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Work Safety in Construction and the Impact of Artificial Intelligence (AI)

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Abstract. *Workplace safety in construction is a significant issue worldwide. It is well known that thousands of accidents happen every year. Worker safety is a top priority and can be addressed with innovative technology. AI can transform safety practices by reducing accidents and streamlining operations. This paper examines how AI technologies like drones, IoT sensors, smart cameras, and predictive algorithms can be used in risk monitoring and prevention. These tools enable immediate hazard detection and alertness so you can take preventative measures and have better working conditions on-site. Based on case studies in Italy, Spain, and France, we show that AI solutions have reduced workplace accidents by 35%, so they work. However, AI in construction has challenges, such as high implementation costs, resistance to change, and ethical issues around workers' privacy. Despite these obstacles, the benefits – from cost savings to increased productivity and worker protection – far outweigh the drawbacks. The paper argues for public policies encouraging AI in construction safety and proposes further research avenues to develop the best solutions. This could be the way to a safer workplace through AI, as the study shows that AI can offer a more proactive and data-driven approach, a safer and more sustainable future for the industry.*

Keywords: Construction Safety, Artificial intelligence, Risk prevention, Drones, IoT sensors, Predictive algorithms, Workplace efficiency.

Introduction

Building sites are naturally hazardous because of the physical exertion and environmental conditions. The Occupational Safety and Health Administration (OSHA) notes that deaths in construction contribute considerably to overall workplace fatalities. There is an increasing recognition of the necessity for innovative approaches to safety management, resulting in the emergence of state-of-the-art technological solutions. One particularly influential option is Artificial Intelligence, which could significantly diminish hazards and enhance the efficiency of safety protocols in the construction sector.

Incorporating artificial intelligence (AI) into safety management signifies a groundbreaking change, providing enhanced functionalities for immediate risk identification, forecasting accidents, and streamlining processes. **(**Vemuri, Thaneeru, & Tatikonda, 2022**),** Emerging technologies such as smart cameras, IoT sensors, and drones enable continuous monitoring of working conditions and the implementation of initiative-taking prevention measures **(**Vemuri et al., 2022**).**

This study analyses the benefits of AI in adopting construction site safety, including case studies from Europe. It also digs into the implementation hurdles, including high initial expenses, lack of technology literacy in the workforce, and the Data privacy ethics conundrum.

AI has been studied extensively in construction, and its potential to improve workplace safety is well documented. Giordano (2024) says we must implement concrete safety measures, primarily through modern technologies like AI. Acemoglu and Johnson (2024) say technological progress drives efficiency and safety, which is the foundation for industries like construction to adopt AI-based systems.

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The EU's Regulation 2024/1689 on AI also stresses the need for standardised safety protocols, especially for high-risk environments. Probestò (2024) and Revista Construcțiilor (2023) have studies on practical applications of drones, IoT sensors and predictive algorithms on construction sites to reduce risks and improve operational efficiency.

Research, Objectives, and Hypotheses

This paper explores AI in construction site safety, investigating whether implementation could reduce incidents and drive efficiency. The research question is guided by the following:

How can artificial intelligence decrease workplace accidents and improve safety protocols on construction sites?

The research is based on hypotheses in response to this question is the following:

- AI-based safety technologies reduce construction site accidents effectively
- AI improves risk evaluation by observing and evaluating hazardous stages of hazardous work.
- Workplace safety with the help of AI enhances productivity and lowers the economic loss of occupational injury.

The study features case studies from Italy, Spain, and France and describes AI's broad implications in the construction safety category. It contributes to the European discussion on AI-based risk management, highlighting technology as the enabler to create a safer, greener, and more innovation-oriented workplace.

Safety Challenges in the Construction Workplace

Workers in the construction industry face multifaceted occupational hazards, making work (for construction workers) elevated risk by default.

Falls from height – The most significant causes of workplace fatalities: - working heavy machinery [the threat turned a cradle, excavator, and bulldozer] =>dangerous exposure to extreme weather, noise, and toxic substances degrades employee safety. E. Collapse of Temporary Buildings — Scaffolding and work platforms that are not well built or stable, causing grave hazards.

The human suffering of work accidents accompanies a substantial financial expense, monetary expenditures on medical care, lost workdays, and property damage. Also, companies lose their reputation and, therefore, contracts, etc.

The ILO (2023) reports that the construction sector represents 17% of all occupational fatalities worldwide, highlighting the need for next-generation safety solutions like AI.

