



**#19STRONG.** COMMUNITY & COLLEGES  
TRANSFORMING FUTURES.

# **A.I. TECH AND INNOVATION REGIONAL PROGRAM ADVISORY**

**LOS ANGELES COMMUNITY  
COLLEGE PROGRAM LOOK BOOK**

**May 29, 2025**

**10:00am - 12:00pm**

**LAEDC**



**C·O·E**

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# MEETING AGENDA

## Date and Time

May 29, 2025, from 10:00am – 12:00pm

## Occupation Focus

A.I. Tech and Innovation - Multiple Industries

## Opening Remarks

Welcome and Introductions | Pablo Martinez, LAEDC  
 LARC Overview | Dr. Narineh Makijan, LARC  
 LAEDC Overview | Jermaine Hampton, LAEDC  
 Industry Data | Matthew Skyberg, LAEDC  
 Industry Data | Luke Meyer, COE

## Discussion Topics Moderated by Jose Pelayo and Alicia Nyein

### State of the Industry:

1. What trends and insights can you share from your organization's or industry's perspective regarding the current and future impact of AI?
2. From your vantage point, what is the general sentiment in your sector towards AI adoption – primarily excitement, caution, pragmatic implementation, or something else? What are the key drivers or inhibitors?
3. Beyond generative AI (like ChatGPT, DALL-E, etc.), what other types of AI technologies (e.g., machine learning for predictive analytics, computer vision, natural language processing in customer service, AI-driven automation/robotics) are making significant inroads in your industry?

### Workforce Development:

4. How is AI influencing not just internal operations or efficiency, but also the core products, services, or experiences your industry offers to its customers or clients?
5. As AI continues to transform the technology landscape, which roles and skill sets do you believe will remain resilient or become increasingly critical across industries?
6. Beyond technical proficiency, what uniquely human skills – often called 'soft skills' like critical thinking, creative problem-solving, ethical reasoning, communication, and emotional intelligence – become even more crucial for success when working alongside AI tools?
7. What baseline level of 'AI literacy' or understanding do you believe will be necessary for all employees, not just those in specialized tech roles, in the near future?
8. How are organizations like yours approaching the upskilling and reskilling of your current workforce to effectively collaborate with AI?

### Building Equitable Talent Pipelines:

9. How can educational institutions, particularly community colleges, better prepare students to adapt to—and thrive alongside—these evolving AI technologies?
10. AI technologies come with inherent ethical considerations, such as bias in algorithms, data privacy concerns, and the potential for job displacement. How can community colleges effectively prepare students to navigate these ethical dimensions and contribute to responsible AI development and deployment?
11. How can industry and education partners work together to ensure that the growth of AI technologies leads to equitable access to opportunities for historically underrepresented communities?

## Review and Feedback Poll

Community College Representation & Feedback Poll

## Closing Remarks

Next Steps and Adjournment | Jermaine Hampton, LAEDC

# LOS ANGELES COUNTY ECONOMIC DEVELOPMENT CORPORATION

The Los Angeles County Economic Development Corporation, a non-profit organization, champions equitable economic growth across the Los Angeles region.

LAEDC is committed to developing a competitive regional workforce because we know that a robust workforce and our economic growth as a region should not be separated from each other. We bring industry leaders and educational partners together within the economic development process. We want our education infrastructure to train the next generation of the workforce and ensure they receive relevant training and can join the industry of their choice. We know there needs to be an alignment between industry and our educational systems.

## Vision

A reimagined Los Angeles regional economy – growing, equitable, sustainable, and resilient – that provides a healthy and high standard of living for all.

## Mission

Reinventing our economy to collaboratively advance growth and prosperity for all.



Funded by the California Community Colleges Chancellor's Office under the Strong Workforce Program (SWP) as a Los Angeles Regional Project.

The Los Angeles County Economic Development Corporation (LAEDC) was founded in 1981 as a nonprofit, public-benefit organization to harness the power of private sector in collaboration with L.A. County, to guide economic development and create more widely shared prosperity. LAEDC collaborates with all stakeholders in the region including education, business, and government. Learn more at [www.LAEDC.org](http://www.LAEDC.org).

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# LOS ANGELES REGIONAL CONSORTIUM

Los Angeles Regional Consortium, as a consortium of LA’s 19 community colleges, is working collectively to deliver on a promise that California community colleges are accessible and affordable to all who seek opportunities to realize a better future. LARC serves to coordinate, collaborate, organize, and facilitate interaction in the region to ensure workforce training is provided to all in a way that is accessible, efficient, responsive, data-driven and improves outcomes. We collaborate with K-12 partners, high-road employers, and priority industries to align impactful curriculum and workforce training programs, creating a seamless pathway for college and career readiness.

To learn more please visit [www.losangelesrc.org](http://www.losangelesrc.org)

## Mission

Our mission is to bridge the gap between LA’s workforce and the employers fueling our cutting-edge economy. This will not only close the supply and demand gap, but also increase economic and social mobility for LA County residents.

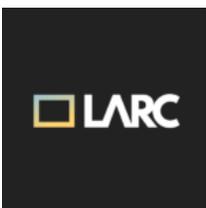
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# CENTER OF EXCELLENCE FOR LABOR MARKET RESEARCH

The Los Angeles Center of Excellence for Labor Market Research (COE) hosted at Mt. San Antonio College represents expertise in labor market analysis with a focus on research design, educational and training program mapping, and identifying skill sets for emerging occupations as well as geospatial analysis. The COE maintains strategic alliances with research organizations whose relationships and technical expertise enhance COE research efforts and with industry associations that assist in validating research findings, ensuring that the most recent industry and labor market conditions are captured. COE studies are used to inform policy discussions, industry-wide legislative efforts, and regional workforce and economic development strategies, as well as guide program and resource development efforts by the California Community Colleges. These reports can be accessed at [www.coecc.net](http://www.coecc.net).

## Mission

The mission of the center is to research, analyze and present information on regional economic and workforce needs, customized for Community College decision making and curriculum planning.

## Contact Information



**C·O·E**

CENTERS OF EXCELLENCE  
FOR LABOR MARKET RESEARCH

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# INDUSTRY REPRESENTATION

Nyariana Maiko | Chief Information Officer | Port of Long Beach



Nyariana Maiko is the Chief Information Officer at the Port of Long Beach, one of the world’s premier seaports and a trailblazer in goods movement and environmental stewardship. The Port handles \$300 billion in trade annually, supporting 1 in 17 jobs in Southern California.

Nyariana is an award-winning innovative business transformation leader with progressively complex experience in enabling technologies, cybersecurity risk management, ethical human based Generative Artificial Intelligence, business process innovation and strategic transformations. Nyariana was an early leader in creating holistic enterprise cybersecurity programs with measurable human behavior data aspects using continuously evolving technologies.

She spearheaded the launch of the Data and KPI Supply Chain Optimization’s Information Highway task force in response to the global supply chain crisis. The Port of Long Beach’s follow-on digital and data infrastructure initiative is a groundbreaking move towards streamlining port operations. The collaborative ecosystem is at the forefront of integrating advanced solutions like generative AI, aiming to revolutionize the dynamics of global supply chain management.

Prior to being appointed to her post at the Port by the Long Beach Harbor Commissioners in 2015, Nyariana held various enabling technology leadership positions at several enterprises including Molina Healthcare, Toyota Financial Services, Nissan, American Express, Allergan Pharmaceuticals, and Client Partner at Axiom Management Consulting and Cambridge Technology Partners.

Nyariana has Master’s Degree in Computer and Information Science with a focus on data, AI and a concentration in Contrastive Linguistics. She also has a Bachelor’s degree in Quantitative Methods & Computer Science. In addition to being a certified Toyota Kaizen Coach, Nyariana is also currently serving on multiple Technology Advisory boards and has previously served on the Federal Reserve Technology Advisory Council.

**Tekla Moquin | Skills to Jobs Lead | Amazon Web Services (AWS)**



Tekla Moquin is the Skills to Jobs (STJ) Lead for the Americas, Asia-Pacific and Australia at Amazon Web Services (AWS), working across government, education and commercial sectors to align skills-based pathways to entry-level, cloud-enabled tech jobs. Tekla led STJ’s growth strategy through the development of a scalable and replicable Tech Alliance model currently implemented in 13 countries, including the US. Prior to joining AWS, Tekla served as the Associate Vice President of Workforce Partnerships at the Community College of Rhode Island where she led the college’s workforce programs transformation from 2018-2022, as the founding Director of Client Services for Skills for Rhode Island’s Future, and in multiple roles at Year Up United.

**Dr. Renah Wolzinger | Technical Director | Eduvators**



Dr. Renah Wolzinger is an award-winning innovator at the intersection of education, technology, and the arts. Named the 2025 EdTech Awards “Trendsetter,” she is Technical Director at Eduvators and former Chief Academic Officer at EON Reality, where she has led the adoption of emerging technologies in education. With over two decades in California’s community colleges, she is widely recognized for advancing data-driven, scalable learning strategies.

A global keynote speaker on AI in education, Dr. Wolzinger also brings a creative edge as an award-winning composer and long-time Recording Academy voting member. As Board Chair Emeritus of Vital Link, she continues to champion the connection between education and workforce innovation.

**Dr. Dayna Provitt | Sr. Manager, Workforce Compensation | Deloitte**



Dr. Dayna Provitt has 30 years of human resources experience that includes both consulting and in-house compensation leadership. She has advised organizations on a wide range of human resources and employee compensation issues across multiple industries and sectors, including higher education and public sector. In addition to leading the compensation program for UCSB, she has overseen multiple compensation projects for higher education institutions during her time at Deloitte. Dr. Provitt is also a graduate of three California institutions, earning a Bachelor’s degree in business administration from Cal Poly San Luis Obispo, an MBA from Pepperdine Graziadio School of Business and Management, and a Doctoral degree in Organization Change and Leadership from University of Southern California. She is also a Certified Compensation Professional (“CCP”) through WorldatWork and has received her SPHR certification.

