Demystifying AI

What Leaders Need to Know about AI

Experience what we know about your industry and what it's like to be represented by Schwabe.

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AGENDA

- An Introduction to AI
- Personal Uses of AI
- How Ports Use AI
- AI Risks to Consider
- Risk Mitigation Strategies
- Questions and Discussion

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An Introduction to AI

WHAT IS AI

Artificial intelligence (AI) refers to computer systems capable of performing tasks that historically required human intelligence. These tasks include recognizing speech, making decisions, and identifying patterns.

- Bing Copilot

Not (yet) general intelligence.

MY AI USE THIS MORNING

- Unlocking my iPhone (facial recognition)
- Wordle Bot analysis of my score (machine learning)
- Read the news (recommender systems)
- Asking Google Maps for directions to Skamania Lodge (speech-to-text)
- Replying to emails with suggested replies (generative AI)
- Driving here in car equipped with lane detection (machine learning)

Demo - ChatGPT

Ways you can use common AI tools

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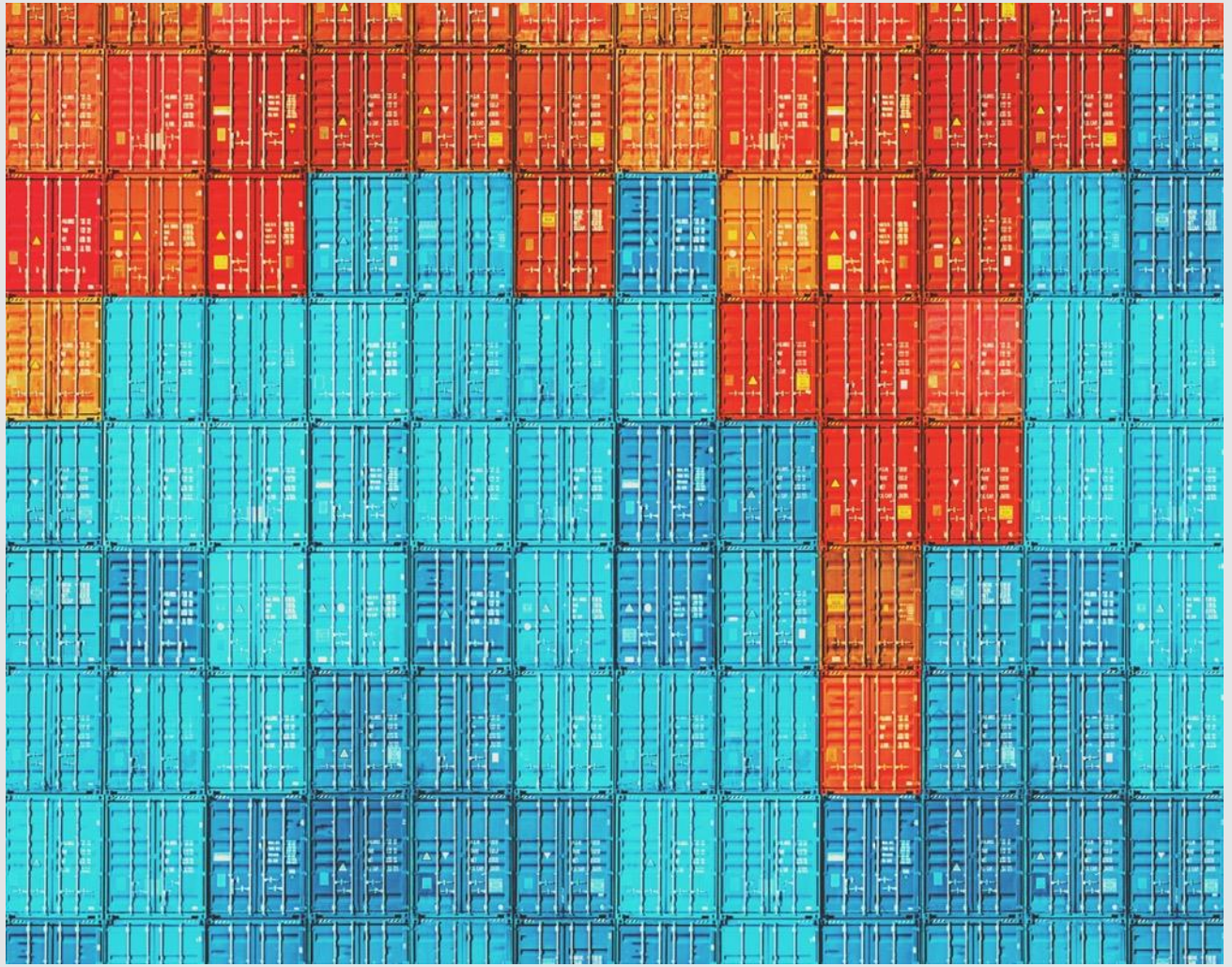
HOW DOES AI WORK

Pattern Recognition.