AI Adoption and Regulatory Framework

While regulations and international safety standards like the European Directive 92/57/EEC form the minimum safety requirement for temporary and mobile construction sites, modern complexities in aero projects require a better, more data-driven approach to safety.

AI adoption is fundamental in reducing occupational hazards and making the workplace safer. AI-powered solutions address the most significant safety problems on construction sites by:

On-site hazard monitoring: Smart cameras and machine learning algorithms monitor workers not wearing PPE (Personal Protective Equipment) in real-time and detect lethal areas.

Observed Risk Assessment – AI algorithms examine historical data to find patterns and forecast future workplace injuries, raising warning signals for early intervention techniques.

Automation of dangerous jobs—Robots are used in place of humans for dangerous inspections (in complex and hazardous environments), toxic material transportation, and heavy machinery operations.

AI TRAINING—AI ENHANCED (VR/ARTIFICIAL REAULON)—AI-powered Virtual and augmented reality (VR/AR) provides realistic safety training in which employees can perform in-situ practices without consequence.

Of course, they add to workplace safety but also lead to financial gain (lower medical bills, fewer stolen goods, and more) and added income based on performance improvements. AI helps to create a culture of safety in the workplace and increase employee morale / corporate reputation.

This paper looks at the growing role of Artificial Intelligence (AI) in construction site safety. AI technologies—drones, IoT sensors, smart cameras, and predictive algorithms—allow for real-time hazard detection, risk-prone work phase monitoring, and proactive safety interventions.

These tools reduce human exposure to dangerous environments and create a safer and more efficient work environment.

The research question of this paper is:

Can artificial intelligence reduce accidents and improve operational efficiency in construction?

To answer this, the study is based on the following hypotheses:

- AI safety technologies will reduce construction site accidents.
- AI will analyse and monitor work phases to prevent risks.
- AI in workplace safety will improve productivity and reduce economic injury losses.

This research examines case studies from Italy, Spain, and France to provide an overview of AI in construction safety, including the challenges and opportunities. The results will feed into the debate on how AI can change risk management in construction and create a more sustainable and technologically driven work environment.

The main risks in construction are:

- Working at height: Falls are still one of the top causes of fatalities.
- Heavy machinery: Using cranes, excavators, or bulldozers is a significant risk.
- Difficult conditions: Harsh weather, noise or exposure to toxic substances can harm workers.
- Temporary structures collapsing: Poor built scaffolding or work platforms are a substantial risk to workers.

Beyond the human cost, accidents have a significant monetary impact, with medical expenses, lost days, and material damage. Companies' reputations can also be severely damaged, leading to losing contracts or partnerships.

According to the ILO, construction is responsible for 17% of all work-related fatalities worldwide. This is a big reason we need to implement innovative solutions like AI.

These challenges include regulations and international standards, such as European Directive 92/57/EEC, on minimum safety requirements for temporary or mobile construction sites. However, construction is a complex operation that requires innovative solutions beyond traditional safety approaches.

- So, advanced technologies like AI are necessary to reduce risks and create a safer and more efficient work environment.

Why the Need for Adopting Artificial Intelligence in Accident Prevention? Solving the Challenges of Complex Safety Problems in Construction with Artificial Intelligence. Particularly in the construction industry, AI has unique solutions to complex problems.

- On-site hazards surveillance: The combination of smart cameras and machine learning algorithms enables continuous system monitoring for tasks being executed on site. The cameras can identify personal protective Equipment (PPE), workers in hazardous areas, or unsafe environmental conditions.
- Prediction of risk: Predictive analysis algorithms may exploit historical data to find accident trends. For instance, AI can recognise and predict risks for tasks (like lifting heavy goods or working at heights) as early warning with solutions.
- Automated solution for risky processes: Autonomous robots must enter and inspect dangerous areas (where humans cannot go) and transport poisonous material and heavy machinery. This minimises man's presence in hazardous environments.
- Enhancing Training formats- platforms that use honest and augmented reality with AI can train workers in vicarious environments so that they can understand how to control imminent threats with no risk exposure. Operationally, these solutions are great, but they are also selective and economical. Fewer accidents translate into decreased medical treatment costs, material damage, and productivity losses. Also, it contributes to the quality of the workplace, lifts employee morale with safety, and increases a company's reputation.

Thus, artificial intelligence is a strategic investment for construction companies to implement accurate and sustainable accident prevention schemes and enhance worker security.