## AI Tech and Innovation

Artificial intelligence (AI) is rapidly transforming the nature of work across industries. This analysis focuses on AI's workforce impact in the eight priority sectors identified by the Los Angeles Regional Consortium (LARC), with a special emphasis on middle-skill occupations.

### LARC Priority Sectors:

- **Advanced Manufacturing**
- **Advanced Transportation & Logistics**
- **Business & Entrepreneurship / Global Trade**
- **Energy, Construction, & Utilities**
- **Health**
- **Information & Communication Technologies (ICT) / Digital Media**
- **Life Sciences & Biotechnology**
- **Retail, Hospitality, & Tourism**

We analyzed job postings from Lightcast (2015–2024), using keywords related to AI technologies while excluding irrelevant phrases such as "AI recruiting."

### AI Keyword Set:

- **Artificial intelligence (AI)**
- **Machine learning (ML)**
- **Deep learning (DL)**
- **Natural language processing (NLP)**
- **Generative AI (GenAI)**
- **Large Language Models (LLM)**

The keyword-based approach captures where AI is influencing job functions, skills, and employer expectations. This analysis tracks AI exposure, not displacement. As the Pew Research Center emphasizes, AI may assist or augment many jobs, especially middle-skill occupations, rather than replace them entirely<sup>1</sup>.

This advisory is designed to guide educators, employers, and policymakers in aligning training programs with emerging labor market needs.

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### *AI in Middle-Skill Roles:*

#### *Assistive, Not Displacing*

*While media headlines focus on job loss, many AI tools in middle-skill occupations act as assistive technologies, like predictive diagnostics in auto repair or image enhancement in radiology. These tools require workers to adapt and interpret, not exit.*

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<sup>1</sup> Pew Research Center. (2023, July 26). *Which U.S. workers are more exposed to AI on their jobs?*  
<https://www.pewresearch.org/social-trends/2023/07/26/which-u-s-workers-are-more-exposed-to-ai-on-their-jobs/>

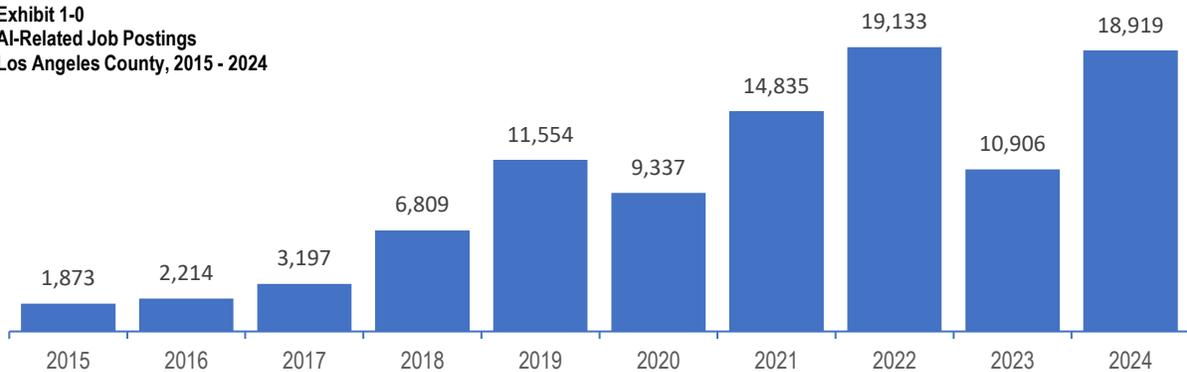
## Cross-Sector Overview: AI’s Expanding Reach in the Labor Market

Artificial intelligence is becoming a core feature of the modern workforce<sup>2</sup>, influencing job functions, required skills, and employer expectations. Analysis of job postings between 2015 and 2024 shows a steady rise in demand for AI-related knowledge and capabilities across the regional economy. Research from Pew shows that AI exposure is higher among workers in jobs requiring analytical, digital, and communication skills. By contrast, occupations with more mechanical or physical demands tend to have lower AI exposure. Training programs should reflect these differences.

### Growth of AI-Related Job Postings (2015–2024)

- AI-related job postings increased from **1,873 in 2015** to **18,919 in 2024**, a tenfold increase.
- Growth accelerated significantly starting in 2018, peaking at **19,133 postings in 2022**.
- Although there was a decline in 2023, AI-related postings rebounded strongly in 2024, indicating continued momentum.

**Exhibit 1-0**  
 AI-Related Job Postings  
 Los Angeles County, 2015 - 2024

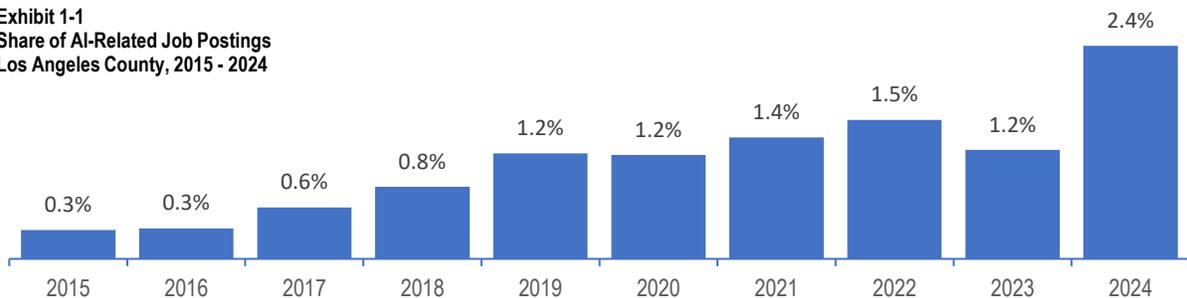


Source: Lightcast

### Share of AI-Related Job Postings

- In 2015, AI-related postings represented just **0.3 percent** of all job postings.
- By 2024, the share rose to **2.4 percent**, an eightfold increase over the decade.
- Even in years with overall job market declines, such as 2020 and 2023, AI maintained or grew its share of total postings, signaling its growing relevance across sectors.

**Exhibit 1-1**  
 Share of AI-Related Job Postings  
 Los Angeles County, 2015 - 2024



Source: Lightcast

<sup>2</sup> McKinsey & Company. (2023). *The State of AI in 2023: Generative AI’s Breakout Year*. Retrieved from <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-in-2023-generative-ais-breakout-year>

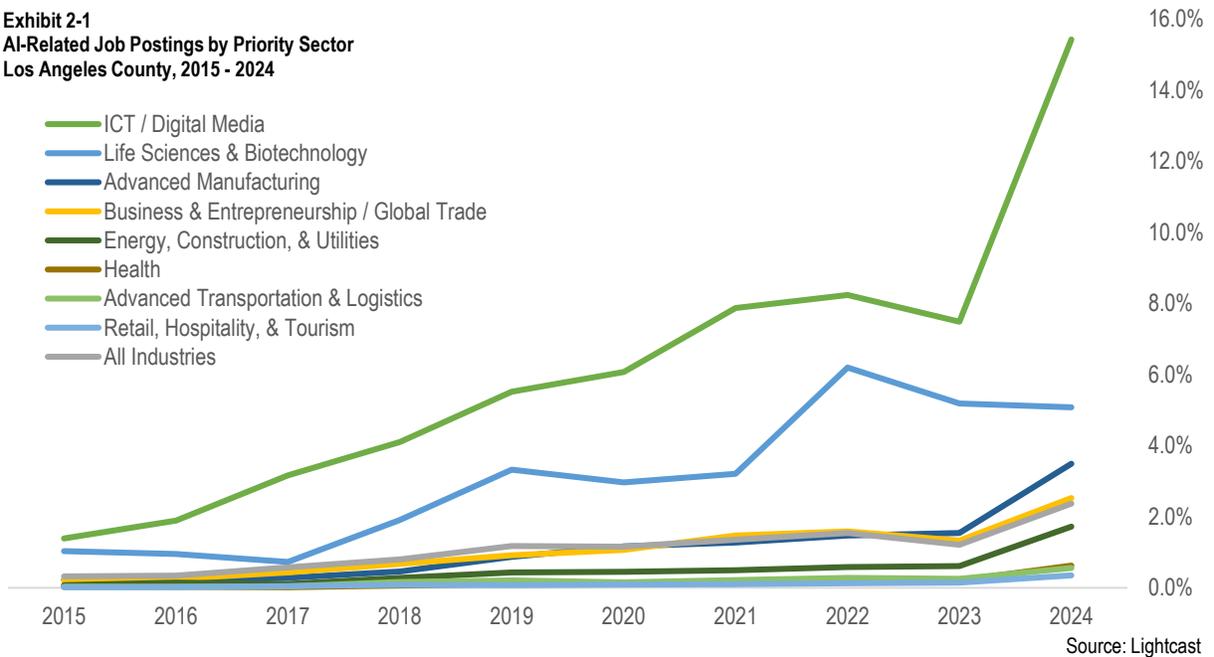
### Key Takeaways

- AI-related postings are no longer limited to the tech sector. They now appear across a wide range of industries and occupations.
- The steady increase in AI mentions reflects changing job requirements, including the integration of automation, data-driven tools, and generative technologies.
- These trends highlight the need for updated career pathways and training programs to prepare workers for AI-enhanced roles.

## Sector Snapshots: AI Impact by LARC Priority Industry

Artificial intelligence is reshaping the workforce across all major sectors. It is changing not only what work is done, but also how it is performed and the skills required. This section examines how AI is influencing occupations within the eight priority sectors identified by the Los Angeles Regional Consortium (LARC). This analysis focuses on how AI is being integrated into specific job roles and which sectors show the greatest exposure.

