

SAFETY AND RISK MANAGEMENT: AI IN ACTION

AI has the potential to be a powerful productivity booster for employees across various roles and skill levels, particularly when used strategically and with proper validation. This handout provides you with a starting point on how to use AI strategically to make it work for you.

WHAT IS THE VALUE OF AI?

AI has demonstrably boosted employee productivity and performance, with studies showing significant improvements in various roles and tasks. On average, AI tools have been shown to **increase business user productivity by 50-60%**, particularly for tasks like customer support, business writing, and programming. Some studies even indicate **productivity gains of up to 40%** for highly skilled workers.

HOW TO GET STARTED

This guidance was created to be used with **Google Gemini (gemini.google.com)** as this AI chatbot is currently free and accessible to users. There are other chatbots that are free and accessible, but this one has proven to provide quality and developed responses time after time.

HOW AI CAN HELP YOU

How often do you need to strategically address complex problems, create solutions or juggle competing priorities that demand your immediate attention with limited time and resources?

ENHANCED EFFICIENCY

AI can automate routine tasks, optimize processes, and improve data analysis, leading to increased productivity and reduced costs.

IMPROVE DECISION-MAKING

AI can analyze data and identify patterns that help humans make more informed and accurate decisions.

SOLVE COMPLEX PROBLEMS

AI can be applied to address global challenges like energy efficiency and healthcare advancements.

SAFETY MEASURES

→ ANONYMITY

Refrain from using any personal information in the chatbot. If names are used in the description of your task, remove the names and replace them with [employee] or another placeholder.

→ ENVIRONMENTAL IMPACT

Be intentional of how you use AI to reduce the impact on the environment. Provide the full context, use less words and be concise.

→ BIAS

Be aware of potential biases in AI systems. AI platforms are continuously learning from existing resources, therefore they are not free from bias. Use AI responsibly and ensure that the solutions provided do not unfairly impact any individual or group.

THE ART OF THE PROMPT

Think of prompting as providing clear and concise instructions to your AI assistant. The more precisely you communicate your needs, the more targeted and valuable the AI's output. To get started, you will need to consider the following information:

ROLE

Who would be an expert in this situation? Describe the level of expertise to yield a higher quality outcome. If the context is risks of working at height, the expert would be an OSHA compliance officer.

GOAL

What are you trying to accomplish? Describe the task and be specific when you describe exactly what you need to figure out.

CONTEXT

Provide the “why” behind this task and any information that is important to your scenario as it will impact the response. The more background information you include, the more precise the output will be.

OUTPUT

What do you need for the final product? For example, if you are tasked with creating a presentation, you will want to ask for an outline to be created or a script for the presenter to reference.

ADVICE

Optional question: **“Please ask any clarifying questions needed.”** This allows the chatbot to clarify and request any further information to better understand the big picture of your scenario.

EXAMPLE

ROLE

You are an expert safety manager assisting a diverse group of business owners and safety professionals.

GOAL

Generate a list of the top five critical safety hazards with individual brief explanations.

CONTEXT

This is a pre-shift meeting where everyone has expertise in construction site safety, working on steel erection at a high-rise building project, with a focus on immediate actions to mitigate risks.

OUTPUT

Provide a concise and easy to understand bulleted list.

ADVICE

Please ask any clarifying questions needed.

SAMPLE PROMPTS

The following AI prompts have been drafted to provide you with a starting point and provide more ideas of how AI can be used to help you in your role.

SAFETY REGULATIONS

Role: You are an expert safety manager/compliance officer assisting a diverse group of business owners and safety professionals.

Goal: Assist the safety professional who needs to erect a three-story scaffold for a facade repair.

Context: The safety professional is under pressure to start quickly but is unsure about whether or not this scaffold is properly braced. This diverse group of individuals represent various industries, including construction, manufacturing, and office environments.

Output: Provide a checklist for inspection and list the corresponding OSHA standards (within the checklist) to make sure that the scaffold is properly braced.

INCIDENT INVESTIGATIONS

Role: You are a renowned workplace safety professional and incident investigator.

Goal: The goal is to determine what other information to gather, analyze the attached document.

Context: Attached is an incident report with accident details and witness reports.

Output: Create a comprehensive, high quality investigation plan that will instill knowledge and help the organization learn by helping me find the root cause(s) of the incident, to develop corrective actions. Go into as much detail as needed.

HAZARD RECOGNITION

Role: You are a workplace safety and compliance officer.

Goal: Determine the top five safety hazards that exist in the picture and the top three controls for each hazard.

Context: Use attached image/picture.

Output: Create a bulleted list of hazard, reasoning, and controls.

TRENDS ANALYSIS

Role: You are a renowned workplace safety/compliance officer and data scientist.

Goal: Scour the dataset, identify top five insights/trends for C-Suite executives.

Context: Use attached dataset; self-judge the most important trends.

Output: C-Suite level text and data visualizations.

EQUIPMENT MAINTENANCE

Role: You are an engineer and a mechanic.

Goal: Identify the piece of equipment, find and use service manual or other manual to provide relevant safety guidelines and best practices for operation, generate recommended routine maintenance schedule, and list any known recalls or alerts associated with this model.

Context: Use attached photo.

Output: Summarize safety guidelines and best practices, a list of recalls or alerts, and a Google Sheet for the maintenance schedule with step-by-step instructions for each task and a "Date Completed" column.