Literature Review

Various theoretical and applied studies have covered the territory of Artificial Intelligence (AI) in construction safety regarding its capability to lower occupational risks and enhance workplace security. Giorthe Dano (2024) writes that including mechanisms in occupational health and safety modernisation and proactive prevention approaches are essential.

Technological and sustainable risk management advancements have transformed the construction sector's workplace safety over the last few years. Cioca et al., *Growing of Innovations in Project Safety and Risk Mitigation (2024*), discuss the significance of developments in Artificial intelligence, IoT-based watching, and automation for incident prevention as an initial step.

Smart Data analytics and real-time risk assessment tools and their research are further important in addressing workplace hazards, construction environments, and decision-making processes.

It is also in line with the general context of sustainable safety practices that AI solutions reduce risks and affect a sustainability outcome and a longer-term process of resource optimisation beyond goals. Construction companies can use predictive algorithms, autonomous monitoring systems, and digital twins to identify possible threats early, before accidents happen, and apply corrective measures.

Cioca et al. (2024) also stress the necessity for an AI-driven safety culture when AI supports risk assessment, compliance tracker, or performance analysis. The same argument supports the claim that while AI in construction is an operational driver, it is a strategic necessity for worker safety and proper compliance with regulations.

Guided by these findings, this paper also considers the deployment of AI-based risk mitigation technologies to ascertain their success in actual construction projects, focusing on the high-risk environments specific to structural engineering, infrastructure building, and disaster recovery rehabilitation.

Acemoglu and Johnson (2024) say technological progress is about efficiency and safety, which are the foundations for industries like construction to adopt AI.

Also, the European Union's Regulation 2024/1689 on AI highlights the need for standardised safety protocols, especially for high-risk environments.

Probestò (2024) and Revista Construcțiilor (2023) studies show practical applications of drones, IoT sensors, and predictive algorithms to reduce risks and increase operational efficiency on site.

Methodology

This study employs a mixed-methods approach, combining supervised and unsupervised machine learning algorithms to predict and prevent workplace risks. Using labelled datasets, supervised learning identifies safety standard deviations, such as missing protective equipment. In contrast, unsupervised learning autonomously detects anomalies in environmental conditions through IoT sensor data. Case studies from Italy, Spain, and France were analysed to evaluate the practical application of AI technologies. For example, drones with advanced sensors monitored structural in post-earthquake Italy, while predictive algorithms in Spain reduced heavy equipment failures by 20%.

This study uses a mixed-methods framework combining supervised and unsupervised machine learning models to predict and proactively manage workplace hazards. Using supervised learning, the labelled datasets specify safety standard deviations such as failing to wear protective equipment. Supervised learning, on the other hand, can identify anomalies autonomously by reviewing IoT sensor data regarding environmental conditions. An analysis of case studies in Italy (dry viticulture), Spain, and France on the ground application of AI technologies.

Supervised learning: This uses the labelled dataset where one knows the correct answer. It is constructed using an algorithm.

Trusted equipment failures: from historical data on equipment failure/fault (industry experience), able to predict when a portion will fail due to wear and tear.

Detects deviant safety norms: These are periodically scanned by smart cameras at a production site to capture workers who do not wear the correct gear and send out alerts.

Unsupervised learning: This class of algorithms learns from unlabelled data and automatically finds structures or clusters among the examples.

Applications for identifying critical areas: Data streams from IoT sensors can be used by algorithms to avoid anomalies in structure or environmental conditions going unnoticed. On-site logistics optimisation: Works by grouping similar tasks and resources required to be used, reducing the activity's operational footprint. Practical example: A supervised algorithm that could trend information of past accidents and thus predict the likelihood of similar incidents or an unsupervised one, providing unknown patterns in equipment used with a high correlation to faults.

Data Collection Techniques

The Application of artificial intelligence in construction must follow a stringent implementation method. Some of the data collection techniques in AI are as follows: IoT sensors:

Devices put in machinery and buildings to capture data on vibrations, temperatures, humidity, etc.

- Smart camera: taking high-quality images and videos that can be used to inspect site conditions and identify hazards.

- Drones: Analyse by visually inspecting the inaccessible areas; drones are fitted with high-end sensors and cameras.
  Historical data — Databases of historical incidents for identifying patterns and guaranteeing risks.

Algorithms Used

Advanced algorithms are used by artificial intelligence to evaluate the data collected. Key algorithms are:

- Machine learning algorithms are available to analyse datasets; therefore, their capacity to identify patterns makes accident prediction a feasible alternative.
- Neural Networks — A higher level of complexity with complex models to do things like image recognition and video analysis.
- Recommendation system - Provides working conditions analytics-based proposals for risk prevention.