**Exhibit 2-1**  
**AI-Related Job Postings by Priority Sector**  
**Los Angeles County, 2015 - 2024**



### Key Findings from AI Job Posting Trends

As shown in **Exhibit 2-1**, the **Information and Communication Technologies (ICT) / Digital Media** sector has the highest share of AI-related job postings. More than 15 percent of postings referenced AI, which is more than three times the next highest sector. Growth in this sector began steadily in 2018, followed by a sharp increase in 2024, driven by the use of machine learning, automation tools, and generative AI in software, content creation, and IT support.

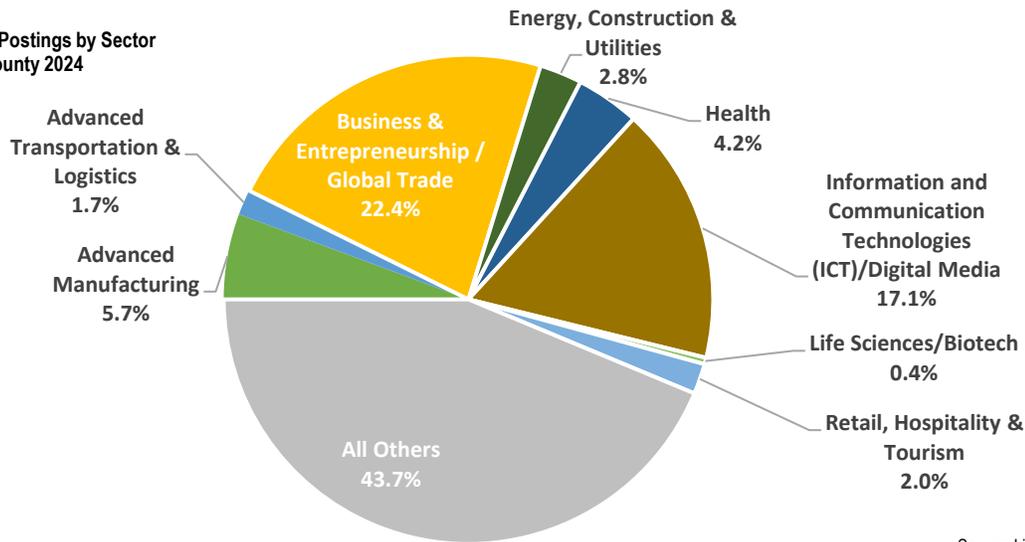
**Life Sciences and Biotechnology** also experienced consistent growth. Over 5 percent of postings in 2024 referenced AI, reflecting expanded use in diagnostics, bioinformatics, drug development, and laboratory automation.

**Advanced Manufacturing** and **Business and Entrepreneurship / Global Trade** also show strong adoption of AI. In these sectors, AI supports predictive maintenance, process optimization, sales automation, and

financial modeling. Although **Health, Energy, Construction and Utilities**, and **Advanced Transportation** have lower shares of AI-related postings, each is showing gradual growth, with new applications emerging in diagnostics, grid systems, infrastructure design, and logistics coordination.

The **Retail, Hospitality, and Tourism** sector had the lowest share in 2024, with only 0.3 percent of postings mentioning AI. This likely reflects early-stage adoption in areas such as customer engagement, personalized marketing, and dynamic scheduling.

**Exhibit 2-2**  
AI-Related Job Postings by Sector  
Los Angeles County 2024



Source: Lightcast

**Sector Share of Total AI Job Postings in 2024**

**Exhibit 2-2** presents the share of all AI-related job postings by sector in 2024. While ICT/Digital Media leads in intensity of AI adoption within the sector, it ranks second in total volume at 17.1 percent of all AI postings. The largest share belongs to **Business and Entrepreneurship / Global Trade**, which accounts for 22.4 percent of AI-related postings across the economy. This reflects widespread application of AI in roles related to sales, marketing, finance, data analysis, and business operations.

Other notable shares include **Advanced Manufacturing** with 5.7 percent, **Health** with 4.2 percent, and **Energy, Construction, and Utilities** with 2.8 percent. **Retail, Hospitality, and Tourism, Transportation and Logistics**, and **Life Sciences and Biotechnology** each represent smaller shares of total AI postings. However, these sectors are trending upward over time and may see continued growth in AI demand.

**Implications for Program Planning**

These trends indicate that AI is affecting a wide range of industries. It is not limited to technology or research occupations. Instead, AI is becoming a part of many middle-skill roles supported by community college programs. While the pace and intensity of adoption vary by sector, all eight priority areas show increasing exposure to AI technologies. This reinforces the importance of integrating AI concepts and tools into program design. Faculty and program developers should consider sector-specific use cases for AI, identify the skills workers need to interact with AI systems, and update career education programs accordingly. Doing so will help ensure that students are prepared to enter the workforce with the competencies required in an AI-integrated labor market.

The following sections break down AI's impact across each of the eight LARC priority sectors, identifying the occupations most influenced by this technological shift.

## Advanced Manufacturing

Advanced Manufacturing is undergoing significant transformation as artificial intelligence becomes more widely integrated into production systems, equipment maintenance, and design processes. AI is helping companies improve efficiency, reduce waste, and respond more quickly to supply chain changes. While these changes affect a broad range of roles, middle-skill occupations are central to implementation on the factory floor, in prototyping labs, and within technical support teams **Error! Bookmark not defined..**

### AI Workforce Exposure

In 2024, Advanced Manufacturing ranked third among the LARC priority sectors in terms of average AI-related job postings. Approximately 3.5 percent of postings in this sector referenced AI tools or competencies. This reflects a growing need for workers who can operate and maintain AI-integrated systems, apply data to decision-making, and work alongside automated technologies.

### Top Middle-Skill Occupations Impacted by AI

The following middle-skill occupations had the highest share of AI-related job postings in 2024:

- **Electro-Mechanical and Mechatronics Technologists and Technicians:** 8.8 percent
- **Calibration Technologists and Technicians:** 7.4 percent
- **Electrical and Electronics Drafters:** 6.6 percent
- **Chemical Plant and System Operators:** 5.4 percent
- **Computer Numerically Controlled Tool Operators:** 3.8 percent

These roles support the setup, maintenance, and troubleshooting of smart manufacturing equipment. Workers in these occupations are increasingly responsible for interfacing with AI-powered systems, conducting real-time diagnostics, and interpreting system-generated data to maintain productivity.

### How AI Is Transforming This Sector

Key areas of AI integration in middle-skill roles include:

- **Predictive Maintenance:** Technicians use AI-based alerts and monitoring systems to detect early signs of equipment failure and schedule repairs before breakdowns occur.
- **Production Monitoring and Quality Control:** AI tools track performance and flag deviations in real time, allowing workers to respond quickly to improve consistency and reduce waste.
- **AI-Enhanced CAD and Drafting:** Drafters and designers are using AI-supported design platforms to generate and refine models based on engineering criteria<sup>3</sup>.
- **Digital Twins and Simulation:** AI is helping create virtual models of machines and processes that technicians can use to test changes or improvements without disrupting operations **Error! Bookmark not defined..**

### Implications for Education and Training

To keep pace with industry changes, community colleges and training providers should adapt programs in advanced manufacturing to include:

- Practical training on AI-integrated equipment and diagnostic tools
- Instruction in industrial automation platforms and sensor-based systems
- Coursework in interpreting and applying production data for decision-making
- Certifications related to smart manufacturing, systems troubleshooting, and safety protocols

Training should also emphasize interdisciplinary skills, blending mechanical knowledge with digital competencies to prepare students for hybrid roles. By aligning programs with these evolving job functions, educators can equip middle-skill learners with the tools they need to succeed in modern manufacturing environments.

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<sup>3</sup> Autodesk. (2023). *How AI in Architecture Is Shaping the Future of Design and Construction*. Retrieved from <https://www.autodesk.com/design-make/articles/ai-in-architecture>

## Advanced Transportation and Logistics

Artificial intelligence is beginning to influence how goods and people move across transportation networks. Though overall adoption remains limited compared to other sectors, AI is emerging in areas such as vehicle diagnostics, route planning, warehouse automation, and supply chain coordination. Middle-skill roles are central to implementing these technologies, especially in equipment maintenance, logistics planning, and system operations.<sup>4</sup>

### AI Workforce Exposure

In 2024, this sector ranked near the bottom among LARC priority areas for AI-related postings, with only 0.6 percent referencing AI tools. This reflects early-stage adoption aimed at increasing reliability, reducing downtime, and improving efficiency.

### Top Middle-Skill Occupations Impacted by AI

The following middle-skill occupations had the highest share of AI-related job postings in 2024:

- **Outdoor Power Equipment and Other Small Engine Mechanics:** 3.6 percent
- **Electrical and Electronics Installers and Repairers, Transportation Equipment:** 2.6 percent
- **Electronic Equipment Installers and Repairers, Motor Vehicles:** 2.4 percent
- **Logisticians:** 2.2 percent
- **Production, Planning, and Expediting Clerks:** 1.9 percent

These occupations are increasingly connected to the use of smart diagnostics, AI-supported vehicle systems, and automated tools used in warehousing and logistics coordination. Workers in these roles are expected to understand how to operate and interpret AI-enhanced platforms that manage routing, maintenance schedules, and inventory.

### How AI Is Transforming This Sector

AI is beginning to change core operations in transportation and logistics through:

- **Fleet and Route Optimization:** AI-powered routing tools help reduce delivery times and fuel costs by analyzing real-time data from traffic, weather, and demand signals.
- **Predictive Maintenance:** Technicians use AI sensors and alerts to service vehicles and equipment before breakdowns occur, improving safety and reducing delays.
- **Warehouse Automation:** AI supports the use of autonomous mobile robots, smart shelving systems, and dynamic scheduling tools that enhance order fulfillment and inventory accuracy.
- **Supply Chain Visibility:** AI tools provide real-time updates on shipments and deliveries, allowing for proactive adjustments in staffing and routing.