SAFETY TRAINING PRESENTATION

Role: You are an instructional designer focusing on developing relevant and engaging occupational safety and health presentations.

Goal: I need to train my employees on ladder safety as well as basic electrical hazards.

Context: I only have 15 minutes per topic and 45 minutes total for the training.

Output: Help me design an engaging safety training slide deck.

SAFETY TRAINING PROGRAM

Role: You are a safety resource manager and trainer.

Goal: Develop a safety training plan for certain employees.

Context: Employee level is [*new, veteran, etc.*], [*electrical, construction, etc.*] experience, job title is [*laborer, senior electrician, etc.*], completed [*OSHA 10, OSHA 30, etc.*] training in the past [*6 months*], [*event*] recent near miss involving improper stacking of materials.

Output: Develop five specific training modules/topics with training titles, brief descriptions, estimated completion time, and potential assessment methods.

SAMPLE PROMPTS FOR OTHER AI APPLICATIONS

The following AI prompts have been drafted to provide you with a starting point and provide more ideas of how AI can be used to help you in your role.

DIGITAL TWIN

Role: You are a Digital Twin (DT) system, acting as a Safety Monitoring Digital Twin (SMDT) of a modern manufacturing plant. Your core function is to execute a Virtual Simulation (VS) of 500 working days (approx. 10,000 work hours) of continuous operation.

Goal: Proactively identify, analyze, and report on the top three most frequent and/or severe potential workplace safety risks and incidents.

Context: See attached picture of workplace; report to a safety director; “Potential working-day time lost” must be calculated as two components: 1) Stoppage for the Day (Hours): Estimated hours the overall operation or a critical section would halt/be restricted immediately following the incident for investigation, clean-up, or remediation; 2) Injured Worker Days Away from Work (OSHA DAFW): The estimated total calendar days the injured employee is unable to work as a direct result of the injury, starting the day after the injury occurred (as defined by OSHA standards).

Output: Present the findings for the top 3 most common risks and incidents in a detailed table format (columns of “Risk/Incident Title”, “Description of Risk and Precursors”, “Probability Score (Out of 500 days)”, “Potential Time Lost”, Potential Injuries & Body Parts”, and “Recommended Mitigation Procedure”).

RE-CREATION OF INCIDENTS

Role: You are a Forensic AI for Workplace Safety. Your purpose is to analyze workplace incidents with objectivity, using provided data to reconstruct events and identify systemic failures.

Goal: Your task is to analyze a workplace incident and generate a comprehensive re-creation report.

Context: Incident Data: September 26, 2025, approximately 2:15 PM; Location: Temporary work platform, second story, south exterior; Victim Statement: “I was carrying a box of fittings to the other side of the platform. The plank just shifted under my foot, and I went down. It happened so fast”; Witness Statement (from ground level): “I heard a loud bang and a yell. When I looked up, I saw him on the ground and the wooden plank was hanging off the edge of the platform frame.”; Physical Evidence: Investigators found a 10-foot wooden plank dislodged from the scaffolding frame. The plank was not secured with cleats or wires. Sawdust and minor debris were noted on the platform supports where the plank was seated.

Output: Generate a structured, easy-to-read report containing the following three distinct sections: Plausible Incident Simulations: Create 2-3 detailed, narrative-style simulations of how the incident could have unfolded. These simulations must be grounded in the physical evidence and statements; Root Cause Analysis: Synthesize all data to identify the 3 most plausible root causes. List any contributing factors; Preventative Recommendations: Provide three specific, actionable recommendations to prevent a recurrence.

ERGONOMICS

Role: You are an ergonomist and human performance specialist.

Goal: Analyze the attached image and/or video, and/or the context to diagnose ergonomic risk factors contributing to a potential or actual incident.

Context: Use attached image and/or video.

Output: Risk Factor Identification: List the three primary ergonomic risk factors and their specific violation name; Forensic Analysis: A detailed report section explaining how the observed posture and stance increase Musculoskeletal Disorder (MSD) risk; Recommendations: Two specific, procedure-focused recommendations for updating company lifting protocols based only on this visual evidence.

DRONES

Role: You are acting as a dual-expert: a Senior Project Manager and a Renowned Workplace Safety Professional. You have extensive expertise in civil construction, residential land development, and OSHA compliance.

Goal: Analyze the uploaded drone video to perform a comprehensive site audit. Your goal is to identify the top five safety hazards and three primary construction management “punch-list” items (e.g., site cleanliness, final grading issues, or utility finishing) that need to be addressed before the project is turned over.

Context: This is a residential development site in the final “close-out” phase. The drone is surveying the site to provide a “bird’s-eye” view for the C-Suite and the field safety team. The crew is under pressure to finish, which may lead to shortcuts in safety or site restoration.

Output: Provide a structured report in a detailed table format with the following columns:

- Category (Safety Hazard or Construction Management)
- Observation (Description of what is seen in the video)
- Risk/Impact (Potential injury or project delay/cost)
- Recommended Action (Specific, actionable steps to mitigate the issue)

INSIGHTS AS A SERVICE

Explore the full service menu, click on the images to learn more.



SAFETY
PROGRAM
ANALYSIS



AI CONSULTING
AND WORKFLOW
OPTIMIZATION



EQUIPMENT
MAINTENANCE
MANAGEMENT



REGULATORY
COMPLIANCE
AUDITING



TRAINING
EFFECTIVENESS
EVALUATION



SAFETY LEADING
INDICATOR IMPACT
ANALYSIS

