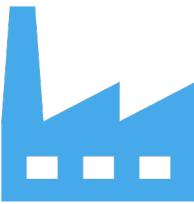




# IMPROVING WORKER SAFETY WITH COMPUTER VISION AND AI

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# AGENDA



## WORKPLACE SAFETY

Trends in Singapore and across the world

## COMPUTER VISION AND AI

Current state and challenges

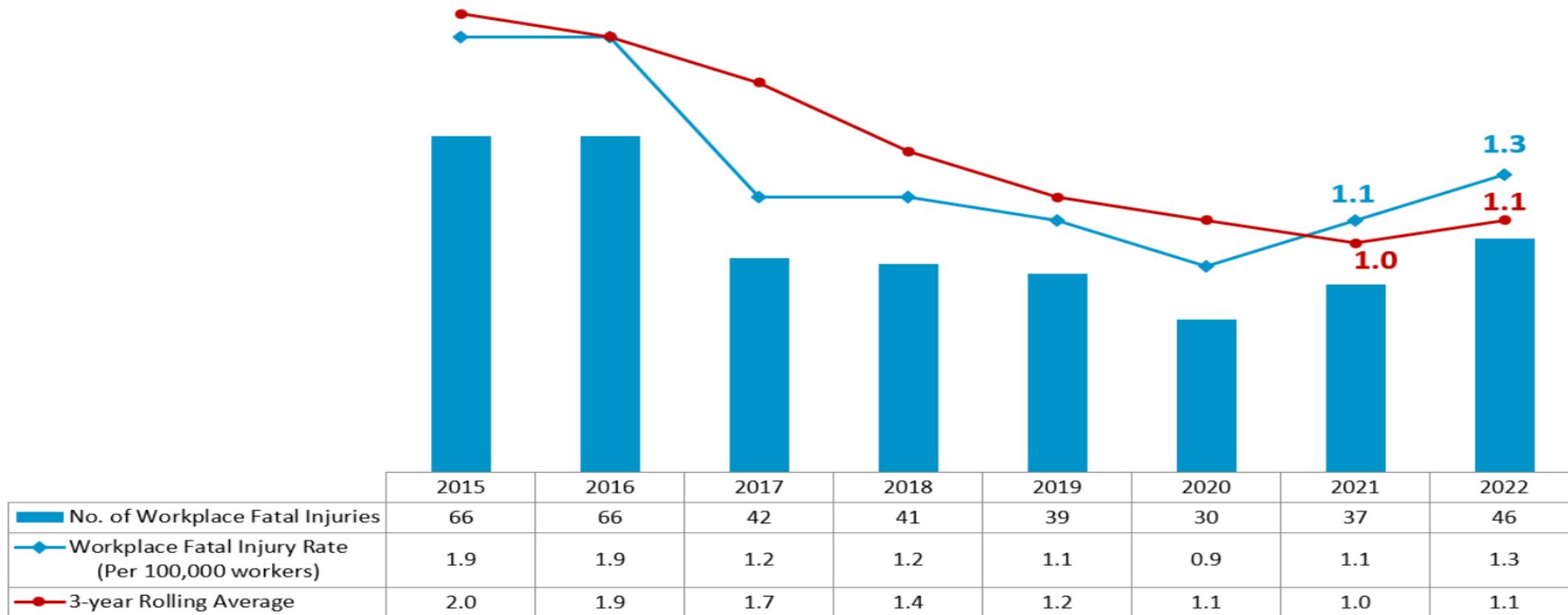
## A BETTER SOLUTION

Generative AI and people centric approach

# **WORKPLACE SAFETY**

**Trends in Singapore and across the world**

# WORKPLACE FATALITIES



WORKPLACE SAFETY & HEALTH REPORT, 2022

# HEIGHTENED SAFETY PERIOD

Industry	Number of Fatal and Major Injuries, 2022	Change in Monthly Average (Pre-HSP versus HSP)		
		Fatal	Major - Type A <i>(higher fatality risk)</i>	Major - Type B <i>(lower fatality risk)</i>
Overall	660	-2.0	+1.8	+4.4
Construction	171	-1.4	-1.0	-1.0
Manufacturing	129	+0.3	0.0	+0.9
Transportation & Storage	70	0.0	-0.3	+2.0
Administrative & Support Services	57	+0.5	+1.8	+1.9
Accommodation & Food Services	57	-0.3	+0.3	-1.5
Wholesale & Retail Trade	41	0.0	+0.3	+1.4