Based on data, data and more data . . .



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AI LIMITATIONS

- Lack of common-sense reasoning to new situations
- Bias
- Transparency/Interpretability

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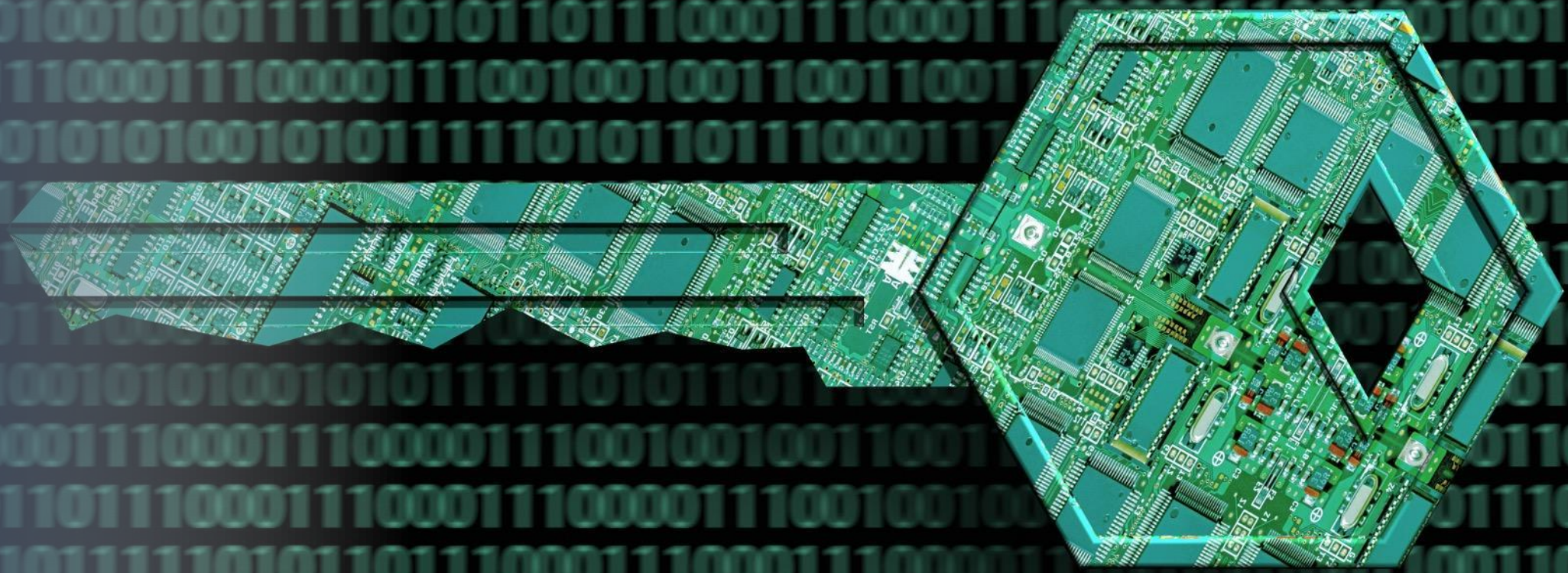
HOW PORTS USE AI



EFFICIENCY, SECURITY, SUSTAINABILITY

- Predictive Maintenance
- Berth Optimization
- Resource Allocation
- Route Optimization
- Forecasting
- Physical Security
- Threat Detection
- Weather Risk Management
- Managing Congestion
- Reducing Emissions
- Hiring
- Traffic Management
- Cybersecurity
- Safety

PORT OPERATIONS CHALLENGES - WATERSIDE

Waterside

- Optimizing ship stowage planning
- Reducing sea going vessel delays
- Predicting of inland vessel ETA
- Optimizing ship queuing
- Reducing vessel waiting time
- Predicting loading and unloading container demand
- Optimizing quay Crane (QC) assignment
- Detecting ship and ships traffic
- Reducing vessel turnaround time
- Predicting the risk range of ship's berthing velocity
- Lowering emissions in shipping
- Centralizing berth allocation

Landside

- Optimizing yard truck routing
- Optimizing of yard truck scheduling
- Predicting container relocation
- Optimizing scheduling of yard crane
- Generating optimal yard block allocation

