



# AI-Enhanced Education in Nevada and its Transformative Impact on Workforce Development, Employment Prospects, and Tomorrow's Job Market Proficiencies

The Nevada Governor's Office  
of Workforce Innovation  
(GOWINN)

Nevada P-20 to Workforce  
Research (NPWR) Grant  
Report Presentation

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# Agenda

## ➤ **Current Status of AI and Nevada: Education and Workforce Pipeline**

### ➤ **Study Findings**

- **K-12 Education**
- **Higher Education**
- **Workforce**

### ➤ **Policy Recommendations**

- **K-12 Education**
- **Higher Education**
- **Workforce**



# Key Question

- **Is Nevada adequately prepared to seize the opportunities presented by the AI technological revolution?**





# Study Aims



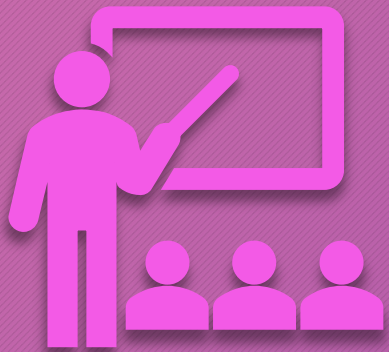
- This report evaluates Nevada's readiness for AI-driven employment across three pivotal dimensions:
  - **Computer-related curriculum and instruction at the K-12 education level**
  - **Collegiate program offerings and graduation rates**
  - **The alignment between the current and anticipated AI workforce within the state**
- **This study aims to identify both challenges and opportunities as the state navigates the AI landscape.**



# AI and Nevada: Current Status

## *AI's Role in Shaping Nevada's K-12 Classrooms*

- The state has introduced standards for computer science education, which are designed to provide students with foundational skills in computer programming, cybersecurity, data analysis, and understanding the impacts of AI on society
- The implementation of these standards varies significantly across school districts, often depending on the resources available at individual schools.



## AI and Nevada: Current Status

### *AI and the Transformation of Higher Education in Nevada*

- Nevada's higher education institutions have developed robust computer science departments that are also involved in ground-breaking AI research and development.
- UNLV's 2024 Generative AI Fellows Pilot Program serves as a resource for faculty and staff
- Successful public-private collaborations: One example, involves Black Fire Innovation and the AI Foundation, the latter of which is managed by UNLV alumni.
  - Digital President Whitfield





# AI and Nevada: Current Status

## *Nevada's AI Workforce Evolution*



Nevada's strategic push towards becoming a tech hub.



Workforce development initiatives that focus on continuous learning and re-skilling.



Need for broader, more integrated policies that can keep pace with rapid technological advancements

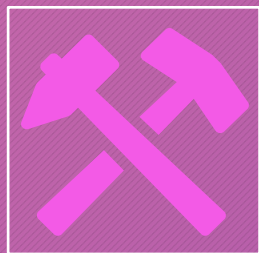


Lack of robust, sustained and timely support systems for transition programs that can help workers from declining industries move into tech-oriented careers.



# AI and Nevada: Current Status

## *Summary of Observations Regarding Current Status*



Nevada's prospects for AI educational advancement and workforce development in the AI sector are both promising and challenging.



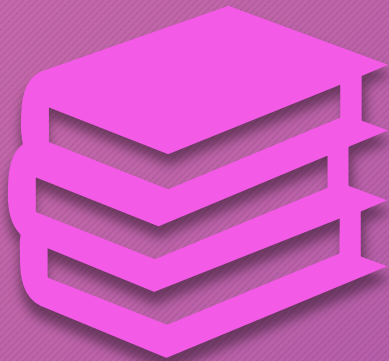
Nevada is actively positioning itself to capitalize, as it works to educate and train an AI competent workforce that is sizeable enough to fill the rapidly growing number of positions in this sector.