Legend: (improved during HSP) - 0 + (worsened during HSP)

# **GLOBALLY**

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**7,500 workers die on the job every day**

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**3 million lives are lost due to unsafe and unhealthy working conditions**

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**374 million people suffer injuries or health complications**

# WHY

Migrant worker groups urge  
Government for timeline to stop  
transporting workers in lorries



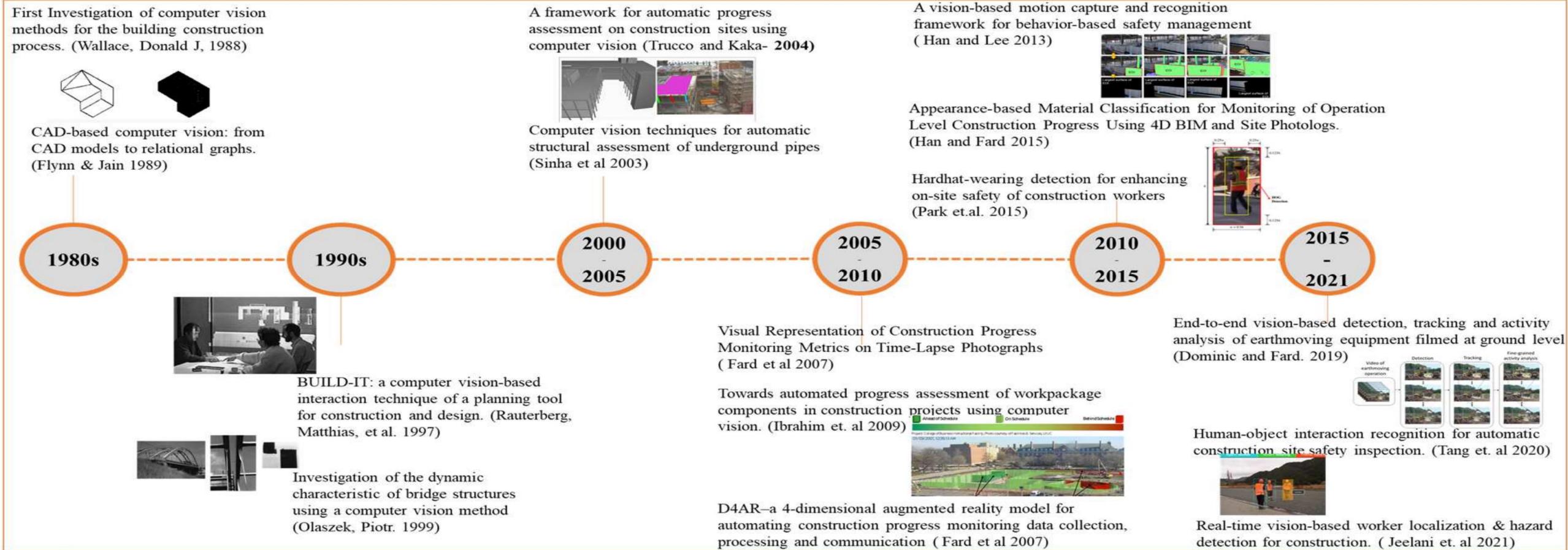
Business groups cite ‘complexities’ in  
letter to Govt after calls to ban lorries  
ferrying workers



# **COMPUTER VISION AND AI**

**Current state and challenges**

# A BRIEF HISTORY



# MARKET MAP

 **intenseye**

 **Protex AI**

 **GOARC**

 **viAct**

 **INVIGILO**

 **VOXEL**

 **Surveily®**



**Ailytics**

 **NEWMETRIX**

# MYTH OF EXPECTATIONS

## SAFETY PYRAMID

It is far better to be reporting and learning from Near Misses, Minor Incidents and Hazards, where there is little or no loss, than to be reporting actual serious losses.