### Implications for Education and Training

To prepare students for these evolving middle-skill roles, transportation and logistics programs should consider the following strategies:

- Include training on AI-enabled diagnostic tools, routing software, and inventory management systems
- Introduce concepts in automation and predictive analytics as part of core technical coursework
- Combine mechanical, digital, and logistics content into interdisciplinary programs that reflect how these skills are used together in the workplace
- Provide flexible upskilling opportunities for incumbent workers who need to adapt to new technologies on the job

Equipping learners with these emerging competencies will help ensure a reliable and resilient transportation and logistics workforce. As AI continues to expand into this sector, middle-skill workers will play a key role in maintaining efficient, intelligent, and adaptable supply chains.

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<sup>4</sup> Brookings Institution. (2019). *Automation and AI: Implications for Transportation Jobs*. Retrieved from <https://www.brookings.edu/research/automation-and-artificial-intelligence-how-machines-affect-people-and-places/>

## Business and Entrepreneurship / Global Trade

Artificial intelligence is reshaping how companies handle marketing, customer service, data analysis, and decision-making. In middle-skill roles, AI is used to improve efficiency, personalize customer interactions, and streamline routine tasks. These tools enhance—rather than replace—human decision-making in modern workplaces.<sup>5</sup>

### AI Workforce Exposure

In 2024, Business and Entrepreneurship ranked fifth among LARC priority sectors for average AI-related job postings. About 2.4 percent of job postings in this sector included references to AI-related tools or competencies. While this share is lower than in more technology-focused sectors, it still reflects a growing shift toward data-driven practices across a wide range of business operations.

### Top Middle-Skill Occupations Impacted by AI

The following middle-skill occupations had the highest share of AI-related job postings in 2024:

- **Tax Preparers:** 4.6 percent
- **First-Line Supervisors of Non-Retail Sales Workers:** 3.9 percent
- **Advertising Sales Agents:** 3.1 percent
- **Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products:** 2.8 percent
- **Executive Secretaries and Executive Administrative Assistants:** 2.6 percent

These roles are increasingly supported by AI-driven platforms that automate administrative tasks, generate financial reports, and assist with client outreach. Workers in these positions are expected to use CRM systems, manage digital workflows, and interpret data generated by analytics tools.

### How AI Is Transforming This Sector

AI is being integrated into many core business functions. Middle-skill workers are interacting with tools that:

- **Support predictive analytics** to identify trends and improve planning.
- **Automate customer interactions** through chatbots, personalized emails, and recommendation engines.
- **Streamline finance and accounting tasks** using software that monitors spending, flags errors, and predicts cash flow.
- **Assist in compliance and auditing** by analyzing large volumes of transactions and identifying irregularities.

AI is not replacing these jobs. Instead, it is expanding the scope of what middle-skill business workers are responsible for and increasing the demand for digital fluency.

### Implications for Education and Training

To prepare students for middle-skill business roles in an AI-influenced environment, programs should include:

- Instruction in AI-supported platforms such as CRM systems, project management tools, and financial software
- Courses that build skills in data literacy, including dashboards, reporting tools, and basic analytics
- Project-based assignments using real or simulated business data to practice decision-making
- Discussions of workplace ethics, AI limitations, and the importance of human oversight in business settings

These updates will help students develop the practical skills needed to thrive in today's business environment. With AI now integrated into everything from sales to finance to customer service, middle-skill workers must be equipped to use technology confidently and effectively in their daily work.

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<sup>5</sup> Deloitte. (2023). *Trustworthy AI in Finance & Accounting*. Retrieved from <https://www2.deloitte.com/us/en/pages/audit/articles/ai-in-finance-and-accounting.html>

## Energy, Construction, and Utilities

The Energy, Construction, and Utilities (ECU) sector is gradually adopting artificial intelligence to enhance efficiency, improve planning, and modernize infrastructure. AI is playing a growing role in grid monitoring, energy forecasting, and digital construction tools. While adoption is still emerging, middle-skill occupations are starting to engage with smart systems that support real-time decision-making, automated diagnostics, and environmentally responsive design<sup>6</sup>.

### AI Workforce Exposure

In 2024, the ECU sector ranked fourth among the LARC priority sectors for average share of AI-related job postings. Approximately 1.7 percent of postings referenced AI-related tools or skills. This reflects a growing trend toward smart infrastructure and data-informed operations across utilities, construction, and energy systems.

### Top Middle-Skill Occupations Impacted by AI

The following middle-skill occupations had the highest share of AI-related job postings in 2024:

- **Architectural and Civil Drafters:** 4.5 percent
- **Solar Photovoltaic Installers:** 4.4 percent
- **Radio, Cellular, and Tower Equipment Installers and Repairers:** 3.4 percent
- **Drafters, All Other:** 3.4 percent
- **Electrical and Electronics Repairers, Powerhouse, Substation, and Relay:** 3.3 percent

Workers in these roles are beginning to use AI-supported tools for equipment diagnostics, infrastructure modeling, and safety monitoring. For example, drafters may work with AI-enhanced design software, while inspectors and technicians may use sensor data or predictive alerts to assess building systems or grid performance.

### How AI Is Transforming This Sector

AI is supporting the modernization of infrastructure and utilities through several key applications:

- **Smart Grid Management:** AI platforms help balance electricity loads and detect outages or inefficiencies in real time.
- **AI-Assisted Design and Drafting:** Tools such as building information modeling (BIM) and CAD software now include predictive features and automated design recommendations.
- **Predictive Maintenance and Monitoring:** Field technicians rely on sensor data and AI-generated alerts to prevent equipment failure and maintain safety standards.
- **Energy Optimization:** Machine learning supports forecasting of energy demand, storage needs, and the integration of renewable systems.

### Implications for Education and Training

To ensure middle-skill workers are prepared for AI-enhanced roles in this sector, workforce training programs should include:

- Practical experience with AI-enabled software used in drafting, design, and energy management
- Training on grid systems, smart sensors, and basic data interpretation
- Courses that bridge electrical, mechanical, and environmental systems with digital tools
- Certifications in technologies such as BIM, energy analytics, and smart building operations

These updates will help students build the foundational and technical skills needed to work in increasingly intelligent and responsive infrastructure systems. As AI continues to support transformation in this sector, middle-skill workers will be essential to ensuring systems are safe, efficient, and sustainable.

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<sup>6</sup> International Energy Agency. (2023). *Energy and AI*. Paris: IEA. Retrieved from <https://www.iea.org/reports/energy-and-ai>

## Health

Artificial intelligence is becoming more visible in healthcare environments, especially in roles that involve imaging, diagnostics, and patient monitoring. While still in the early stages of widespread adoption, AI is being used to improve the accuracy of tests, support clinical decisions, and increase workflow efficiency. Many of these tools are directly used by middle-skill professionals who are essential to day-to-day operations in hospitals, clinics, and laboratories<sup>7</sup>.

### AI Workforce Exposure

In 2024, the Health sector ranked sixth among the LARC priority sectors for AI-related job postings. About 0.6 percent of postings referenced AI-related tools or skills. While this share is lower than in more technology-focused sectors, it reflects meaningful growth in the use of AI in healthcare support and technical roles.

### Top Middle-Skill Occupations Impacted by AI

The following middle-skill healthcare occupations had the highest share of AI-related job postings in 2024:

- **Magnetic Resonance Imaging (MRI) Technologists:** 8.5 percent
- **Diagnostic Medical Sonographers:** 6.6 percent
- **Nuclear Medicine Technologists:** 5.7 percent
- **Radiologic Technologists and Technicians:** 3.7 percent
- **Medical Secretaries and Administrative Assistants:** 3.5 percent

These roles are increasingly supported by AI-powered systems that help interpret scans, guide procedures, and monitor patient vitals. Workers in these positions must be able to use specialized equipment that integrates AI functions and apply clinical judgment when interpreting results.

### How AI Is Transforming This Sector

AI is improving many core functions in healthcare, especially those related to diagnostics and operational efficiency. Key areas of application include:

- **Medical Imaging:** AI systems assist technologists in reading scans, identifying patterns, and enhancing image resolution for clearer results.
- **Clinical Decision Support:** Technicians and support staff may use AI-generated recommendations to flag issues or prioritize urgent cases.
- **Predictive Analytics:** AI helps identify patients at risk of readmission or deterioration and supports staffing decisions based on projected care needs.
- **Workflow Optimization:** AI tools improve scheduling, automate documentation, and reduce administrative burdens on clinical staff.

### Implications for Education and Training

To prepare students for evolving roles in healthcare, training programs should include:

- Hands-on experience with AI-enhanced imaging equipment and monitoring systems
- Coursework in health data systems, informatics, and digital workflows
- Ethical training on the use of AI in clinical settings, including patient consent and data privacy
- Instruction that connects anatomy and physiology with AI applications in diagnostics and treatment support

These updates will help ensure that middle-skill healthcare workers are equipped to use AI safely and effectively in ways that support better patient outcomes and more efficient care delivery.

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<sup>7</sup> World Health Organization. (2021). *Ethics and Governance of Artificial Intelligence for Health*. Retrieved from <https://www.who.int/publications/i/item/9789240029200>

## Information and Communication Technologies (ICT) / Digital Media

The ICT and Digital Media sector is leading the adoption of artificial intelligence across the workforce. While many high-skill roles focus on AI development, middle-skill occupations are playing a growing part in applying AI tools in technical support, infrastructure maintenance, digital content workflows, and cybersecurity. These roles are essential to implementing and managing AI-enhanced systems used in both public and private sectors<sup>8</sup>.

### AI Workforce Exposure

In 2024, ICT and Digital Media had the highest share of AI-related job postings among the eight LARC sectors. Approximately 15.4 percent of postings referenced AI tools or skills, indicating widespread adoption in occupations that do not require a four-year degree.