# Study Findings: K-12 Education

## *AI Integrated K-12 Education in Nevada*



- First objective is to assess, Nevada's status with regard to educating and training an AI competent workforce
- Utilize educational data from the Nevada P-20 to Workforce Research Data System (NPWR) and the National Assessment of Educational Progress (NAEP) to examine Nevada's K-12 education system alongside measures of computer science readiness.



# Study Findings: K-12 Education

## *Mathematics Proficiency as a Measure of Computer Science Readiness*



Math proficiency at the primary and secondary education level is a critical measure of readiness for computer science because of the strong overlap in foundational skills required by both disciplines.



Mathematics, particularly subjects like that of algebra, calculus, and logic, serve as the basis for computer science concepts such as algorithms, computational thinking, and programming.



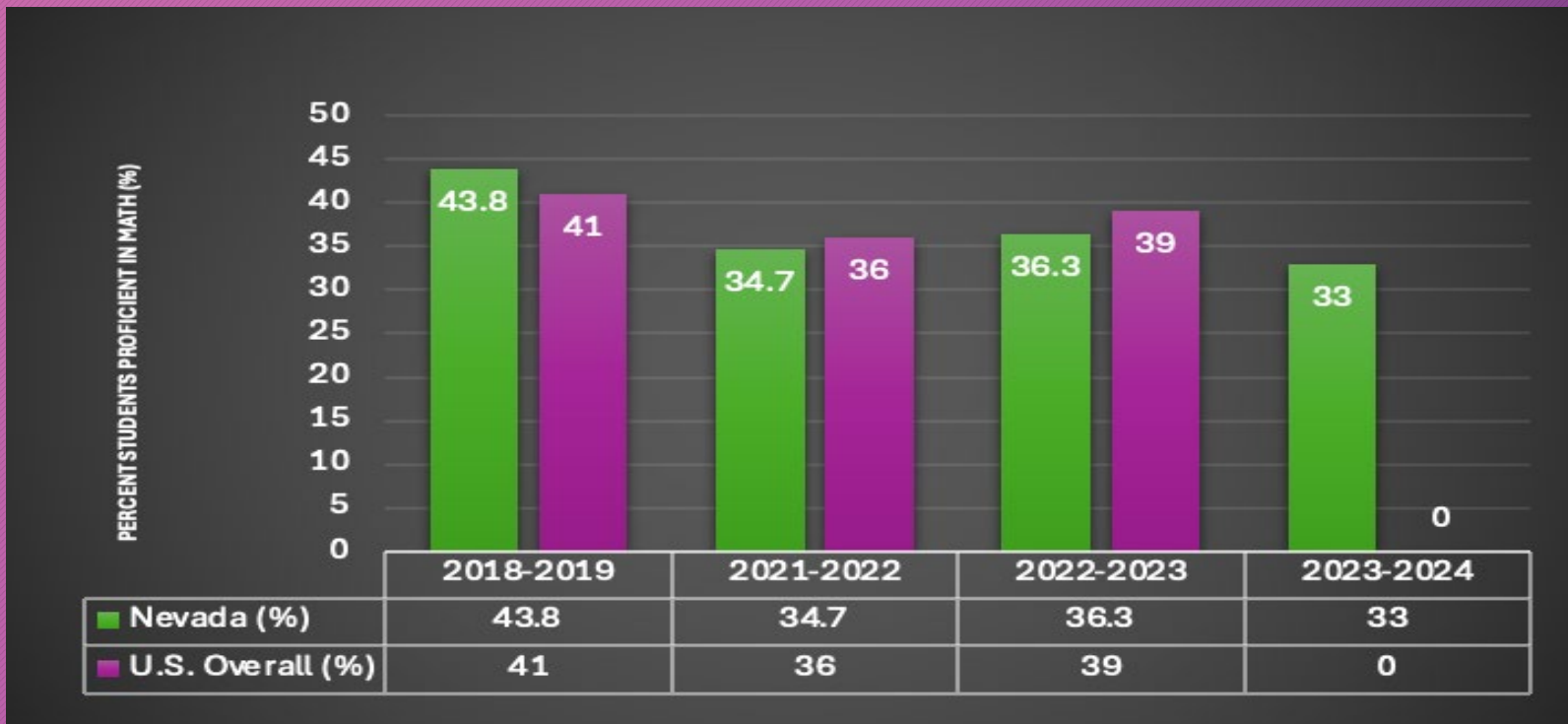
A solid understanding of mathematical concepts allows students to think abstractly, recognize patterns, and develop solutions in a logical sequence, all of which are essential in writing efficient code and solving computational problems.