PORT OPERATIONS CHALLENGES - WATERSIDE

Everywhere

- Recognizing assets like containers, truck or vessels
- Registering damage, rule violations, risks
- Predicting demand, disruptions, weather, threats
- Reducing emission and noise
- Predicting fuel and energy consumption

Hinterland

- Reducing congestion at terminals' gates
- Predicting unforeseen trucks delays
- Optimizing truck queuing at gate
- Complex scheduling of rail mounted gantry crane
- Reducing truck and train waiting time excess
- Integrating individual appointment systems
- Reducing truck and train turnaround time

INPUTS – DATA

- **Cargo and Vessel Tracking Data**: Real-time information on the movement and status of cargo shipments and vessels within the port, including arrival and departure times, container statuses, and berth utilization.
- **Port Traffic and Terminal Operations Data**: Data on the flow of vehicles, equipment, and personnel within the port, as well as activities at terminal facilities such as container yards, warehouses, and loading docks.
- **Supply Chain Visibility Data**: Information on the status and location of cargo throughout the supply chain, from origin to destination.
- **Weather and Environmental Data**: Weather forecasts, sea conditions, and environmental monitoring data can help ports anticipate and mitigate potential disruptions to operations, such as adverse weather events, tidal fluctuations, and environmental hazards.
- **Infrastructure and Equipment Performance Data**: Data on the condition, maintenance history, and performance metrics of port infrastructure (e.g., cranes, terminals, conveyors) and equipment (e.g., trucks, forklifts, cargo handling machinery).

INPUTS – DATA

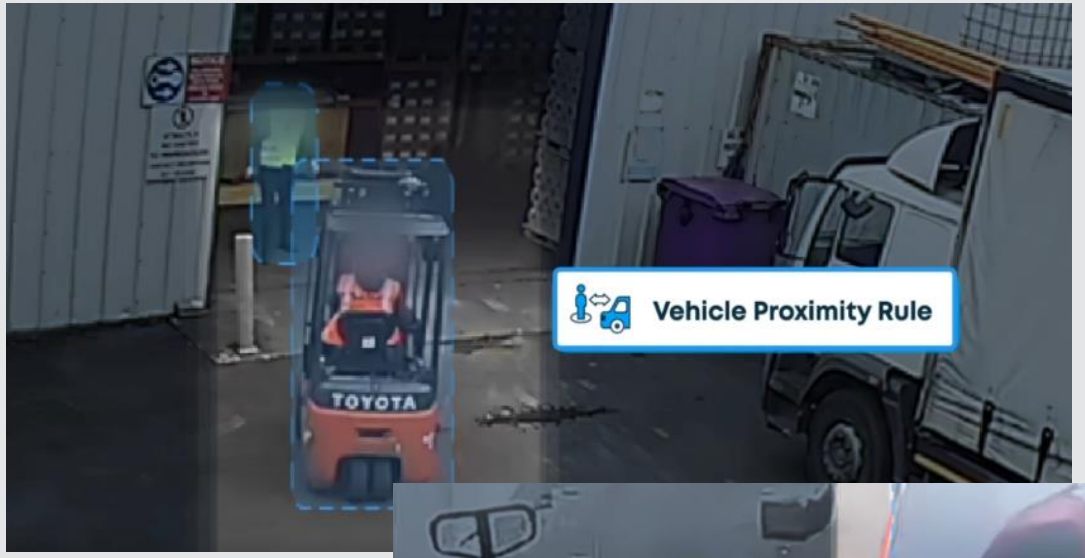
- Social Media Platforms
- News Outlets
- Drone Footage
- Satellite Imagery
- Weather Reports
- Financial Market Data
- Investor Relations Materials
- Public Health Data Sources
- Law Enforcement Data
- Insurance Data
- Personal Device Signals
- Sensor Data
- Employee Surveys
- Community Surveys
- Employee Records
- Medical Reports

SAFETY

Detect, Prevent, and Respond to Environmental, Health, and Safety Risks

Inputs:

- Realtime and historical CCT Video
- Port EHS Rules
- Incident Reports



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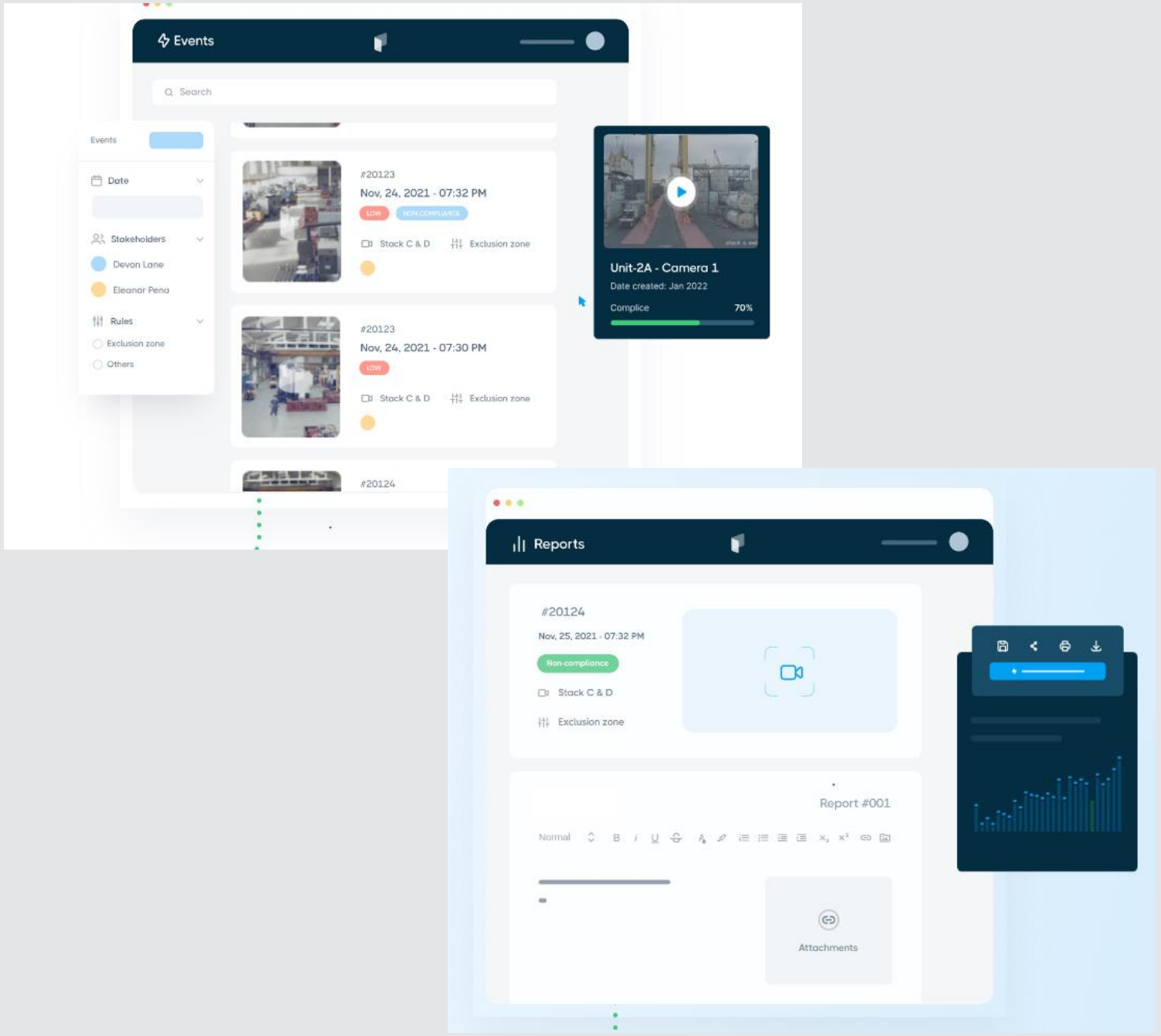
SAFETY

Detect, Prevent, and Respond to Environmental, Health, and Safety Risks

Outputs:

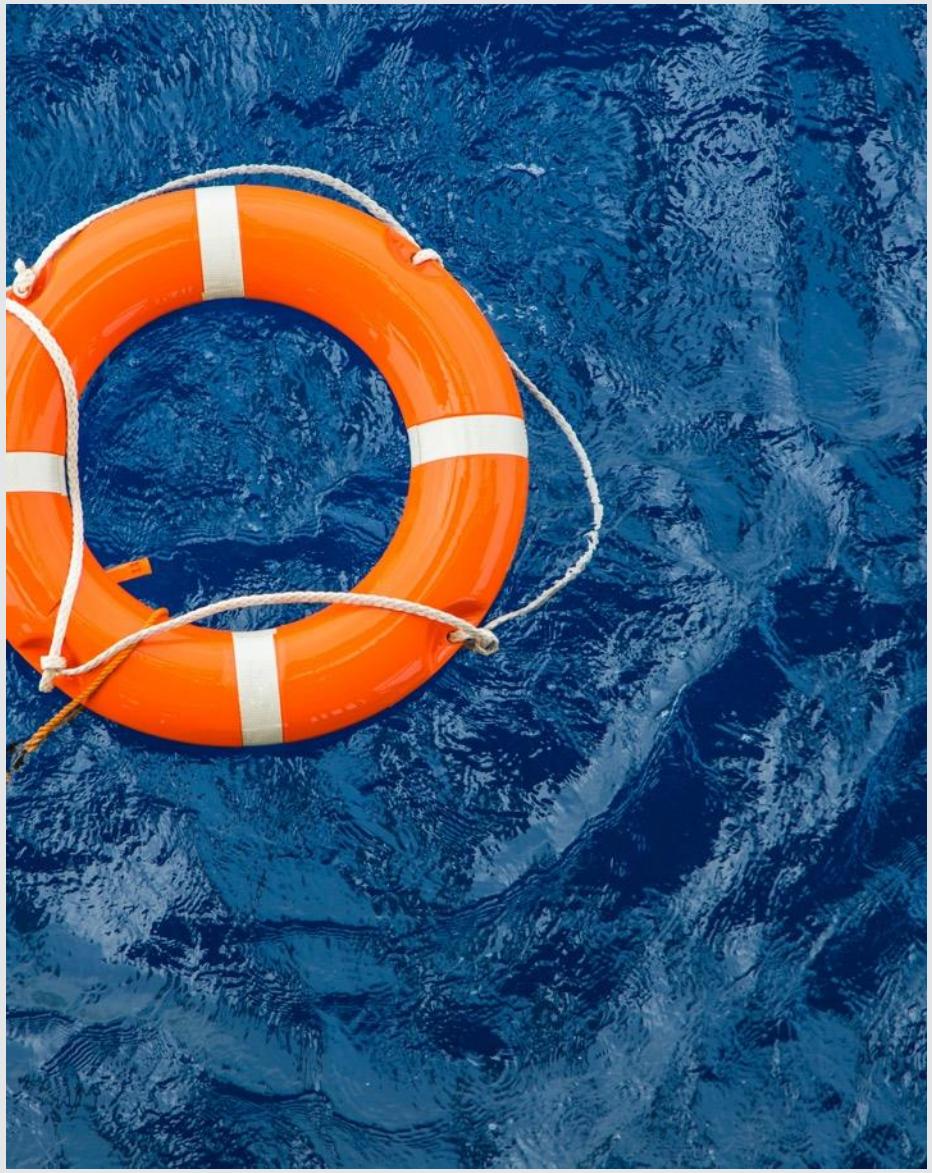
- Reports w Video of EHS rule violations
- Dashboards
- Metadata
- Recommendations



AI RISKS

INTELLECTUAL PROPERTY AND CONFIDENTIALITY RISK

- Data Use & Ownership
- Model Ownership
- Copyright Risk



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PRACTICAL ADVICE – READ THE TERMS OF USE!

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Effective: January 31, 2024 (previous version)

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PRIVACY RISKS

- Transparency
- Purpose Limitation
- Consent or other legal basis
- Secondary Uses
- Choice and Control
- Access Rights
- Automated Decision Making
- Risk Assessments
- Retention and Deletion
- Inferences
- Profiling

Candidate Information
Employee Surveys
Injury Reports
Resumes
Consumer Focus Groups Data
Consumer Surveys
Photos from Events
CCTV video
Biometrics
Facial Recognition
Law Enforcement Data
Background Checks
Social Media Data
Health Records
Training Data
Safety Data
Voice Recordings

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ETHICAL & PRACTICAL RISKS

- Bias and discrimination
- Accuracy of outputs
- Dignity & Self Determination
- Sustainability
- Safety
- Security
- Unintended Consequences

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RISK MITIGATION STRATEGIES

LEVERAGE WHAT YOU HAVE TO REDUCE AI RISKS

AI risks can often be prevented, identified, and remediate with standard operation policies and procedures

- Procurement policies and procedures
- IT policies and procedures
- Employment Agreements and Notices
- Incident Response Process and Policies
- Document and Records Retention and Deletion Policies
- IT Security – Access Limitation, Logs, Employee Termination
- Authorization / Escalation Policies
- Training and Employee Development Programs

NEW TOOLS - ADOPT AN AI POLICY

Sections to Include

- Employee education on the risks and benefits of AI
- Best practices for responsibly using AI
  - Protecting privacy and confidential information
  - Mitigating bias
  - Mitigating copyright risk
  - Guidelines for human review
- Pre-approved/disapproved applications and use cases
- Lightweight procedure for vetting new uses. Pause, think, decide.
- Where employees should go for help.

THANK YOU!
QUESTIONS?