### Top Middle-Skill Occupations Impacted by AI

The following middle-skill ICT occupations had the highest share of AI-related job postings in 2024:

- **Computer Network Architects:** 16.4 percent
- **Network and Computer Systems Administrators:** 14.9 percent
- **Computer User Support Specialists:** 7.7 percent
- **Film and Video Editors:** 6.1 percent
- **Computer Network Support Specialists:** 5.7 percent

Workers in these roles are expected to understand how to configure, maintain, and secure systems that may include AI-driven features. Support specialists and network administrators, for example, often work with software that automates monitoring, alerts, and performance optimization.

### How AI Is Transforming This Sector

AI is becoming a core component of daily operations in ICT and Digital Media, with key applications including:

- **Automated IT Support:** AI tools help diagnose issues and suggest solutions, reducing downtime and improving service quality.
- **Network Optimization and Monitoring:** AI is used to detect anomalies, predict system failures, and balance traffic across digital infrastructure.
- **Cybersecurity:** AI enhances the ability to detect threats and respond in real time, often before human analysts can act.
- **Content Management and Delivery:** AI supports digital media workflows, including automated tagging, personalization, and content scheduling.

These applications require middle-skill workers to have technical fluency and the ability to adapt to evolving tools and platforms.

### Implications for Education and Training

To prepare students for middle-skill careers in AI-enabled ICT environments, education and training programs should include:

- Hands-on experience with AI-assisted systems used in IT support, digital media, and cybersecurity
- Instruction in scripting languages such as Python and platforms like cloud-based machine learning services
- Courses that combine networking fundamentals with automation and data-driven decision tools
- Training in responsible AI use, with attention to privacy, bias, and system transparency

Community colleges are well positioned to deliver these competencies through associate degrees, certificates, and short-term training that reflect real-world job demands. As AI continues to expand in scope, middle-skill workers will play an essential role in implementing and maintaining the digital systems that support nearly every industry.

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<sup>8</sup> IBM. (2023). *AI for IT Support*. Retrieved from <https://www.ibm.com/think/topics/ai-for-it-support>

## Life Sciences and Biotechnology

The Life Sciences and Biotechnology sector is increasingly integrating artificial intelligence into research, diagnostics, laboratory operations, and data interpretation. While much of the focus has been on high-skill research roles, many middle-skill occupations are now using AI-powered tools in routine lab procedures, quality control, and technical support. These workers are essential to managing experiments, analyzing samples, and operating the digital systems that support scientific discovery<sup>9</sup>.

### AI Workforce Exposure

In 2024, Life Sciences and Biotechnology ranked second among the LARC priority sectors in terms of AI-related job postings. About 5.1 percent of postings referenced AI skills or tools. This trend reflects the growing need for technicians and support professionals who can work with data-driven systems and AI-enhanced lab equipment.

### Top Middle-Skill Occupations Impacted by AI

The following middle-skill life science occupations had the highest share of AI-related job postings in 2024:

- **Life, Physical, and Social Science Technicians, All Other:** 8.2 percent
- **Medical Equipment Repairers:** 1.8 percent

These occupations support scientific work through data collection, testing, and analysis. Workers in these roles increasingly rely on AI-supported platforms for analyzing results, identifying anomalies, and assisting with process automation.

### How AI Is Transforming This Sector

AI is improving the speed and accuracy of scientific work, especially in laboratory and applied research environments. Key transformations include:

- **Drug Development and Testing:** AI models help identify promising compounds and support simulation of results before trials begin.
- **Genomic Analysis and Diagnostics:** Technicians work with AI tools to interpret genetic sequences and detect disease markers.
- **Lab Automation:** Robotics and AI systems manage high-volume testing with greater efficiency and lower error rates.
- **Environmental Monitoring:** AI enables real-time tracking of chemical, biological, and atmospheric data to support public health and regulatory efforts.

### Implications for Education and Training

To prepare students for AI-enhanced middle-skill roles in life sciences and biotechnology, education and workforce programs should include:

- Instruction in data collection and analysis tools used in laboratory environments
- Exposure to bioinformatics software and platforms used in genomics and diagnostics
- Ethical discussions around the use of AI in health-related testing and research
- Cross-training that combines biology, chemistry, and computer skills, with a focus on lab applications

By offering training that reflects current industry practices, community colleges can help students build the foundational and technical skills needed to contribute to innovation in the region's biotechnology and life sciences workforce.

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<sup>9</sup> Tian, W., Zhang, C., Wang, X., & Yu, Y. (2024). *Artificial intelligence-assisted de novo drug design: progress, opportunities, and challenges*. Scientific Reports, 14, Article 9112. <https://www.nature.com/articles/s41598-024-79799-w>

## Retail, Hospitality, and Tourism

The Retail, Hospitality, and Tourism (RHT) sector is gradually adopting artificial intelligence to improve customer engagement, optimize operations, and personalize services. While the overall level of AI integration remains low compared to other sectors, certain middle-skill roles are beginning to interact with AI-driven systems in marketing, sales, inventory, and guest services<sup>10</sup>.

### AI Workforce Exposure

In 2024, the RHT sector had the lowest average share of AI-related job postings among the LARC priority sectors. Just under 0.3 percent of job postings referenced AI-related tools or skills. This suggests that while AI is beginning to influence the sector, adoption is concentrated in roles that support digital marketing, product promotion, and consumer analytics, rather than traditional frontline service jobs.

### Top Middle-Skill Occupations Impacted by AI

The following middle-skill RHT occupations had the highest share of AI-related job postings in 2024:

- **Gambling Managers:** 3.7 percent
- **Fabric and Apparel Patternmakers:** 2.4 percent
- **Travel Agents:** 1.1 percent
- **Tour and Travel Guides:** 0.6 percent
- **First-Line Supervisors of Retail Sales Workers:** 0.6 percent

These occupations are starting to use AI-assisted tools for tasks such as tracking customer behavior, managing product recommendations, scheduling staff, and personalizing marketing efforts. Supervisors and customer-facing staff may also engage with AI platforms that automate sales insights or handle customer inquiries.

### How AI Is Transforming This Sector

Although AI is still emerging in RHT, it is beginning to shape several business practices:

- **Customer Engagement and Personalization:** AI tools generate targeted promotions, automate responses to inquiries, and recommend products based on past purchases.
- **Inventory and Sales Forecasting:** AI helps predict demand and optimize stock levels in retail and hospitality environments.
- **Virtual Shopping and Experience Design:** AI supports virtual try-on features, digital room tours, and interactive guest experiences in both retail and lodging settings.
- **Workforce and Schedule Optimization:** AI is being tested for dynamic pricing models, staff scheduling tools, and real-time service management.

### Implications for Education and Training

To prepare middle-skill workers for evolving roles in RHT, training programs should consider:

- Introducing AI-enabled tools used in customer service, marketing, and point-of-sale systems
- Teaching basic data skills related to customer tracking, sales analytics, and digital merchandising
- Offering exposure to technologies used in retail displays, loyalty platforms, and guest engagement tools
- Encouraging conversations about privacy, workplace automation, and how technology is changing the service experience

While AI adoption is still limited in this sector, middle-skill workers who understand and can interact with these tools will be better positioned for advancement in customer-facing roles and support functions. Updating training programs now can help build a more adaptive and competitive RHT workforce for the future.

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<sup>10</sup> Patil, D. (2024). Artificial Intelligence in Retail and E-Commerce: Enhancing Customer Experience Through Personalization, Predictive Analytics, and Real-Time Engagement. SSRN. Retrieved from <https://ssrn.com/abstract=5057420>

## Occupational Trends and Skills Implications

Artificial intelligence is becoming increasingly relevant to middle-skill occupations. These are jobs that require more than a high school diploma but less than a bachelor's degree. They are essential to the regional economy and provide important career entry points for community college students. While AI adoption is often associated with high-tech or advanced-degree careers, it is now influencing how middle-skill workers perform their roles across healthcare, manufacturing, IT, life sciences, and creative fields.

According to the 2023 Pew Research Center study, exposure to AI is not evenly distributed across the workforce. Workers with higher levels of education are more exposed to AI tools compared to those with less education. **Error! Bookmark not defined.** Expanding access to AI-focused training through community colleges can help close skill and equity gaps across the regional labor force.

### Top AI-Affected Middle-Skill Occupations in LARC Priority Sectors

Job posting data shows that AI-related skills are appearing more frequently in middle-skill roles within the eight LARC priority sectors. In 2024, the following occupations had the highest share of postings that mentioned AI:

- **Computer Network Architects:** 16.4 percent (ICT/Digital Media)
- **Network and Computer Systems Administrators:** 14.9 percent (ICT/Digital Media)
- **Electro-Mechanical and Mechatronics Technologists and Technicians:** 8.8 percent (Advanced Manufacturing)
- **Magnetic Resonance Imaging (MRI) Technologists:** 8.5 percent (Health)
- **Life, Physical, and Social Science Technicians, All Other:** 8.2 percent (Life Sciences/Biotech)
- **Computer User Support Specialists:** 7.7 percent (ICT/Digital Media)
- **Calibration Technologists and Technicians:** 7.4 percent (Advanced Manufacturing)
- **Diagnostic Medical Sonographers:** 6.6 percent (Health)
- **Electrical and Electronics Drafters:** 6.6 percent (Advanced Manufacturing)
- **Film and Video Editors:** 6.1 percent (ICT/Digital Media)

These occupations show how AI is expanding beyond software development or research roles. Middle-skill workers are now using AI-assisted tools for diagnostics, system support, equipment calibration, data analysis, and digital production.

### AI-Driven Skill Shifts in Middle-Skill Jobs

Employers are looking for middle-skill workers who can:

- Use AI-supported tools in healthcare, design, manufacturing, and technical roles
- Interpret dashboards, alerts, or reports generated by AI systems
- Work with equipment that combines mechanical and digital components
- Solve problems that require coordination between software and physical systems
- Recognize when to rely on AI and when human judgment is needed

These skills are increasing the value of middle-skill roles and making them more dynamic and collaborative.