Research indicates that students who demonstrate higher math proficiency in K-12 education are better equipped to succeed in computer science courses and careers (Ericson, et al., 2016).

# Study Findings: K-12 Education

Figure 1: Percent of Nevada Elementary Students in Comparison to U.S. Average that Demonstrated Proficiency in Math as a Measure of Computer Science Readiness, School Years: 2019, 2022, 2023, 2024 (Nevada Only)



Note: U.S. data will be released in 2025 for 2023-2024 school year

# Study Findings: K-12 Education

Figure 2: Percent of Nevada Middle School Students in Comparison to U.S. Average that Demonstrated Proficiency in Math as a Measure of Computer Science Readiness, School Years: 2019, 2022, 2023, 2024 (Nevada Only)



Note: U.S. data will be released in 2025 for 2023-2024 school year

# Study Findings: K-12 Education

Figure 3a: Percent of Nevada High School Students in Comparison to U.S. Average that Demonstrated Proficiency in Math as a Measure of Computer Science Readiness, School Year: 2019, 2023, 2024

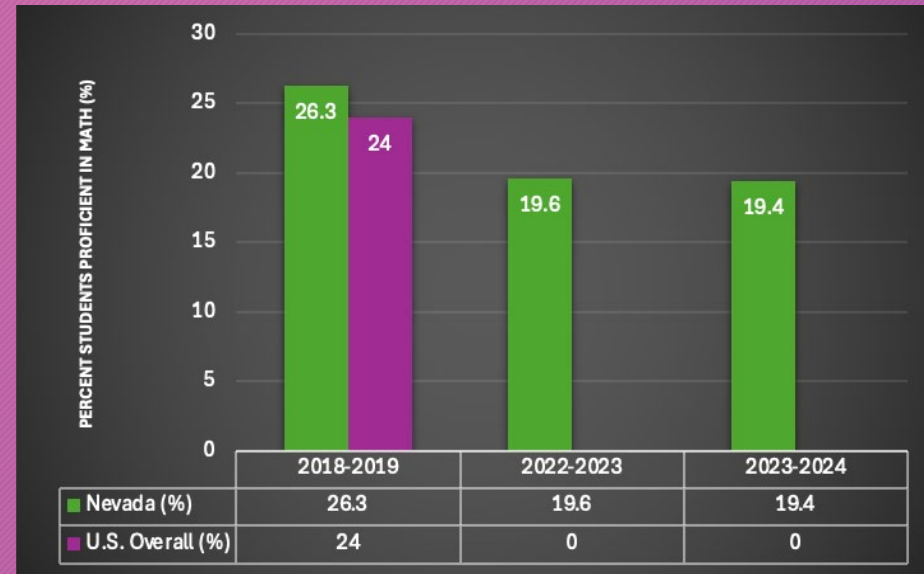
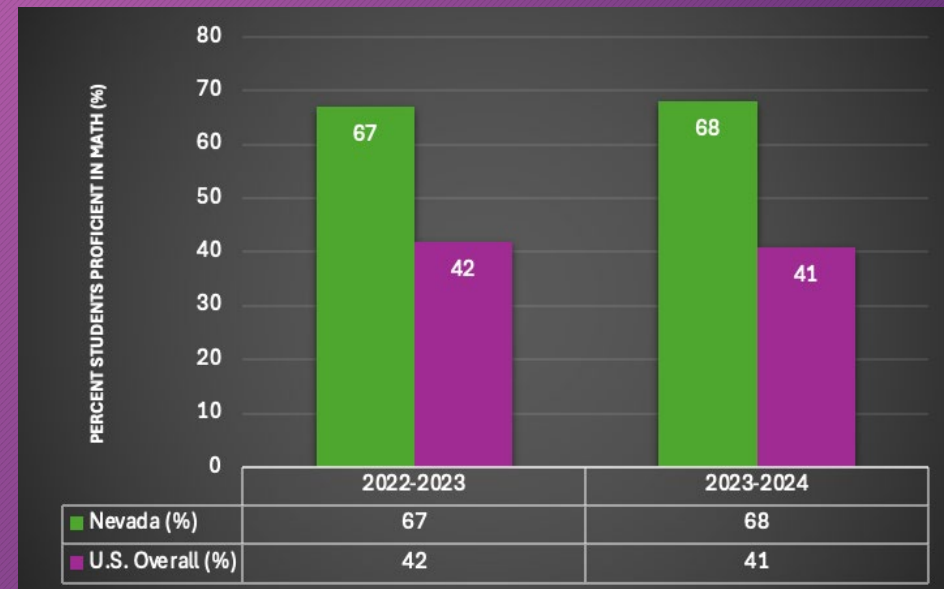