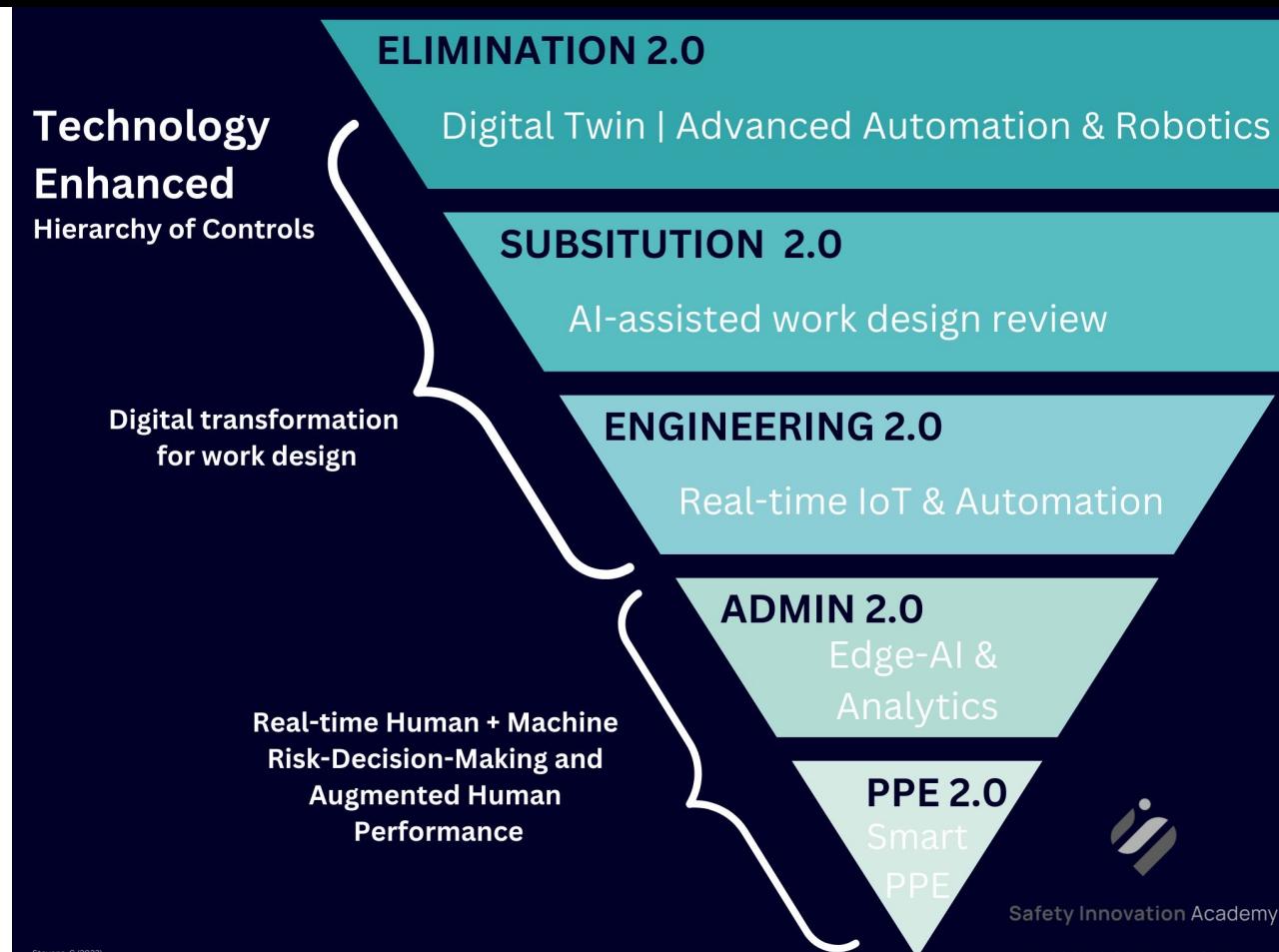


Prevent fatalities without dealing with unsafe acts

Highly accurate alerts without dealing with false positives

Single implementation without dealing with changes

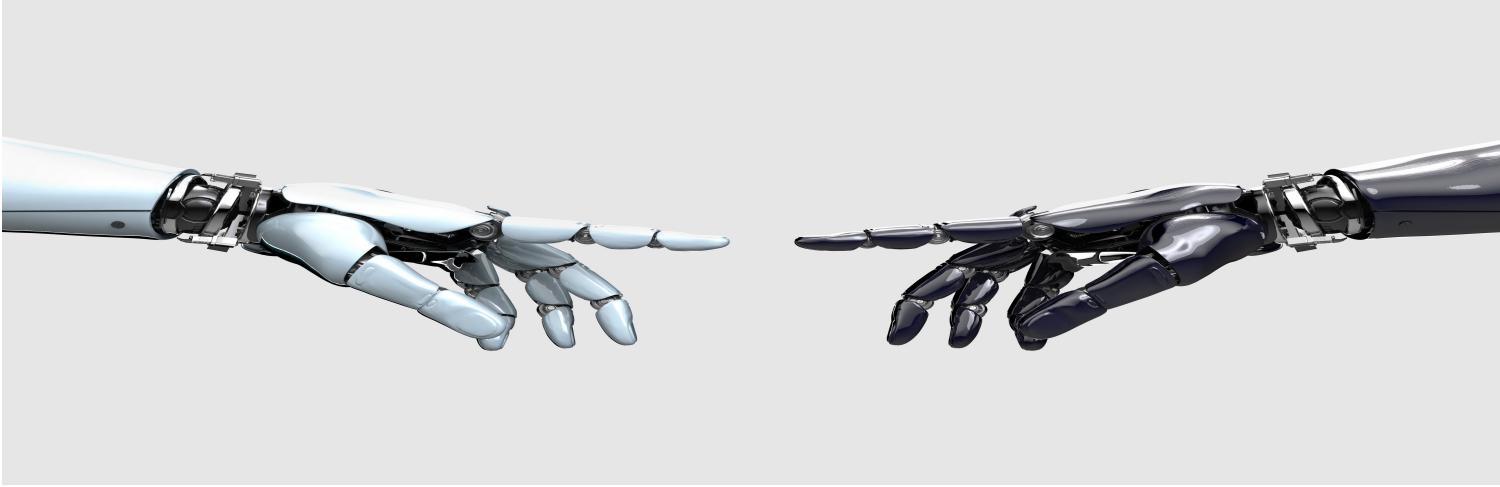
# HIERARCHY OF CONTROLS



Video analytics is just one of the controls