### Implications for Community College Programs

To prepare students for middle-skill jobs influenced by AI, community colleges and workforce partners should consider the following actions:

- **Incorporate applied AI learning into existing programs.** Students should work with real-world tools used in industry
- **Update curriculum to reflect current workplace technology.** Courses should include topics like smart systems, digital interfaces, and automation
- **Work with industry to ensure relevance.** Faculty and employers can partner to align learning outcomes with actual job tasks

- **Offer short-term credentials that build toward career advancement.** These should include options in areas like systems support, predictive maintenance, or AI-assisted imaging

By preparing students with both technical and decision-making skills, colleges can help ensure that the region’s middle-skill workforce is ready for the next generation of work.

## Recommendations

As artificial intelligence becomes more integrated into daily operations across industries, it is critical to prepare the region’s middle-skill workforce to adapt and succeed. The following recommendations support educational institutions, workforce partners, and employers in aligning training with emerging labor market needs. Each is grounded in AI-related job posting data and tailored to the eight LARC priority sectors.

### 1. Integrate Applied AI Skills into Career Education Programs

Career education programs should incorporate hands-on training with AI tools relevant to each sector. Instruction should reflect how AI is used in middle-skill roles and prepare students to work confidently with new technologies.

- **Advanced Manufacturing:** Include training on predictive maintenance tools, AI-powered quality control systems, and generative design platforms.
- **Advanced Transportation and Logistics:** Cover route optimization software, automated diagnostics, and logistics platforms with embedded AI.
- **Business and Entrepreneurship / Global Trade:** Teach the use of AI in customer relationship management, sales forecasting, marketing analytics, and financial risk tools.
- **Energy, Construction, and Utilities:** Add instruction on smart grid systems, building information modeling (BIM), and environmental monitoring software that use AI.
- **Health:** Provide practical training on AI-assisted imaging tools, diagnostic platforms, and patient monitoring systems.
- **Information and Communication Technologies (ICT) / Digital Media:** Offer foundational knowledge in machine learning, chatbot tools, digital content creation software, and AI-enhanced development environments.
- **Life Sciences and Biotechnology:** Introduce students to AI applications in lab automation, diagnostic modeling, and bioinformatics.
- **Retail, Hospitality, and Tourism:** Incorporate training on personalized marketing tools, AI-powered scheduling and booking systems, and digital service platforms.

### 2. Create Short-Term Training and Stackable Credentials

Colleges should offer short-term, job-focused credentials that address key AI competencies in specific occupations. These programs can serve both entry-level learners and incumbent workers seeking to upskill. Examples include:

- Certificates in AI-assisted diagnostics for allied health professionals
- Digital systems troubleshooting for manufacturing or energy technicians
- Data tools for customer service, marketing, or business operations roles
- Stackable credentials allow learners to build knowledge over time while earning industry-relevant certifications along the way.

### 3. Partner with Employers to Align Training with Real-World AI Use

Partnerships with employers are essential to ensure that classroom instruction reflects current industry needs. These partnerships can help:

- Identify the AI tools and systems used in daily operations
- Co-design course content that prepares students for those tasks
- Create work-based learning opportunities where students can apply AI knowledge in real settings

- Advisory boards, internships, and apprenticeship programs can strengthen this alignment and improve job placement outcomes.

#### 4. Support Incumbent Worker Upskilling

As AI adoption increases, many current middle-skill workers will need new training to stay competitive. Colleges and workforce boards should provide accessible options for:

- Evening, weekend, or online courses
- Bridge programs for transitioning into tech-enabled roles
- On-site upskilling in partnership with employers

These opportunities can help workers maintain job security while adapting to changes in tools, workflows, and expectations.

#### 5. Emphasize Interdisciplinary and Cross-Sector Skill Sets

AI is influencing job roles that blend technical, analytical, and communication skills. Training programs should reflect this by preparing students to work across traditional job boundaries. For example:

- A health technician may need to understand how to operate AI-enhanced imaging equipment and interpret flagged results
- A manufacturing worker may troubleshoot automated machinery and review system data to improve performance
- A business support staff member may use AI tools to personalize communications or manage customer insights

To support equitable access to AI-related jobs, colleges should prioritize expanding training to underrepresented and lower-education populations. Pew's study found that AI-exposed jobs are disproportionately held by workers with bachelor's degrees or higher. Community colleges can bridge this gap by embedding applied AI learning in middle-skill career pathways.

By building this type of cross-functional capability, colleges can prepare students for the hybrid roles that are increasingly common in the AI-enhanced workplace.

## Key Findings

Artificial intelligence (AI) is no longer confined to high-tech sectors. It is transforming middle-skill jobs across industries, creating both opportunities and challenges for the regional workforce. This advisory examines AI's growing impact on occupations in the eight LARC priority sectors, focusing on job postings, workforce exposure, and implications for community college programs.

Key Findings:

- AI-related job postings have increased tenfold from 2015 to 2024.
- Middle-skill roles across healthcare, IT, manufacturing, and logistics are increasingly AI-enhanced.
- ICT/Digital Media and Life Sciences/Biotechnology show the highest AI adoption rates.
- All eight sectors show signs of early-stage or accelerating AI integration.

This analysis highlights the need for updated training programs, short-term credentials, and stronger employer-educator partnerships to prepare the region's workforce for an AI-integrated economy.

# Community College AI-Focused Programs and Courses

The California Community Colleges offer a wide variety of media and communications instructional programs focused on the entertainment industry. Many of these programs provide students with the California Community Colleges are known for rapid career education courses and program development that is responsive to the needs of the regional labor market. This can take the form of credit programs, noncredit programs, and even employer-sponsored not-for-credit programs that tailor instruction to an employer’s specific hiring needs. Programs and courses in Artificial Intelligence, Generative AI, Machine Learning, and others have been developed in recent years and continue to expand rapidly as this technology becomes more widely adopted in the workplace. The tables below focus on existing programs, approved programs, and programs that are currently under development or pending approval from the Chancellor’s Office.

## Existing Programs

College	Program	TOP Code	Award Type
<b>Mt. San Antonio</b>	Artificial Intelligence for Business	0799.00 - Other Information Technology	A.S. Degree & Certificate

## Approved Programs

College	Program	TOP Code	Award Type
<b>Santa Monica</b>	Applied Artificial Intelligence	0707.00 - Computer Software Development	Certificate

## Programs Under Development & Pending Approval

College	Program	TOP Code	Award Type
<b>Cerritos</b>	Applied Artificial Intelligence	0799.00 - Other Information Technology	Certificate
<b>Long Beach City</b>	Applied Artificial Intelligence	0706.00 - Computer Science (Transfer)	A.S.-Transfer
<b>Long Beach City</b>	AI Literacy: AI & Machine Learning Foundations	TBD	Certificate
<b>Long Beach City</b>	AI Literacy: Fundamentals of Generative AI	TBD	Certificate
<b>Long Beach City</b>	AI Professional	TBD	A.S. Degree & Certificate
<b>Mt. San Antonio</b>	Supply Chain Management*	0510.00 - Logistics and Materials Transportation	Certificate
<b>Pasadena City</b>	Artificial Intelligence & Machine Learning (AI/ML)	0799.00 - Other Information Technology	A.S.-Transfer & Certificate

\*Mt. SAC’s Supply Chain Management certificate program will incorporate essential hard skills such as cloud computing, data analytics, blockchain, and artificial intelligence.

In addition to these programs, the specific courses listed in the table below provide a clearer idea of the content covered within these programs.

**Courses**

College	Program	TOP Code
<b>L.A. Pierce</b>	Managing Windows with Azure	0702.00 - Computer Information Systems
<b>L.A. Southwest</b>	AZURE AI FUNDAMENTALS	0707.30 - Computer Systems Analysis
<b>L.A. Southwest</b>	AZURE DATA FUNDAMENTALS	0707.30 - Computer Systems Analysis
<b>L.A. Southwest</b>	MICROSOFT AZURE FUNDAMENTALS	0707.30 - Computer Systems Analysis
<b>Long Beach City</b>	Fundamentals of Generative AI	0702.10 - Software Applications
<b>Mt. San Antonio</b>	AI for the Workplace	4930.12 - Job Seeking/Changing Skills
<b>Mt. San Antonio</b>	Generative Artificial Intelligence, Large Language Models, & Natural Language Processing in Business	0799.00 - Other Information Technology
<b>Santa Monica</b>	Data Science on Azure	0707.00 - Computer Software Development
<b>Santa Monica</b>	Generative Artificial Intelligence Fundamentals	0707.00 - Computer Software Development
<b>Santa Monica</b>	Introduction to Creative Coding and Generative Art	1002.00 - Art
<b>Santa Monica</b>	Microsoft Azure Database Essentials	0707.20 - Database Design and Administration
<b>Santa Monica</b>	Microsoft Azure Essentials	0702.00 - Computer Information Systems
<b>Santa Monica</b>	Teaching in the Age of AI: Strategies for Educators	0860.00 - Educational Technology

Beyond the courses listed above, Los Angeles regional community colleges offer many related courses in Cloud Computing, Cybersecurity, and other fields that overlap with and incorporate GenAI elements. To be clear, this is not an exhaustive list.

## Other Regional & Statewide GenAI Initiatives

As GenAI-focused programs and courses continue to develop, there are other regional and statewide initiatives designed to support and enhance this critical work. These are detailed below.