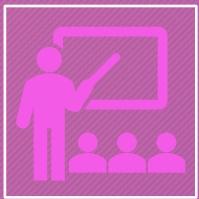
Figure 3b: Percent of Nevada High School Students in Comparison to U.S. Average that Demonstrated Proficiency in Math on the SAT as a Measure of Computer Science Readiness, School Year: 2019, 2023, 2024





# Study Findings: K-12 Education

## *Computer Science Education and Training*



Studies have shown that gaps in mathematical preparation can be closed when students are exposed to computer science curricula, especially at a young age (Grover and Pea, 2013).



This suggests that early exposure to computer science can mitigate weaknesses in math



That's because, it is computer science proficiency in itself—encompassing the skills of logical reasoning, algorithmic thinking, and coding—that is the most direct measure of readiness for the field.



# Study Findings: K-12 Education

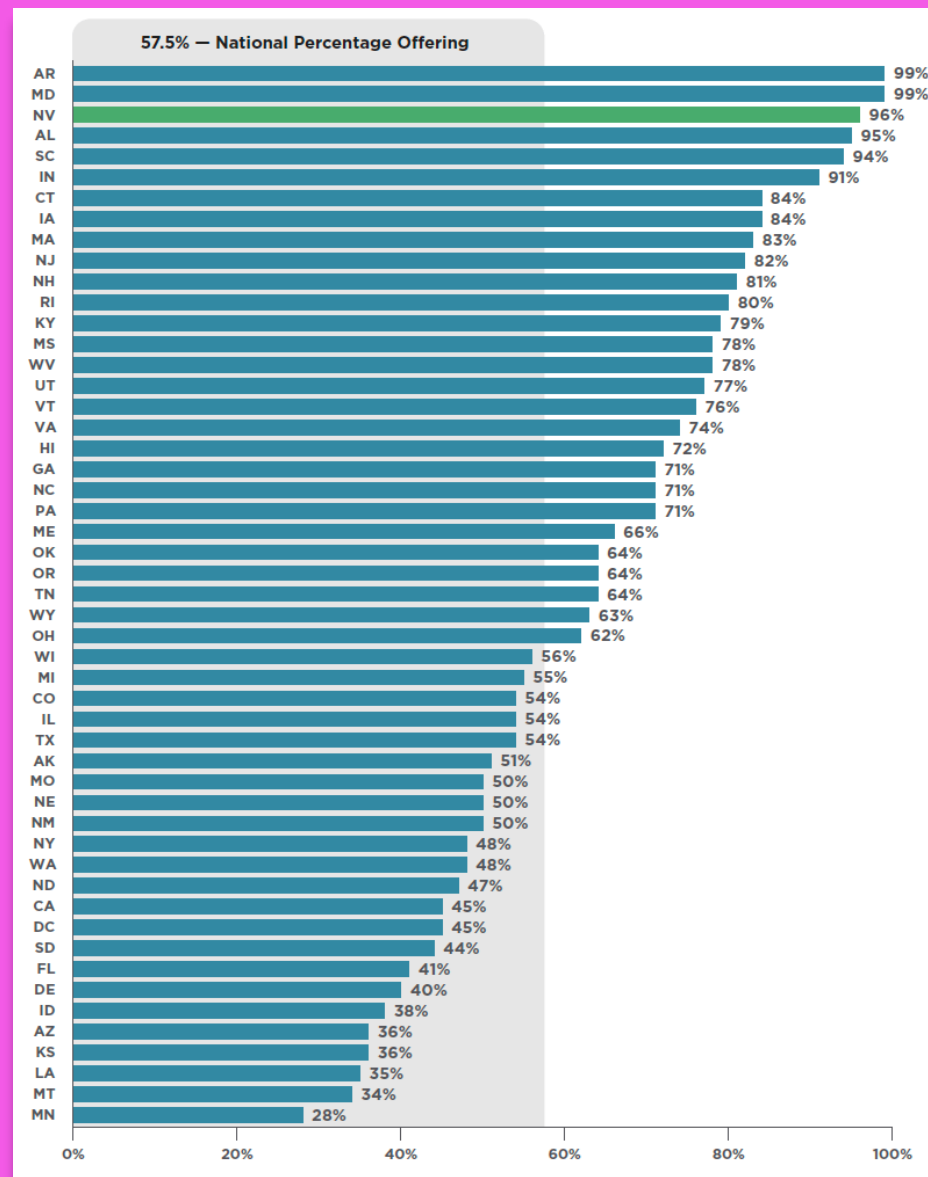
But according to NDOE, in 2018, Nevada produced 199 computer science high school graduates, out of a total of 30,204 graduating students.

