

 **HGS**<sup>®</sup> digital

A NEW FRONTIER:

**CAN ARTIFICIAL  
INTELLIGENCE SAVE LIVES  
IN THE WORKPLACE?**

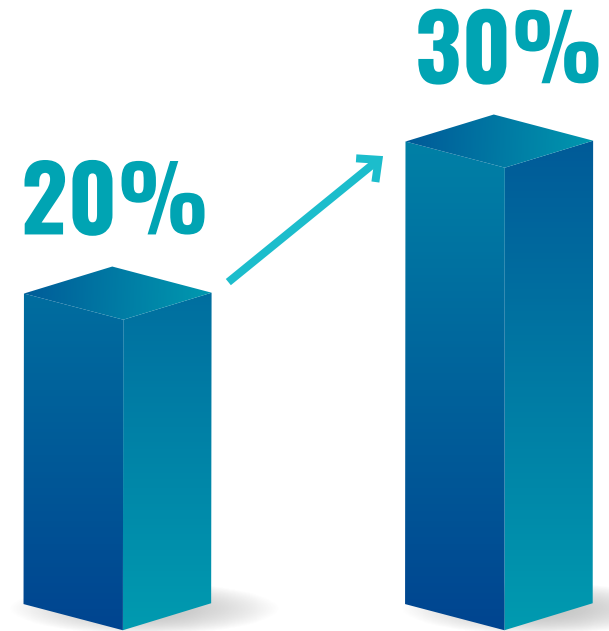


## Introduction

**From Alexa to self-driving cars, AI has already stretched the limits of what we thought possible. Where is the Golden Age of AI taking us next?**

As artificial intelligence (AI) and machine learning (ML) are rapidly coming of age, it's time to truly consider the possible. These disrupters are pioneering breakthrough applications every day, most recently delivering real-time results to significantly impact the future of work. Workplace safety is a prime opportunity for AI and ML disruption. On average, more than 5,000 workers die on the job every year, according to the Occupational Safety and Health Administration. Construction and manufacturing are hit the hardest, with U.S. Department of Labor (DoL) research indicating that construction workers are killed on the job five times more often than other laborers.

Additionally, across all industries, workplace slips, trips, and falls are the most common causes of disability to American workers. A total 20 to 30 percent of slip-and-fall accidents cause moderate to severe injuries, like head injuries and concussions, broken bones, and spinal cord injuries.



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*Source: U.S. Department of Labor*



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The total cost of work injuries per year is currently \$161.5 billion in the U.S, according to the National Safety Council. This total includes wage and productivity losses (\$50.7 billion), medical expenses (\$34.3 billion) and administrative expenses (\$52.0) billion. This figure also includes employers' uninsured costs of \$12.4 billion, including the value of time lost by workers other than those with disabling injuries who are directly or indirectly involved in injuries, and the cost of time required to investigate injuries, and injury report documentation. Additionally, there are qualitative costs, including employee morale, which is often negatively affected, as tragedies will have an irreversible impact on families, friends ,and coworkers. This, along with the negative media sentiment, can cause significant harm to a company's brand.

These high costs of workplace injuries/fatalities may no longer be keeping facility managers awake at night. And that's due to the growing workplace adoption of transformative innovation like Intelligent Hazard Detection, a brain-bot solution that uses cameras and AI to detect workplace hazards and take real-time action to significantly improve the safety and well-being of employees.

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employers' uninsured costs



Source: U.S. Department of Labor



And AI brings other benefits to the health and wellness of tomorrow's worker. "AI, along with wearables, can proactively monitor the psychological changes of the worker and can provide the required needed medical help in real time," added Yasim Kolathayil, HGS Digital Director, Data Engineering and Data Science. "This innovative approach will keep the workers healthier and will reduce on-the-job injury costs as well as healthcare costs."



More than 40% of deaths can be potentially reduced by enabling workforces with AI-based hazard detection tools.

**Venu Gooty**

VP, Digital Strategy & Transformation,  
HGS Digital





## Intelligent hazard detection solution, defined

Many on-the-job injuries are caused by slip-and-fall injuries that happen when debris, machine lubricant, fluids, or beverages are spilled on the workplace floor. Most companies use CCTV to monitor the floor and the employee traffic. Using image recognition and artificial intelligence, companies can proactively monitor and identify the spills .

Today's companies are increasingly deploying internet of things (IoT) technology to send real-time alerts to address accidents sooner—for example notifying a workplace's cleaning crew, so they will clean up the spill as soon as the spill occurred. GPS directions will help cleaning crew to the location of the occurrence immediately. Additionally, GPS also tracks the employees near the spill, and alerts are sent to these employees to avoid the spilled areas.



Many leading cloud companies such as Azure, Google Cloud, and Amazon Web Services (AWS) provide state-of-the-art image recognition technologies. These cloud technologies can be leveraged as the foundation of a smart Intelligent Hazard Detection (IHD) system. Yet, as advanced as these CCTV, cloud, and IoT technologies are—they alone can't save lives or reduce workplace accidents. As these disrupters are in early stages of maturation, the answer lies in a combination of manual monitoring and cloud-based monitoring to ensure that the system is optimized. At HGS Digital, the right brain-bot approach includes the support of our Security Operation Center (SOC), which will monitor your site remotely, training the AI cameras to determine what is false and what is positive, with the ultimate goal of turning your platform into a fully automated, intelligent hazard detection system. This unique solution, marrying the automated world with the real world, will create more opportunities in the workplace and enable you to concentrate on what matters most: the trust and safety of your employees.

Employees can support IHD with on-the-ground technology, including mobile apps for on-the-job hazard detection. Additionally, with image recognition, the IHD system can ensure employees are wearing the required safety equipment when in the workplace. Additional use cases include employee wearable devices in alignment with IHD to monitor psychological changes of the workers and provide real-time help. These innovative technologies can keep the employees healthier and reduce healthcare costs as well as reduce on-the-job injury claim costs.

## The value of intelligent hazard detection

Gartner has predicted that, by 2021, AI augmentation will generate \$2.9 trillion in business value and recover 6.2 billion hours of worker productivity. As one example, with IHD, construction companies can proactively assess the risk for projects by identifying how many employees are following the protocols such as wearing hard hats, gloves, and safety vests and goggles. Any time a particular project location crosses the risk threshold, alerts can be sent to safety supervisors and safety briefings are held to prevent accidents. Construction firms alone could boost productivity by as much as 50% through real-time analysis of data and this leads to millions of dollars in savings. These savings should offset the required investment needed to set up the IHD as ROI is easily achieved.

This brain-bot solution deployment will also open the door to more opportunity for humans, so that we can concentrate on what we do best: solve complex problems with smarter strategies and limitless solutions.

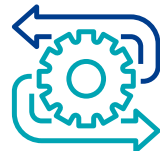
Ultimately, across all industries, a safer future of work is here, enabled by a combination of people, processes and technology. With the use of intelligent IHD systems and a Security Operations Center (SOC), today's smartest companies are reducing worker injuries and saving millions of dollars in on-the-job injury claims.

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## HGS Digital

With over 250 digital successes and stellar client satisfaction ratings, HGS Digital creates frictionless customer experiences that solve complex business problems and improve people's lives.

We work with leading brands across the world to improve their customer engagement, optimize their operations, reduce costs, and increase revenue. As a technology-agnostic consultant—with partners ranging from Amazon, Salesforce, Google, IBM, Microsoft, and more—we are well-equipped to help you select and successfully implement the right tools for your specific needs.



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