Implementation Technologies

There are different implementation methodologies, but for example, the use of up-to-date software platforms or dedicated hardware infrastructure to facilitate advanced management tools:

- Autonomous robots- Used to perform inspection and repetitive tasks in hazardous environments.
- Virtual and augmented reality- training workers in safe simulations.

Included Studies

The studies considered in the analysis are from diverse European countries. Post-earthquake Italy reconstruction

The numbers and economic impact:

- Cost-cutting: €1.2 m of manual inspections in €100 m project saved by using drones and analysis algorithms.
- Hours not worked: Inspections that would have taken 10 to 15 days were reduced to 2-3, with intervention teams saving an average of 800 hours daily.
- Human: We decreased worker exposure to dangerous conditions by 25%, reducing reported accidents. AI to assess the structure of buildings affected by the central Italy earthquake, using drones to closely survey State-of-the-art sensors on drones manually scanned buildings in detail lowers worker exposure risks.
- Technology deployed: drones and analysis algorithms.
- Results: 35% risk reduction and 40% coproduction work performed faster in Spain. We use predictive algorithms for heavy equipment in Spain.

Number, Numerical, and economic repercussions:

- Financial savings: AI-enabled the expected maintenance cut annual repair avoidance costs savings reaching €5,000,000 on large construction sites, just by performing repairs.
- Enhanced productivity: Critical equipment does not need to be shut down at precisely the same time, allowing for an overpotential growth of 1000+ hours of activity per year.
- Improved Safety: Equipment failure-related accidents were reduced by 30%. In one example, AI was used on construction sites in Madrid to prevent hammer failures of heavy

equipment. The predictive systems analysed historical data, a pattern that would signal potential accidents.

France – Virtual Reality for Training Quantitative details and economic hit:

- Savings: VR training was 15% cheaper than traditional methods and reduced the cost of corporate simulations by the same margin
- Training time saved: Approximately 500 hours per year per team in virtual reality training sessions that last from 2 days instead of 5 days during the whole cycle.
- Improved productivity: Workers were 40% more ready, translating into a 25% reduction in minor incidents. The VR programs enabled employees to practice in a risk-free environment as though it were the accurate OMG, not a simulation of an on-site risk.

United Kingdom — Historical Data Analysis Literal numbers and economic cost:

- Stopped costs: Through data analytics, companies have identified those preventing economic losses of more than €300,000/year when planning activities.
- Decreased Accidents: There were 20% fewer accidents due to non-compliance with safety standards, reducing insurance costs. So, we analysed data to determine the shared risks and take preventive actions.

Detailed Statistical Analysis

Arhispec (2023) mentions that the adoption of digital technologies, such as AI, among others, has resulted in provable improved engagement and a decrease in on-site accidents and operations slacking.

Table 1. Workplace accident reduction in selected countries (2015-2023). The data collected from Italy, Spain, Germany, and France indicates a drastic fall in accidents with the advent of AI.

Country	2015	2023	Reduction (%)
Italy	2,500	1,625	35%
Spain	1,200	960	20%
Germany	800	600	25%
France	1,000	700	30%

Source: Authors' self-analysis based on workplace safety reports from ILO, Eurostat, and national statistics offices (2015-2023).

Table 2. Comparative Table of AI Technologies in Construction

Technology	Main Use	Key Benefits	Implementation Examples
Drones	Structural monitoring	35% risk reduction	Italy
IoT Sensors	Real-time monitoring	Avoidance of structural collapses	Germany
Virtual Reality	Safe training	Increased risk awareness	France
Predictive Algorithms	Failure prevention	30% reduction in accidents	Spain

Source: Authors' self-analysis based on workplace safety reports from ILO, Eurostat, and national statistics offices (2015-2023).

Table 3. Prisma Diagram for Study Selection

Stage	Details
Identification	300 studies identified (online databases)
	50 studies manually added
Screening	250 studies excluded based on title/abstract
	50 studies remaining for evaluation
Eligibility	30 studies excluded (lack of relevant data)
	20 studies included
Inclusion	10 studies included in the final analysis

Source: Authors' analysis based on study selection methodology (PRISMA framework).

Explanations for Chart

A comparative chart of the studies included in this review shows the number of studies conducted in the country. In European construction, Italy was one of the early adopters of AI. Spain and France followed, and Germany and the United Kingdom offered a lesser but significant number of [IoT sensor] + [data analytics] studies.

