WELDSIM

VR-AR Based Welding Simulator

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Designed for vocational training environments. It offers realistic training with a highly precise mask and torch motion tracking system.

With its reporting feature, users' welding results can be thoroughly analyzed, and the performed welding operations can be reviewed afterward.

Designed to support skill development in SMAW, MIG/MAG, TIG, and FCAW welding processes.

SANLAB
Welding Simulator

WELDSIM
VR AR Based Welding Simulator

Core Advantages

Cost-Efficient & Eco-Friendly:
Virtual training eliminates consumables, reduces energy usage, and minimizes waste, delivering significant cost savings while supporting sustainable, environmentally conscious education.

Accelerated Learning Efficiency:
Easy setup and no cleanup enable focused, uninterrupted practice—accelerating skill development and maximizing productive training time.

Data-Driven Learning:
Performance and progress are measured and improved through real-time data tracking.

Enhanced Safety Awareness:
Risk-free virtual environment helps build hazard recognition skills early in the training process.

Application Areas

Technical & Vocational Schools
Curriculum-aligned modules prepare students for certification and real-world application.

Industrial Training Centers
Scalable for high-volume training focused on technical skill development.

Technical Colleges & Universities
Enhances academic programs with immersive, measurable practice opportunities, bridging the gap between theory and real-world application.

Companies (Shipbuilding, Automotive, Aerospace)
Used in pre-employment and onboarding training to prepare new hires with essential welding skills and safety awareness through realistic simulations.

Software Details

- *4 different welding types: SMAW, MIG/MAG, TIG, and FCAW*
- *Over 14 workpieces with multiple welding positions*
- *Support for American (AWS) and European (ISO) welding standards*
- *Weld options: straight pass, curved weave, zigzag, triangular pattern*
- *Weld direction selection: left-to-right and right-to-left*
- *Compatible with both left and right-handed use*
- *Torch angle adjustment for push and pull techniques*
- *Virtual materials: stainless steel, steel, copper, and aluminum*
- *Real-time error detection and feedback*

- *Adjustable parameters: amperage, voltage, material thickness, and wire thickness*
- *Analysis of position, distance, speed, and angle parameters*
- *Analysis of penetration, porosity, and spatter*
- *Session recording, video playback with rewind/fast-forward, angle adjustment, and scoring system*
- *Student-based data storage and training history tracking*
- *Customizable scoring parameters with advanced management interface*
- *Touchscreen interaction without removing the welding mask*

Hardware Details

	SANLAB Welding Simulator
4 Real Torchs	4 real torchs for each different weld types: SMAW, MIG/MAG, TIG, and FCAW
Worktable	Flexible structure with 3 adjustable height levels, allowing welding on 14 different parts in various positions
Work Pieces	Over 14 workpieces with multiple welding positions
Welding Mask	AR/VR supported headset
Simulation Computer	Embedded simulation PC with minimum specifications of: GPU: NVIDIA RTX 3060 or higher | CPU: Intel i5 or higher | RAM: Minimum 16 GB
Welding Simulation Software	Easy parameter control, detailed analysis, built-in video recording, and touch interaction
Monitor	43 inch monitor for trainees and observers to watch the welding process
Touch Screen	13.3 inch IPS display with 1920x1080 high resolution

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SANLAB
Welding Simulator

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Product Specifications

	Dimensions (mm) (W) x (D) x (H)	Weight (kg)
Product Dimensions (product only)	2374 x 780 x 2000 mm	140 kg
Shipping Dimensions (including packaging)	230 x 230 x 130 mm	220 kg
Required Installation Space	2500 x 2000 x 2000 mm	

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