	311	350	13%	4%
Theater Companies and Dinner Theaters	226	374	66%	4%
Teleproduction and Other Postproduction Services	285	331	16%	4%
Advertising Agencies	174	164	-6%	2%

Source: Lightcast 2022.3

**Table 8. Top Employers Posting Virtual Production Occupations in Bay Region and East Bay Sub-Region (July 2022 – June 2023)**

Employer	Bay	Employer	East Bay
Google	59	CBS Broadcasting	29
Disney	40	Upgrow	26
VirtualVocations	33	Recruiting From Scratch	22
Aquent	33	Creative Circle	18
Electronic Arts	33	University of California	16
Apple	31	Meta	15

Source: Lightcast

## Educational Supply

There is one (1) community college in the Bay Region and Silicon Valley Sub-Region (San Jose City College) issuing two (2) awards on average annually (last 3 years ending 2019-20) on TOP 0699.00 – Other Media and Communications.

There are a two (2) other educational institutions in the Bay Region issuing 11 awards on average annually (last 3 years ending 2019-20) on CIP 09.9999 - Communication, Journalism and Related Programs, Other. There is one (1) other educational institution in the East Bay Sub-Region issuing one (1) award on average annually (last 3 years) on this CIP code. There is one (1) other educational institution in the North Bay Sub-Region issuing 10 awards on average annually (last 3 years) on this CIP code. There are no other educational institution in the Silicon Valley Sub-Region issuing awards on average annually (last 3 years) on this CIP code.

**Table 9. Other CTE Institutions Awards on CIP 09.9999 - Communication, Journalism and Related Programs, Other in Bay Region**

College	Subregion	Bachelor's degree	Total
Dominican University of California	North Bay	10	10
Saint Mary's College of California	East Bay	1	1
<b>Total</b>		<b>11</b>	<b>11</b>

Source: Data Mart

Note: The annual average for awards is 2017-18 to 2019-20.

## Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay region with 946 annual openings for the Virtual Production occupational cluster and 11 annual (3-year average) awards for an annual undersupply of 935 students.

In the Silicon Valley Sub-Region, there is also a gap with 215 annual openings and two (2) annual (3-year average) awards for an annual undersupply of 213 students.

In the East Bay Sub-Region, there is also a gap with 184 annual openings and one (1) annual (3-year average) awards for an annual undersupply of 183 students.

In the North Bay Sub-Region, there is also a gap with 61 annual openings and 10 annual (3-year average) awards for an annual undersupply of 51 students.

## Student Outcomes

**Table 10. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0699.00 - Other Media and Communications**

Metric Outcomes	Bay All CTE Programs	DVC All CTE Programs	State 0699.00	Bay 0699.00
Students with a Job Closely Related to Their Field of Study	74%	73%	69%	N/A
Median Annual Earnings for SWP Exiting Students	\$48,926	\$38,122	\$33,100	\$18,110
Median Change in Earnings for SWP Exiting Students	23%	25%	11%	36%
Exiting Students Who Attained the Living Wage	50%	41%	42%	N/A

## Skills and Education

**Table 11. Top Skills for Virtual Production Occupations in Bay Region (July 2022 - June 2023)**

Skill	Posting	Skill	Posting
Animations	254	Motion Graphics	136

Skill	Posting	Skill	Posting
Adobe Photoshop	207	Prototyping	132
Workflow Management	204	Post-Production	131
User Experience (UX)	175	Adobe Premiere Pro	125
Adobe After Effects	167	Storyboarding	117
Video Production	165	Scripting	107
Interaction Design	149	Wireframing	106
Journalism	149	Computer Science	105
Social Media	147	Visual Effects	103
Autodesk Maya	142	Adobe Illustrator	102

Source: Lightcast

**Table 12. Education Requirements for Virtual Production Occupations in Bay Region**

Education Level	Job Postings	% of Total
High school or GED	128	15%
Associate degree	15	2%
Bachelor's degree & higher	709	83%

Source: Lightcast

Note: 54% 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 CCCC Data Mart and CTE Launchboard.

## Sources

O\*Net Online  
 Lightcast  
 CTE LaunchBoard [www.calpassplus.org](http://www.calpassplus.org)  
 Launchboard  
 Statewide CTE Outcomes Survey  
 Employment Development Department Unemployment Insurance Dataset  
 Living Insight Center for Community Economic Development  
 Chancellor's Office MIS system

## Contacts

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