



PRESENCE

# Manufacturing & Training

*Hands-on industrial training — without the risk.*

## Real-world Challenge

Operating heavy machinery, like hydraulic presses, requires thorough training to prevent workplace accidents and ensure operational efficiency. However, traditional training environments are high-risk, expensive to set up, and limited in how often they can be used. Mistakes can cause injury or equipment damage, and practical sessions require constant supervision. This creates a bottleneck for both onboarding new workers and reskilling existing teams.

## Immersive Solution

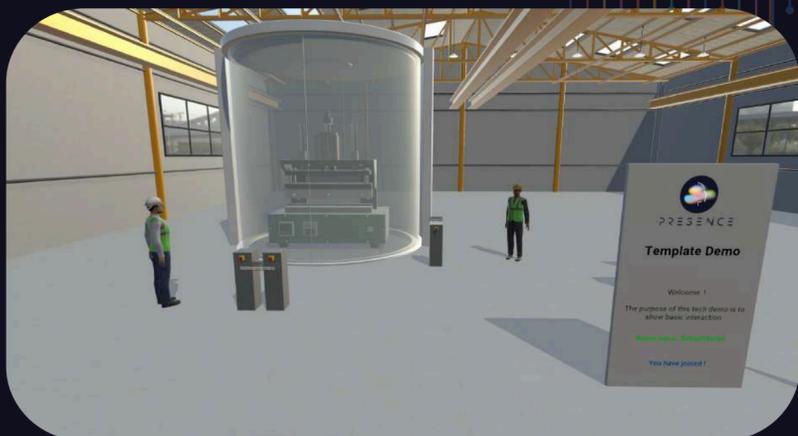
The PRESENCE platform offers a powerful XR-based training solution that simulates industrial environments in detail, without any physical risk. In this use case, three trainees enter a digital twin of a steel factory's manufacturing floor. With the guidance of a remotely holoported supervisor and an intelligent virtual assistant (IVA), they learn to operate a hydraulic press through a fully interactive XR scenario.

Each participant wears a VR headset and uses controllers or haptic gloves to interact with the virtual machine. They follow guided procedures for clamping steel sheets, closing safety doors, and activating the blanking mechanism. Mistakes are corrected in real-time through IVA feedback. Through haptics, users can feel temperature warnings, weight pressure,

and button resistance, ensuring that muscle memory and safety awareness develop just like they would in a physical training space.

## Key Technologies in Action

- **Holoportation:** Supervisors appear in the XR training session as lifelike avatars to provide real-time guidance and evaluation.
- **Haptics:** Trainees feel machine vibrations, heat cues, and resistance during operation, increasing situational awareness.
- **IVA Assistance:** An intelligent virtual assistant explains procedures, highlights errors, and reinforces safe practices.



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## Immersive Scenario

Inside the virtual factory, Alex prepares to insert a steel sheet into the hydraulic press. An IVA explains the importance of cooling time and safety zones. When Alex touches the hot steel too early, his haptic gloves buzz sharply - imitating the danger. Lisa, another trainee, practices engaging the safety door, experiencing the weight of the mechanism through her controller. Sarah presses two activation buttons simultaneously, and a realistic pulse of resistance confirms the machine is active.



Overseeing all of this is Tom, the real-world supervisor, who is holoported into the session from a remote office. He observes the team, gives verbal feedback, and records evaluation notes. By the end of the training, each trainee has completed the process safely, and the session can be repeated or adjusted to match different production.

## Why it Matters

PRESENCE removes the risks of hands-on training without compromising realism. New workers can train on high-stakes machinery without danger. Manufacturers reduce operational downtime and training costs. Skill acquisition improves through repetition and embodied learning. It's a smarter, safer way to prepare employees for real-world work.

## Applications & Domains

-  Manufacturing & Engineering
-  Workplace Safety
-  Onboarding & Reskilling
-  Technical Training

*"Train like it's real — because it feels real."*

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