Need to integrate with existing processes and systems

Empower the humans and not replace them



# CHALLENGES

- Lack of customization
- Slow implementation
- High cost

# A BETTER SOLUTION

Generative AI and people centric approach

# PEOPLE CENTRIC APPROACH



**Worker Will**

Safer



**Supervisor Sally**

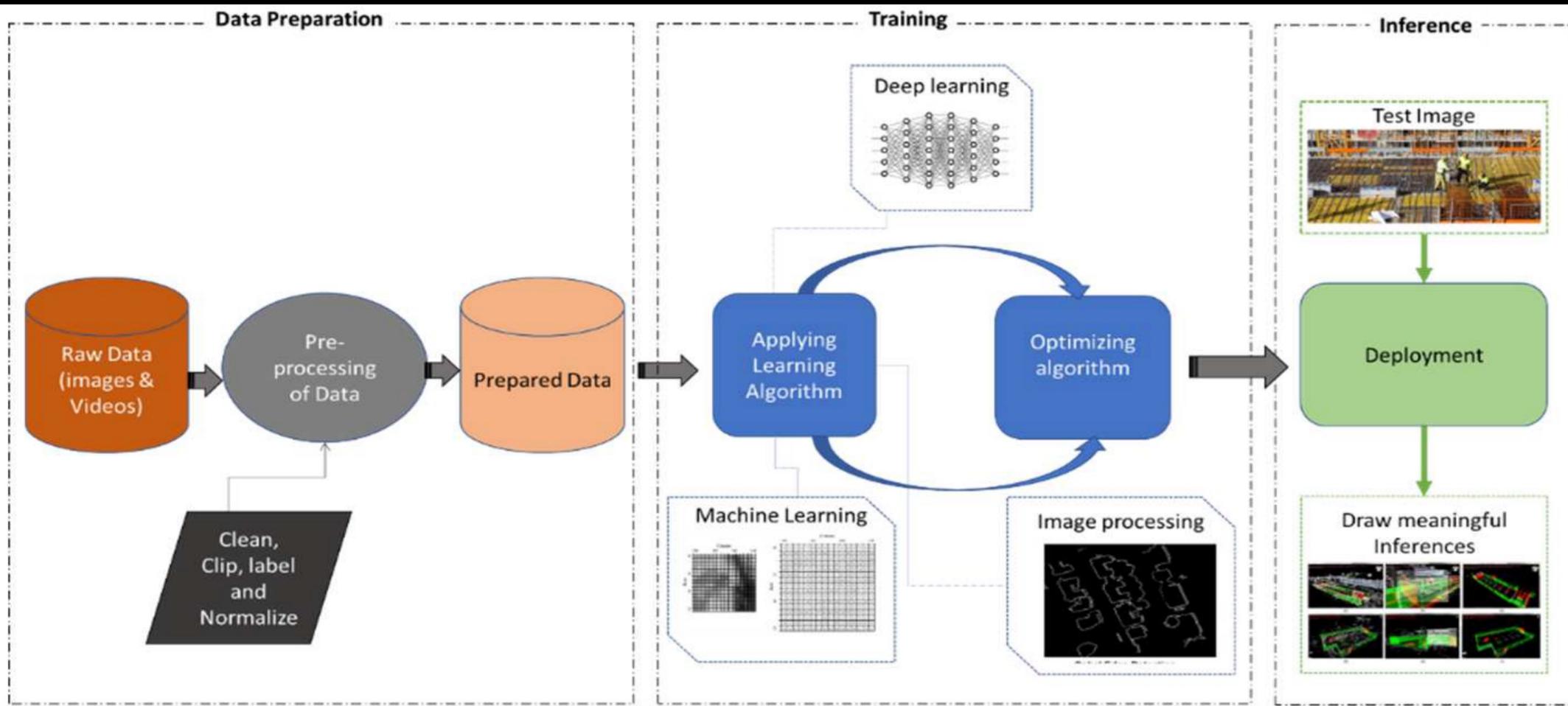