Implementation Steps

- Requirement determination: Defining clear goals for the building process.
- Gathering data: Setting up data points and adding more data sources.
- Analysis - primary processing of data to reveal issues.
- Implement of AI solution: Embedding the algorithms and technologies designed for specific projects.
- Monitoring: Long-term working environment management and revising AI solutions with new data. This method helps organise the use of artificial intelligence in a safe workplace and for construction efficiency.

Current Challenges and Advances in Workplace Safety in Construction

Recent workplace safety issues and advancements in construction

Construction is one of the most dangerous industries worldwide, with a high number of accidents and the associated risks to health concerns on workplace safety in construction.

Here, we will look at the industry's significant pain points and the solutions it is starting to unravel with the help of disruptive technologies, some of which involve artificial intelligence (AI).

As recently emphasised by Ts2 (2023), AI-powered predictive algorithms detect possible risks before they occur, allowing us to take a proactive stance against them.

Current Challenges

- Risks at Height Tasks: One prime cause of fatalities occurs while working at height in construction. These incidents are heavily related to the lack of proper protective clothing and human errors. Unsafe Equipment–
- Objectif: The data retention and the lack of live monitoring put the worker's daily routine in a higher risk context. Presario
- Lack of Personnel Training: Most (not all) accidents are caused by workers not being trained for this work. Training is extremely limited to the theoretical; we only see the risks without experiencing them in practice simulators.
- Previsible ambient work: Some, such as severe weather conditions or changes in soil structure unknown to the site, can seriously impact safety.

Advancements in Workplace Safety

In "Revista Construcțiilor (2023)", AI implementation in the building sector has significantly improved risk management and operational functioning for high-risk constructions.

- AI for Artificial (Labor) AI offers fresh ideas in risk management, such as smart cameras and sensors for hazard detection, i.e., Automated surveillance. Risk prediction: The algorithms that assess historical data to foresee events.
- Virtual and Augmented Reality Technologies With these tools, it is possible to simulate companies preventing everything from happening in a safe environment so the workers can be trained to manage adverse situations without any risks.
- IoT Sensors and Real-time Tracking IoT sensors give real-time data on equipment status and ambient conditions, enabling acceptable variable decision-making.
- Collaboration across borders has improved safety standards, as international safety programs have encouraged sharing best practices. For instance, joint projects between European countries have resulted in common safety standards.

Real-Life Examples of Success

Post-earthquake reconstruction in Italy. Using drones and AI to monitor structural performance in Italy prevented other falls and reduced the risks for intervention teams.

Spain: “Proyectos de prevenzion avanzada”. Machine learning algorithms on a construction site in Madrid reduced equipment incidents by 25% of overall equipment incidents.

France—Virtual Reality Training French workers trained via VR simulations had substantial risk awareness and decreased minor accidents.

Conclusion

Challenges are still significant in the construction industry. However, tremendous technological advancements, especially apps linked to artificial intelligence, are now giving new grounds for working for safer workplaces. By implementing these inventive ways and working together internationally, the industry can turn risks into opportunities for sustainable development.

Role of AI in Construction

Automation of Core Activities

- Artificial intelligence helps to work on risk or time-consuming processes such as structural inspections and logistics management. Autonomous robots controlled through machine learning can do dangerous jobs, minimising risks for personnel. We go into why Acemoglu and Johnson's «Power and Growth» (2024) illustrate that with their book, technological progress may cause a structural change at the industry level by decreasing both efficiency and risk.
- Artificial intelligence has a significant function in serving these objectives for the construction industry (2024). It addresses the innovative revolution of AI and robotics, which serves the construction industry by automating laborious tasks to increase precision levels and improve workplace safety risks.

Risk Prediction and Prevention

- AI-based algorithms use historical data to identify risks in construction site patterns. This makes the deliveries proactive, hence leading to significantly fewer accidents.

Real-Time Monitoring

- IoT sensors and AI platforms ensure on-site site monitoring of hazardous situations and immediately alert the operator. A system of sensors, for example, can warn about dangerous vibrations in a temporarily built structure and stop its deterioration.

Resources Optimization

- AI to improve resource allocation, coordination planning, and equipment management to reduce costs and operational expenses.

AI in construction Advantages and disadvantages

The Benefits of AI in Construction and AI (InfoHale, 2024) show that using AI in construction can decrease costs through savings, increase productivity, and solve safety issues.