That translates into less than 1% of Nevada's high school graduates achieving at least a basic level of proficiency in computer science



# Study Findings: K-12 Education

Table 2: Nationwide Percentage of Public High Schools Offering Foundational Computer Science, 2023







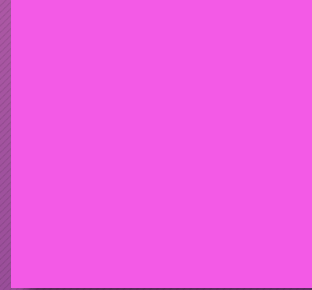
# Study Findings: Higher Education

- College graduates with expertise in AI and related fields command significantly higher salaries, with median annual wages in computer and information technology jobs more than double the median wage for all occupations.
- Utilizing data from the Nevada P-20 to Workforce Research Data System (NPWR), we assess the effectiveness of Nevada's institutions of higher education in producing graduates in AI-related fields.





# Study Findings: Higher Education



**Figure 4: Total Number of Students Graduating with Degrees\* from All Nevada Institutions of Higher Education in AI Related Fields, 2018-2022**

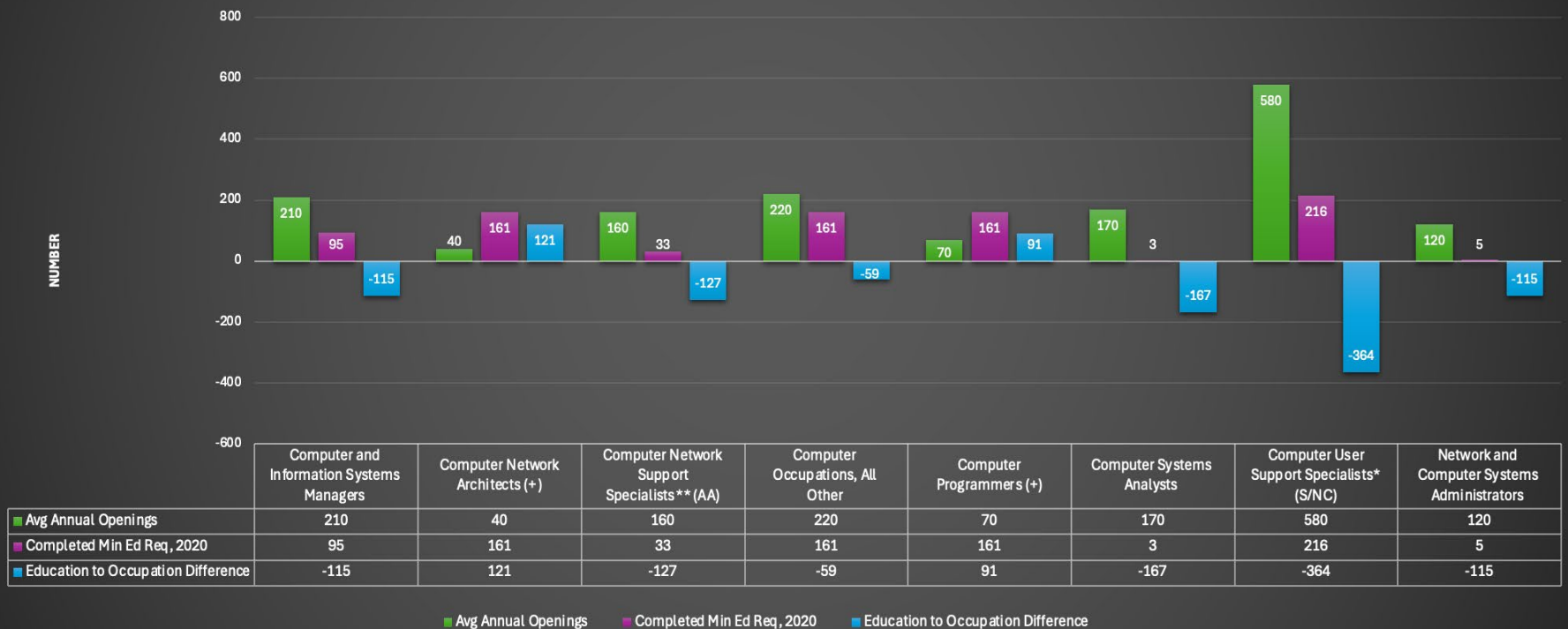
# Study Findings: Higher Education

## *Quick Note About Minimum Education Requirements*

	OCCUPATION 	JOB SUMMARY	ENTRY-LEVEL EDUCATION  	2023 MEDIAN PAY  
	<a href="#">Computer and Information Research Scientists</a>	Computer and information research scientists design innovative uses for new and existing computing technology.	Master's degree	\$145,080
	<a href="#">Computer Network Architects</a>	Computer network architects design and implement data communication networks, including local area networks (LANs), wide area networks (WANs), and intranets.	Bachelor's degree	\$129,840