More productive



**Manager Mike**

More efficient

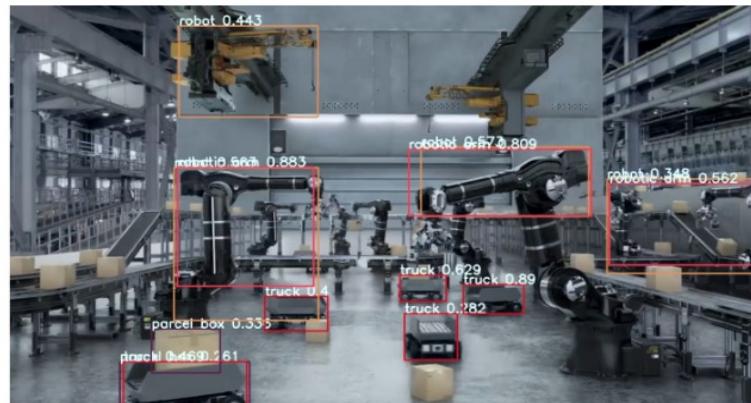
# TYPICAL MODEL TRAINING



# GENERATIVE AI



Camera/Video



Key frame extraction

→ Visual prompting

→ Zero shot object detection

→ Generate initial training data

Generative AI

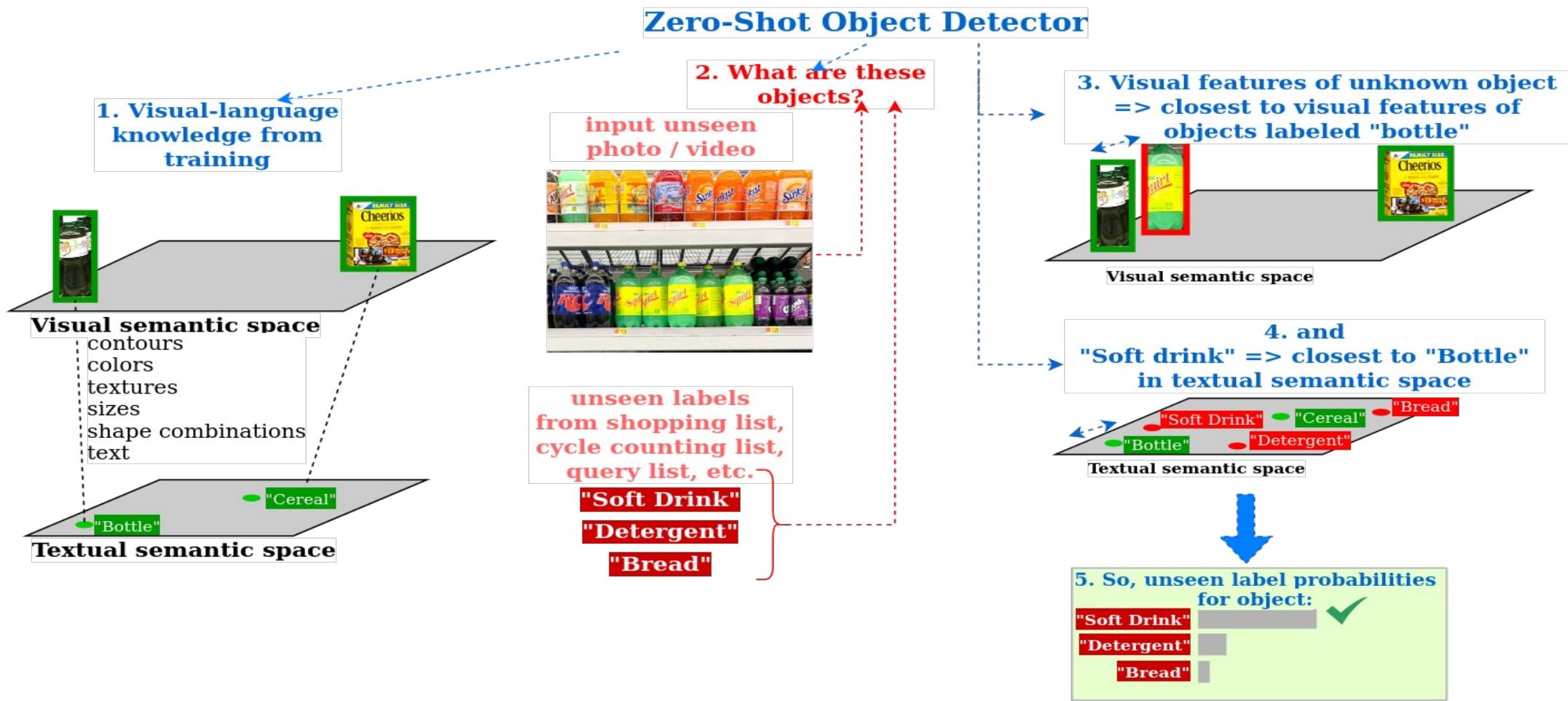


Fine-tune a new model

↑  
Augmentation

↑  
Generate initial  
training data

# ZERO SHOT OBJECT DETECTION





# Securade.ai

## BENEFITS

- **Easier Customization** (a unique model per camera feed)
- **Faster Implementation** (days instead of weeks)
- **Lower Cost (> 500% ROI)**

# THANK YOU



Questions



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