- [\*\*LARC AI Innovation Summit: Artificial Intelligence and the Future of Learning and Work\*\*](#)
  - Held in November 2024, this summit brought nearly 400 educational professionals, workforce leaders, and industry partners across the Los Angeles Region to address the intersection of artificial intelligence, education, and workforce preparedness through meaningful dialogue, networking, and actionable strategies.
- [\*\*NVIDIA & California Community College collaboration\*\*](#)
  - This first-of-its-kind initiative, signed by Governor Gavin Newsom and NVIDIA founder & CEO Jensen Huang, aims to:
    - Train students, educators and workers
    - Support job creation and promote innovation
    - Use AI to solve challenges that can improve the lives of Californians
- [\*\*California Community Colleges Chancellor's Office: Generative AI and the Future of Learning\*\*](#)
  - Generative AI is called out in the [Vision 2030](#) as one of the three key strategic directions and more information is available on the [AI Professional Development and Learning Opportunities](#) web page. The California Community Colleges are committed to using AI to:
    - Support the teaching and learning process
    - Improve communication with students
    - Improve student engagement and retention
    - Improve operational and administrative efficiency
    - Advance equitable support, access and success
- [\*\*Strong Workforce Program \(SWP\) Regional Project: AI Literacy & Innovation\*\*](#)
  - This project, led by Long Beach City College is designed to empower all students across the region to be AI literate and more productive. One of its primary aims is to offer more programs that teach students to become AI professionals and innovators. This project will include curriculum development, faculty professional development, exhibitions and workshops, as well as industry engagement.

## Summary & Recommendations

- GenAI Program and Course development at the Los Angeles regional community colleges is currently underway and has increased rapidly over the last two years.
- Other regional and statewide efforts are also ongoing to support this development.
- Los Angeles regional community colleges should continue this development, as the technology is already transforming the workforce and is expected to evolve rapidly, with unforeseen advancements likely to emerge.
- In addition to programs and courses focused solely on GenAI, Los Angeles regional community colleges should develop more programs and courses focused on the application of GenAI through a priority industry-focused lens, like the Supply Chain Management program at Mt. San Antonio College. Other potential areas could include the following: Biotechnology Lab Automation & GenAI-assisted Genomic Analysis; GenAI-assisted Predictive Maintenance in Advanced Manufacturing; Smart Electrical Grid Management with GenAI Platforms; and many others.

## Related Resources & Additional Reading

- LARC AI Website: [AI & The Future of Learning and Work](#)
- Edscoop Article: [Bowling Green State announces 'first' AI degree that combines other subjects](#)
- Forbes Article: [Don't Repeat History: Now Is The Time To Invest In AI Literacy](#)
- Miami Dade College: [Enrollments Skyrocketed \(2023\)](#)
- AI Learning at ASU: [AI is incorporated into disciplines & courses across curriculum](#)
- LMI Data: [Ernst & Young, Pew Center](#)
- LinkedIn Articles: [Boom in AI Literacy Skills](#), [15 Fastest-Growing Skills in the US](#)
- Federal Reserve Bank of St. Louis: [The Impact of Generative AI on Work Productivity](#)
- Vision 2030 Alignment: [Strategic Directions](#) include GenAI/Future of Learning
- Jon Stewart (April 2024): ['The False Promises of AI'](#)
- SIMFORM Generative AI in 2024 (April 2024): [Insightful Survey Findings](#)
- The Register (April 2024): [AI will reduce workforce, say 41% of surveyed executives](#)
- Yahoo Finance (Jan 2024): [The uncomfortable truth about AI's impact on the workforce is playing out inside the big AI companies themselves](#)
- McKinsey (June 2023): [The Economic Potential of Generative AI](#)
- Indeed Hiring Lab (Sep 2024): [AI at Work: Why GenAI is More Likely to Support Workers Than Replace Them](#)

# COMMUNITY COLLEGE REPRESENTATION

## Cerritos College

**Program Name** Certificate in Machine Tooling

**Website** <https://www.cerritos.edu/mtt/>

**Overview** The department has 17 full size CNC machines, including: 4 axis, 5 axis, Automatic Part Loader (APL), Bar Feeder, and a multi-axis turning center which allows for ample student-machine interaction. Students will learn how to interpret blueprint information specific to machining, calculate the appropriate speeds and feeds, create toolpaths using MasterCam software, as well as set up and cut parts on the CNC machines. Once the parts are machined, students are required to produce inspection reports using Verisurf computer assisted inspection software. Students will also learn the basics of robot programming for CNC machines.

For more information, contact:

Chuong Vo, Department Chair, [cvo@cerritos.edu](mailto:cvo@cerritos.edu)

## Citrus College

**Program Name** A.S. in Biotechnology

**Website** <https://catalog.citruscollege.edu/disciplines/biotechnology/biotechnology-as/#text>

**Overview** Biotechnology involves the application of biology to develop new products and technologies to combat disease, reduce our environmental impact, provide cleaner fuel sources, improve food production, and create safer industrial processes. The Citrus College Biotechnology A.S. degree includes a mix of basic science courses and hands-on laboratory classes designed to provide essential technical training and experiences necessary to thrive in this growing industry. Students will gain the conceptual knowledge, practical skills, and confidence to obtain entry-level employment as biological technicians, manufacturing production technicians, quality control technicians, and environmental monitoring technicians in bioscience laboratories and companies. The program emphasizes work readiness skills, such as resume writing, teamwork, and communication. This degree is intended for students who wish to enter the workforce upon completion.

For more information, contact:

Dr. Salima Allahbachayo, Director, [sallahbachayo@citruscollege.edu](mailto:sallahbachayo@citruscollege.edu)

## Compton College

**Program Name** Associate in Science – Biomanufacturing  
**Website** <https://programmap.compton.edu/academics/interest-clusters/16174beb-f12c-4911-adfd-86b903f67daa/programs/37fede0f-e0e3-4ef3-47c8-28f4db825365>

**Overview** In this biomanufacturing program, students will gain key knowledge, skills, and abilities needed to work in the biomanufacturing industry, which uses biological systems to produce biofuels, vaccines, pharmaceutical drugs, and other therapeutic agents. Students will get hands-on experience with production and analysis of biologically relevant molecules. Students learn both basic and advanced techniques in biotechnology and biomanufacturing such as genetic engineering, cell culture, chromatography including HPLC, and biochemical analysis as well as how to do technical writing, approaches to quality in the biomanufacturing industry, and requirements to work in a regulated environment.

For more information, contact:

Dr. Jose Villalobos Ph.D, Division Chair, [jvillalobos@compton.edu](mailto:jvillalobos@compton.edu)

## East Los Angeles College

**Program Name** Associate in Science - Engineering Technology: Advanced Manufacturing  
**Website** <https://east-la.programmapper.com/academics/interest-clusters/c611f85c-f699-4be1-9663-55de1e807487/programs/33b1ddc0-67c0-546b-6e51-00b3cf841a23>

**Overview** The Engineering Technician: Advanced Manufacturing program is designed to train the students and the work- force in high-growth and high-demand technologies such as; Additive Manufacturing - 3D printing of Polymers and Metals, CNC programming with Mastercam and Operator training in addition to computer Aided Design (CAD) and Computer Aided Manufacturing (CAM). The program offers hands-on experience to become technicians who are able not only to manufacture but analyze and design products, to communicate professionally both orally and in writing, and to work on team-based projects.

For more information, contact:

Jose C. Ramirez, Professor & Chairperson, [ramirejc@elac.edu](mailto:ramirejc@elac.edu)

## El Camino College

**Program Name** Retail Management Certificate  
**Website** <https://www.elcamino.edu/academics/areas-of-study/entrepreneurial-studies.php>

**Overview**

Endorsed by the Western Association of Food Chains, the El Camino retail management certificate program will prepare you for management positions in the retail industry. Take classes in retail management, business management, communications, human relations, and more. Explore courses designed for longtime workers or those just starting out. Obtain possibilities for fee reimbursement from industry partners. Discover solutions to the fast-paced challenges that exist in the competitive retail industry. Learn interpersonal, communication, and management skills that will help you advance in retail and other career paths.

For more information contact:

Virginia Rapp, Dean, [vrapp@elcamino.edu](mailto:vrapp@elcamino.edu)

**Glendale College**

**Program Name** Certificate Program - Entrepreneurship

**Website** <https://www.glendale.edu/academics/degree-certificate-programs/certificate-programs/entrepreneurship-small-business>

**Overview** Upon completion of this program, students will understand and apply the business skills necessary to start or manage a successful small business; be able to create a written business plan; and be able to set-up a payroll system and interpret the data from various forms.

For more information contact:

Michael Scott, Division Chair, [mscott@glendale.edu](mailto:mscott@glendale.edu)

**Long Beach City College**

**Program Name** A.A. Business: Global Trade and Logistics

**Website** <https://www.lbcc.edu/gtl>

**Overview** The Global Trade and Logistics program at LBCC offers courses designed to develop the skills necessary to succeed in today's global business environment. The two areas of study within the concentration are International Business, which provides a broad perspective of the traditional business functions within a global framework, and Logistics, which offers a detailed look at supply chain management and distribution.

For more information contact:

Dr. Karen Faulkner, Department Head, [kfaulkner@lbcc.edu](mailto:kfaulkner@lbcc.edu)

**Los Angeles City College**

**Program Name** AS Engineering

**Website** <https://www.lacc.edu/academics/aos/engineering>

**Overview**

The Engineering Associate of Science degree consists of the math, physics, chemistry, and engineering courses that are typically required to fulfill lower division requirements for transfer as Mechanical, Civil, Electrical, or Computer Engineering majors at four-year colleges. Students should have completed precalculus level math to begin the sequence of math and physics courses that comprise this degree; ENG GEN 101 and ENG GEN 121 have no math prerequisites and hence should be taken early. Students undertaking this program of study are advised to meet with a counselor to develop an optimal educational plan to ensure completion of this high-unit degree within a reasonable time period.