	<a href="#">Computer Programmers</a>	Computer programmers write, modify, and test code and scripts that allow computer software and applications to function properly.	Bachelor's degree	\$99,700
	<a href="#">Computer Support Specialists</a>	Computer support specialists maintain computer networks and provide technical help to computer users.	<a href="#">See How to Become One</a>	\$60,810
	<a href="#">Computer Systems Analysts</a>	Computer systems analysts study an organization's current computer systems and design ways to improve efficiency.	Bachelor's degree	\$103,800
	<a href="#">Database Administrators and Architects</a>	Database administrators and architects create or organize systems to store and secure data.	Bachelor's degree	\$117,450
	<a href="#">Information Security Analysts</a>	Information security analysts plan and carry out security measures to protect an organization's computer networks and systems.	Bachelor's degree	\$120,360
	<a href="#">Network and Computer Systems Administrators</a>	Network and computer systems administrators install, configure, and maintain organizations' computer networks and systems.	Bachelor's degree	\$95,360
	<a href="#">Software Developers, Quality Assurance Analysts, and Testers</a>	Software developers design computer applications or programs. Software quality assurance analysts and testers identify problems with applications or programs and report defects.	Bachelor's degree	\$130,160
	<a href="#">Web Developers and Digital Designers</a>	Web developers create and maintain websites. Digital designers develop, create, and test website or interface layout, functions, and navigation for usability.	Bachelor's degree	\$92,750

