



## Artificial intelligence: taking on a bigger role in our future security

*By Stanislava Ilic-Godfrey*

You are fast asleep in your bed. Suddenly, you are jarred awake when your mobile phone emits a sudden bumble-bee vibrating pulse on your nightstand. You lift your head to gather your senses. You think you hear a rustling commotion in the kitchen. “Is it an intruder?” you wonder. You fly a drone into the kitchen to see what’s going on and realize it’s one of your teenagers up for a late night snack. This is the whizbang security technology of the future.<sup>1</sup> Employment in the investigation and security services industries will benefit from installing and using these types of technology.

Technological advances in cameras, sensors, and robotics capabilities have led to the development of improved security equipment and subsequently their increased use in protecting homes, businesses, and public spaces. Sensors are no longer triggered only by motion activities; they are increasingly equipped with ultra-high resolution cameras and built-in artificial intelligence (AI). These security systems can recognize the faces of those living in a home or working in an office space. If a captured image might be that of an intruder (unfamiliar face), it could activate the alert system.<sup>2</sup>

This **Beyond the Numbers** article examines the role of technology and its differing growth effects on employment within the investigation and security services sector over the 2019–29 projection period. On the one hand, the adoption of increasingly sophisticated technology is expected to boost consumer demand (security gives piece of mind to customers, and customers have access to the alert system from anywhere) for security alarm system installations and monitoring services, and the workers who sell and install them. On the other hand, the adoption of these same technological innovations is likely to have a weakening effect on employment growth in the security guard services marketplace.

## Faster employment growth projected

The Bureau of Labor Statistics (BLS) projects employment in the investigation and security services sector to grow 6.5 percent from 2019 to 2029, faster than the average of 3.7 percent for all workers in all industries.

**Table 1. Projected employment change for investigation and security services, 2019–29 (employment in thousands)**

Industry title	Employment		Employment change, 2019–29	
	2019	2029	Number	Percent
Total employment	162,795.6	168,834.7	6,039.2	3.7
Investigation and security services	956.1	1,017.9	61.8	6.5
Investigation, guard, and armored car services	806.4	847.9	41.5	5.2
Security systems services	149.7	170.0	20.3	13.6

Source: U.S. Bureau of Labor Statistics.

Within this sector, employment in investigation, guard, and armored car services, about 84 percent of sector employment, is projected to grow 5.2 percent. Employment in security systems services, which is roughly 16 percent of sector employment, is projected to grow 13.6 percent, which is more than 2-1/2 times faster than the larger sector component, and more than 3-1/2 times faster than total employment. (See [table 1.](#))

## What products and services do these industries provide?

The investigation, guard, and armored car services industry provides a range of security services for businesses, governments, and private citizens alike. These services include providing investigation and detective services; guarding and patrolling properties; and picking up and delivering money, receipts, or other valuables in armored vehicles. Most workers in this industry are [security guards](#) who maintain the safety and security of an area by being onsite or by monitoring security cameras remotely.

The security systems services industry typically sells security alarm systems, such as burglar and fire alarms, and locking devices. Firms in this industry might also install and repair these systems and provide monitoring services, usually remote monitoring. They sell these services to commercial customers (businesses and governments) and residential customers (homeowners) to protect and secure their properties, workers, families, and valuables.

## Innovations in security technology

Cameras and sensors are more sophisticated today than ever before. Security cameras record and display footage in high resolution and function in low-light visibility settings, and they can be remotely connected with or controlled by other devices, such as cell phones.<sup>3</sup> Sensors can detect specific audio sounds, identify motion, temperature, and humidity changes, and are increasingly being used in both businesses and homes.<sup>4</sup> Motion sensors placed on windows and doors can trigger camera recordings to identify whether the image captured is known or unknown.<sup>5</sup> Property owners can now open doors or communicate with a visitor at their door remotely thanks to mobile and audio sensor technologies that connect home cameras to mobile devices.<sup>6</sup>

Some video surveillance systems have capabilities beyond just capturing images. Some systems can read and analyze data, such as license plates, and check them against a database, map the movement of people and vehicles, and alert police or security patrol.<sup>7</sup> When connected to other mounted sensors, security systems have the capability to lock the doors in a school or business when audio sensors identify gunshot fire in the area.<sup>8</sup>

Security cameras and robots are increasingly equipped with embedded AI software programmed to scan or “patrol” routes, learn their surroundings, spot threats of unauthorized entry from people or vehicles, and initiate alerts.<sup>9</sup> Additionally, security firms increasingly use smartphone apps to connect with cameras and allow some onsite security functions to be done remotely. One example of such technology is with the employment of what is referred to as a “lone-worker security officers” model. As officers physically move around the space they are monitoring, their smartphones communicate with poker-sized chips placed throughout their post, enabling technology to track their movement and transmit videos and photos to their smartphones in real time. This establishes a baseline report for the area that serves as a reference should something happen later.<sup>10</sup> With more cameras installed on a premise, fewer officers are needed to patrol a given space as the technology aids them to identify and address an incident in real time from another location by using the baseline report established earlier.<sup>11</sup>

Robotic surveillance monitors are typically offered as a “robot-as-a-service model.” Because they are new and may be costly, businesses often lease them.<sup>12</sup> As the robot monitoring technologies develop and become more common they are expected to become more affordable for businesses that need to increase or supplement their security systems.