For more information contact:

Dr. Jayesh Bhakta, Department Chair, [bhaktaj@lacitycollege.edu](mailto:bhaktaj@lacitycollege.edu)

### Los Angeles Harbor College

**Program Name**

Associate in Science for Transfer – Environmental Science

**Website**

<https://la-harbor.programmapper.com/academics/interest-clusters/8294c792-b755-4465-ae87-e6a106a100e3/programs/dfc83425-bd09-3f66-cffd-d4f8a8edfadf>

**Overview**

Environmental Science is a multidisciplinary field covering the physical, biological, economical, and legal aspects of the environment. The Associate in Science in Environmental Science for Transfer (AS-T) Degree is intended for students planning to transfer into a Bachelor of Science program in Environmental Science or related areas at a California State University (CSU); guaranteeing admission to the system (but not to a specific campus), and priority consideration for admission to the equivalent CSU program.

For more information contact:

Dr. J. Arias, Division Chair, [ariasjj@lahc.edu](mailto:ariasjj@lahc.edu)

### Los Angeles Mission College

**Program Name**

Bachelor of Science – Biomanufacturing

**Website**

<https://la-mission.programmapper.ws/academics/interest-clusters/fd4c554f-6a1c-4180-9c09-900520f4d4a8/programs/033f6bf4-b154-23ee-99b6-2a1cc5a91d9d>

**Overview**

The bachelor's degree program in biomanufacturing will build seamlessly upon the associate degree program in biotechnology, allowing students who complete the associate degree or equivalent coursework from other colleges to enter as juniors and earn a baccalaureate degree. The biomanufacturing bachelor's degree program develops the skills, abilities, and knowledge that students need to work in the unique environment of biological production.

For more information contact:

Par Mohammadian, Vice Chair, [mohammp@lamission.edu](mailto:mohammp@lamission.edu)

## Los Angeles Pierce College

**Program Name** Associate in Science – Cloud, Networking, and Cybersecurity

**Website** <https://programmapper.piercecollege.edu/academics/interest-clusters/d751e218-8964-4d43-ab2d-c3dd10011658/programs/02b4ceb8-40b2-6480-d2cc-4b9bfedb6c1c>

**Overview** This two-year program provides in-depth knowledge and hands-on experience for students who wish to start or enhance their careers in Cloud, Networking, and Cybersecurity. Graduates will be prepared to design and deploy secured network domains to support applications and operations in the Cloud and on premises. Students gain skills and knowledge in configuration and troubleshooting of network routers, switches and firewalls; Windows and Linux server installation and configuration; and implementation of effective cybersecurity measures such as prevention of hacking activities.

For more information contact:

Natalia Grigoriants, Department Chair, [grigorn@lacc.edu](mailto:grigorn@lacc.edu)

## Los Angeles Southwest College

**Program Name** Associate in Science – Mathematics: Computer Science

**Website** <https://programmap.lasc.edu/academics/interest-clusters/f7c37c38-8ba0-4673-a6fb-a25f3fb48151/programs/2f2d292f-db20-8159-9c7e-efbdfd222923>

**Overview** Upon completion of this program, students should be able to: 1. Write a program on an object oriented interface in Visual Basic (with at least 65% success rate). 2. Solve systems of linear equations by graphing, and algebraic methods (with at least 65% success rate). 3. Graph a linear, quadratic, polynomial, rational, exponential, log, and trigonometric functions (with at least 65% success rate). 4. Evaluate the first and second derivatives of a given function (with at least 65% success rate). 5. Determine whether a pair of functions are linearly independent or dependent on the real numbers (with at least 65% success rate).

For more information contact:

Dr. Lernik Saakian, Chair, [saakial@lasc.edu](mailto:saakial@lasc.edu)

## Los Angeles Trade Technical College

**Program Name** AS Microcomputer Technician

**Website** <https://programmap.lattc.edu/academics/interest-clusters/6277b323-b685-4873-8264-4429023a1aa4/programs/1537be66-95ac-60e8-ada7-5c3e1a149ed4>

**Overview** The Microcomputer Technician program is designed to prepare a technician to install, configure, and add auxiliary equipment for a microcomputer. The technician is also able to load software and suggest programs to answer the needs of individuals and companies. Microcomputer Technicians must be above average in knowledge of mechanical systems. They must also have interest and ability in mathematics to successfully apply the training presented in this program. The computer industry is expanding due to the continuing drop in the

price of computers and the introduction of new models with greater power.

For more information contact:

Jess Guerra, Department Chair, [ATMPathway@lattc.edu](mailto:ATMPathway@lattc.edu)

## Los Angeles Valley College

<b>Program Name</b>	Certificate – Cloud Computing
<b>Website</b>	<a href="https://www.lavc.edu/academics/aos/computer-information-systems">https://www.lavc.edu/academics/aos/computer-information-systems</a>
<b>Overview</b>	The Certificate in Cloud Computing program prepares students to design solutions for infrastructure as a Service (IaaS) architectures by provisioning computing instances, establishing virtual private networks, managing databases and storage within a secure online environment. Students produce dynamic solutions responsive to information and computing technology workloads with on-demand pay-as-you-go pricing allowing flexibility for small business, entrepreneurship and enterprise adoption. Industry certifications are embedded to prepare for occupations in Cloud Architect, Cloud Support Associate, Cloud Engineer or Cloud Technicians. Some preparation in information technology or computer programming is recommended. The program utilizes AWS platform and academic contents to prepare the students to manage cloud-based computer systems.

For more information contact:

Michael Rahni, Department Chair, [rahnim@lavc.edu](mailto:rahnim@lavc.edu)

## Mt. San Antonio College

<b>Program Name</b>	AS - Artificial Intelligence for Business
<b>Website</b>	<a href="https://catalog.mtsac.edu/programs/programsaz/artificial-intelligence/artificial-intelligence-for-business-as/">https://catalog.mtsac.edu/programs/programsaz/artificial-intelligence/artificial-intelligence-for-business-as/</a>
<b>Overview</b>	The A.S. Degree in Artificial Intelligence for Business is designed for returning CIS, business, marketing, and data analytics professionals with industry experience or students who have completed CIS courses. The degree offers a balanced set of classes that provides students with the knowledge and skills to obtain jobs in the areas of data science, data analysis, data mining, text mining, business intelligence, machine learning, deep learning, natural language processing, and artificial intelligence research. Students will learn how to make business decisions using different machine learning algorithms and deep learning prediction models of different complexities. Students will learn how to use natural language processing to better understand customer intent through sentiment analysis and gather market intelligence.

For more information contact:

Louis Vayo, Dept Chair, [lvayo@mtsac.edu](mailto:lvayo@mtsac.edu)

## Pasadena City College

<b>Program Name</b>	Associate in Science Degree - Computer Information Systems – Software
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## Development

### Website

<https://pasadena.edu/academics/degrees-and-certificates/certificates-of-achievement/programming.php>

### Overview

This Software Development curriculum prepares students with necessary skills to seek entry-level employment in software development. Instruction includes development, testing, and maintenance of applications using programming languages including and not limited to Python, C++, Java, and SQL. Upon completion of coursework, students will have the foundation needed to pursue industry certifications including and not limited to Python institute's Certified Associate in Python Programming (PCAP) and Certified Professional in Python Programming (PCPP), C++ Institute's C++ Certified Associate Programmer (CPA) and C++ Certified Professional Programmer (CPP), Oracle Certified Associate (OCA) – Java SE Programmer, and Oracle Certified Professional (OCP) – Java SE Programmer.

For more information contact:

Matthew Barboza, Division Dean, [mbarboza3@pasadena.edu](mailto:mbarboza3@pasadena.edu)

## Rio Hondo College

### Program Name

Associate of Science – Electronics Technology

### Website

<https://pathways.riohondo.edu/program/electronics-technology-as/>

### Overview

Provides a fundamental knowledge of the general architecture of microcomputers. Emphasis is on the study of organization and structuring of the major hardware and software components of computers, including the central processing unit (CPU) and some of the input/output (I/O) devices used to interface the CPU to various peripheral devices. The course considers the physical aspects of information transfer and control within a digital computer, and emphasizes network architecture, communication protocol, microprogramming instruction sets, and assembly language programming. Laboratory exercises focus on construction and deconstruction of a basic computer and testing and troubleshooting critical functions. This course is for students who are contemplating a career in the electrical/electronics industry.

For more information contact:

Bridgette M. Hernandez, Dean, [BHernandez@riohondo.edu](mailto:BHernandez@riohondo.edu)

## Santa Monica College

### Program Name

Certificate of Achievement – Applied Artificial Intelligence

### Website

<https://www.smc.edu/academics/academic-departments/csis/computer-science.php>

**Overview**

At Santa Monica College, our students are the change agents who will bring the next wave of technology to fruition. As our computers, mobile devices and interfaces become smarter, the market will look to the next generation of computer and information systems professionals, web developers, programmers, and technicians to provide efficient, cost-effective and stable technology solutions. Our courses teach foundational skills while also drawing inspiration and insight from industry professionals, whose real-world examples and applications help bring the classroom to life.

For more information contact:

Howard Stahl, Department Chair, [stahl\\_howard@smc.edu](mailto:stahl_howard@smc.edu)

**West Los Angeles College**

**Program Name**

Certificate of Achievement – Cyber Security Essentials

**Website**

<https://www.wlac.edu/sites/wlac.edu/files/2024-04/Cybersecurityflyer040324.pdf>

**Overview**

This low unit Certificate of Achievement will provide the fundamentals of Cyber Security to college students who are interested in learning the cybersecurity practice of protecting networks, systems, programs, and data from criminal or unauthorized use. Students will learn skills of configuring operating system security, network security, Internet security, and so on. Students will develop skills at innovative solutions for existing and emerging industries. This certificate is a stackable certificate that may lead to a Certificate of Achievement (16 and 30 units) and AS degree (60 units) in Computer Network and Security Management which have been offered since 2015 at West Los Angeles College.

For more information contact:

Anna Chiang, Chairperson, [chiangas@laccd.edu](mailto:chiangas@laccd.edu)