# Study Findings: Higher Education

Figure 5: AI Postsecondary Education to Occupation Difference, 2020



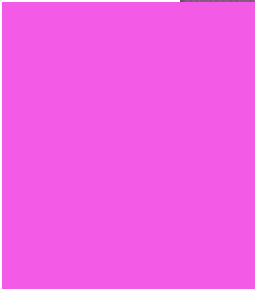


# Study Findings: Nevada Workforce

## *AI-Integrated Nevada Workforce*

- As more businesses adopt AI technologies, the computer science and AI sectors are projected to experience substantial growth.
- This section evaluates Nevada's current workforce trends using data from the Nevada P-20 to Workforce Research Data System (NPWR), the Bureau of Labor Statistics (BLS), and the American Community Survey (ACS).
- **The goal is to pinpoint areas where Nevada excels in building a robust, AI-integrated workforce.**





# Study Findings: Nevada Workforce

Figure 8: Postsecondary Education to Occupation Difference in 2020 and Projected Postsecondary Education to Occupation Difference by 2030, with Net Change





# Policy Recommendations: K-12 Education

## *1. AI Enhanced Primary Education:*

**NDOE expands its curricular offerings beyond a foundational course at the secondary level and introduce students to computer science instruction at the primary level.**







# Policy Recommendations: K-12 Education

## 2. *Expand K-12 and Higher Education Partnerships:*



UNLV and UNR have both been instrumental in fostering AI and computer literacy among Nevada's K-12 students by establishing local community engagement initiatives like that of [UNR's K-12 Robotics Center](#) and [UNLV's hosting of technology camps by iD Tech](#).




These programs serve as models, which can either be adapted to include [Nevada's network of community colleges and smaller institutions](#), or replicated at these institutions with the goal of meeting the needs of K-12 students in rural settings.



# Policy Recommendations: Higher Education

## *1. Expand Online Degree Offerings and Remote Learning Opportunities:*



Only UNLV and UNR offer four-year degrees in computer science. Students either must pursue an online computer science degree or explore participating in student exchange programs and reciprocity agreements.

Nevada has laid the groundwork to meet the needs of students across the state but simply lacks a comprehensive system-wide strategic plan driven by NSHE.



# Policy Recommendations: Nevada Workforce

## *1. Build Upon Industry Partnerships:*

Nevada is at the forefront of integrating AI innovations to enhance workforce efficiency and address state-wide challenges.

The state government's recent implementation of a generative AI system developed by Google to analyze and generate recommendations for unemployment appeals hearings is a pioneering example of how AI can streamline state operations.





# Policy Recommendations: Nevada Workforce

## *2. Targeted and Flexible Upskilling Programs:*

The success of the Transmosis Program, which was initiated with a STEM Workforce Challenge Grant (2017-2018) to provide cybersecurity training, underscores the potential of targeted upskilling initiatives.

Expand this model to include AI and computer literacy, essential skills for the modern workforce.

Training programs could be modeled after UNLV's Tech Bootcamps



# Policy Recommendations: Nevada Workforce

## *3. Remote Workforce Recruitment and Scalability:*

The scalability of remote work should also be considered as a strategic advantage.

Nevada can attract a wider pool of talent who are proficient in AI technology, effectively addressing workforce gaps in critical areas.

This strategy has been used with a great deal of success by companies struggling to fill a large number of vacant positions.

The background is a solid purple color with a pattern of semi-transparent, overlapping question marks. A horizontal bar is positioned at the bottom of the image, divided into a black section on the left and a bright pink section on the right. The word "Questions?" is written in white, sans-serif font on the black section of the bar.

Questions?

# Study Findings: Nevada Workforce

Figure 8: Number of Postsecondary Students that Completed the Minimum Education Requirements for Each Occupation in 2020 in Comparison to the Projected Number of Students that Completed the Minimum Education Requirements for Each Occupation in 2030, with Net Change