Increased demand for installing and maintaining sophisticated security technology products is driving up employment in security systems services. However, these same or similar technologies are having a dampening impact on employment in investigation, guard, and armored car services.

## Security systems services

The core functions of security systems services companies are to sell and install security alarm systems, including remote monitoring. Employment of this industry is projected to grow 13.6 percent, adding 20,300 jobs from 2019 to 2029, much faster than the average for the total economy. This projected employment trend follows the explosion

of improved video and sensor technology use in security alarm monitoring and is driving demand for more security alarm installations to prevent or deter crime.

More video surveillance systems have been installed for businesses, governments, and citizens to help deter and catch those involved in criminal or unwanted activity. From 2015 to 2018, the number of installed surveillance cameras grew nearly 50 percent, from 47 to 70 million, in the United States.<sup>13</sup> Surveillance camera installations are expected to grow from 70 million in 2018 to about 85 million cameras in the United States by 2021, an increase of about 21 percent.<sup>14</sup> Cameras with enhanced software at a traffic light can alert police to the movement of a stolen vehicle.<sup>15</sup> Store owners can also use information from security cameras for security purposes and for business analytics about their shoppers' age, sex, and the time of their visit.<sup>16</sup>

The global demand for sensors is projected to grow 9.5 percent from 2019 to 2025.<sup>17</sup> Integrating enhanced technology in cameras and sensors promises more opportunities for additional demand for security equipment installations over the projections period. Business owners and governments invest in these capabilities to supplement the security of their property and people. For example, security systems in schools and businesses integrate videos and audio sensors, whose advanced technology can trigger real-time action, such as reviewing live feeds, locking doors, or alerting police. The real opportunity to enhance safety is what will drive consumers and companies to adopt these security measures, leading to increased demand for more installations, contributing to the fast projected employment increase in the security systems services industry.

## Investigation, guard, and armored car services

Employment of the investigation, guard, and armored car services industry is projected to grow 5.2 percent from 2019 to 2029, faster than the average for the total economy. Increased security has become an important issue for governments and businesses alike because violent acts and shootings in public places such as schools, places of worship, malls, and sports venues have become more frequent.<sup>18</sup> This has led to an increase in the demand for maintaining a physical security presence at a site or around people and property, and will contribute to employment growth over the next decade. Security firms' officers provide these important functions to businesses and governments, keeping people and property safe.

Security firms and security guards have long used technology, such as video monitoring, to surveil property and improve their effectiveness in maintaining the security of an area. However, security technology is rapidly evolving and becoming more sophisticated, able to analyze image data captured from devices, drone scans, or robots. The analysis generates more and higher quality information to be acted upon. This information is used to determine if and when a security guard should act. They don't have to act every time a shadow is detected, for example. An increased use of this kind of technology is expected to limit future demand growth for security guards because the productivity enhancements mean fewer guards will be needed to patrol the same area as before. However, patrols and guards will still be needed to address the alerts triggered by technology.<sup>19</sup> For example, new surveillance cameras might detect an incident and trigger the alarm system automatically, directing security personnel to check the surveillance camera's live feed and respond to the site if needed.

Technology will limit the need for officers to patrol an area where no suspicious activity has been detected, consequently changing the role of security personnel—from less physical patrols to more remote responses whenever suspicious activity occurs. This enhanced productivity is projected to keep employment growth from going much above 5 percent in investigation, guard, and armored car services over the 2019–29 decade.

## Conclusion

The investigation and security services sector is projected to see faster-than-average employment growth from 2019–29. The increasing use of technology is expected to have divergent implications for employment within the sector’s two industries. Growing demand for security equipment to be installed in homes and businesses will drive employment in the security systems services industry. There is also growing demand for physical security services. However, the integration of more sophisticated technology into security systems is expected to make security guards more efficient and productive. They will be able to patrol and secure larger spaces with fewer workers, thereby weakening future demand for employment in the investigation, guard, and armored car services industry.

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### NOTES

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**SUGGESTED CITATION**

Stanislava Ilic-Godfrey, “Artificial intelligence: taking on a bigger role in our future security,” *Beyond the Numbers: Employment and Unemployment*, vol. 10, no. 9 (U.S. Bureau of Labor Statistics, May 2021), <https://www.bls.gov/opub/btn/volume-10/investigation-and-security-services.htm>