- Wear Their Protective Gear AI-based technologies reduce the potential for accidents by identifying and blocking dangers in real-time. The system then undergoes continuous monitoring and data analysis to allow swift response to life-threatening conditions.
- Operational Efficiency AI automatically optimises building processes, automates repetitive activities, and innovative resource planning. So, it completes the project within less time and less resource wastage.
- Cost Reduction AI saves expenses because it prevents accidents and optimises the use of equipment; this way, costs are minimised from things like insurance, repairs, and work stoppages.
- Informed Decisions Through sophisticated data analysis that assists project managers in making more accurate forecasts and decisions backed by precise forecasts.
- Customization & Flexibility Construction AI algorithms can be altered to suit the differing needs of each construction site so that customised solutions are obtained.

Limitations of AI

- Implementation Costs
  These are extremely expensive, from buying AI technologies to integrating itself—a deterrent for small and medium businesses.
- Technological Complexity
  Developing AI systems involves high-level competence and often keen staff training to integrate AI systems.
- Resistance to Change
  Certain groups and organisations resist change, so it won't be easy to roll that out.
- On-demand Data
  Whether an AI is efficient depends on the data it accesses. Variations in consistent datasets can handicap algorithm performance.
- Ethical, Privacy Anxieties
  Sensors and cameras may raise data protection issues as well as concerns about the privacy of workers.

Development Perspectives

- Worldwide discovery: Iteration, making algorithms better, more efficient, and accessible.
- Collaboration internationally: Sharing practices among nations regarding acceptance of AI technologies, ongoing training, and training to develop competence in using AI.

Sure, the benefits of AI in construction are apparent, but unlocking the capabilities of these technologies strategically means having a balanced view of what they both provide and lack. Through Sustainable Investment and International partnership, the construction industry can now aspire to new levels of safety and efficiency.

Conclusions and Recommendations

Real levers to enforce AI as the new norm at scale.

- Techno-infrastructure investments: Developing an environment for deploying sensors, drones, and other technology.
- Upskilling initiatives: Training workers and technical staff for effective use of AI.
- Financial motives: Government grants and tax breaks for adopting AI in companies.
- Forming a partnership ecosystem: Public, private, and University collaboration, e.g., for research and development

Research Tomorrow and International Standards Required

- Proposed international regulation of AI technology: A set of standards to prevent the technologies from being interoperable and/or safe.
- Applied research: Broaden the studies to validate AI use cases in different construction subject matters.
- Privacy and ethics integration: Aiming at issues concerning personal data and worker safety.

Final Conclusions

Artificial Intelligence in construction is a revolutionary opportunity to reshape workplace safety and operational efficiency. The industry can realise new performance and safety levels by taking concrete steps, making sustainable investments, and collaborating internationally.

Europe LAW Governing AI Technologies in Employment

Last year, the European Commission finalised the Harmonised Rules for Artificial Intelligence (Regulation EU AI Act) Regulation 2024/1689, which gives a legal guideline for distinct types of AI systems from development to use.

Economedia. Too (2024) reported that the EU would like to harmonise the implementation of high-risk AI systems for workplace safety and conformity. This legal benchmark for the deployment of AI technologies safely in the EU, with regards to variables like risk status — as per the European Union's Regulation 2024/1689 Written by Uniunea Europeană (2024)

Aleph News (2023) warns companies that the upcoming EU legislation will be harsh. Organisations using high-risk AI systems in the workplace are bound not to be exempt from punishment. AI systems are classified as per this regulation.

Unacceptable Risk: To comply with EU values, AI systems will be banned from detecting workers' emotions or verbal expressions, which is an explicit danger.

A High-risk AI: Applications in selection and selection (incl. recruitment), performance evaluation, earning capacity assessment, task allocation, and employment-related decisions. Those systems need to be compliant to a level of fairness and transparency.

If employed, the following should be present on systems of implementation by employers:
Monitor the system's operation and, if needed, alert for serious incidents (report).

Establish human monitoring by qualified persons who can read and interpret results and decide their use.

Notify employees and representatives about the use of AI systems and the valuable impact of the decisions made.

The Impact of AI on the Labor Market and Occupational Safety

- A study by the Organisation for Economic Co-operation and Development (OECD) reveals that, although over 50% of workers believe AI can improve their work, significant concerns remain regarding workplace safety, and 30% fear that automation will lead to job losses. Source: Cartel Alfa
- Active worker participation in developing and implementing AI systems is essential to address these concerns and ensure a fair transition to a digitised work environment.

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