



V60 WELDING SIMULATOR

Weldmart Technology Sdn.Bhd

WELDMART



WHAT IS THE V60 WELDING SIMULATOR?

The V60 Welding Simulator is a VR-based simulation that comes with a Learning Management System (LMS) designed for TVET and industrial training. It integrates VR hardware, realistic welding tools, and AI-driven simulation software to help students and teachers to learn welding processes safely, cost-effectively, and interactively without real consumables or risks. It covers training, evaluation, teaching management (LMS), and certification simulation.



KEY BENEFITS



Cost Saving

- 60% cost saving on teaching aid such as tools, machining and training materials. One VR system replaces a full workshop setup.



Immersive & Engaging

- High-quality 3D visuals and interactive interfaces keep students focused and motivated throughout the training.



Improved Training Efficiency

- Improved training efficiency by offering immersive hands-on experience that boost knowledge retention and reduce training time.



Highly Efficiency

- Students can train anytime, anywhere and no class schedules or tool limitations. All actions are tracked for self-assessment and progress review.



Safe Training Environment

- Student can practice without risk of injury, accidents, or tool mishandling. Ideal software for beginners and young learners.



Repeatable Practice

- Students can retry exercises as many times as needed with no tool wear, no wasted materials, no extra cost.

WHY CHOOSE FITTER V60 WELDING SIMULATOR?

Reduce Training Costs

Traditional fitter training needs costly equipment and space, while VR simulation runs on a computer, cutting training costs significantly.

Improve Training Efficiency

VR training allows practice anytime, anywhere, with automatic progress tracking for self-assessment and improved efficiency.

Enhance Interest in Learning

VR training uses 3D graphics and interactivity to boost student interest, immersion, and learning outcomes.

KEY FEATURES



Support 5 Welding Processes

- Supports SMAW, GMAW, MAG, FCAW, GTAW and LASER welding in various position, joint types, and materials



Automated Evaluation & Scoring

- Instantly assesses weld quality and operation performance, with scoring and improvement suggestions



Realistic Physical Effects

- Simulates molten pool formation, temperature fields, stress distribution, and droplet transfer



3D Playback & Voice Interaction

- Replays welding sessions in 3D with voice-assisted control for better review and learning



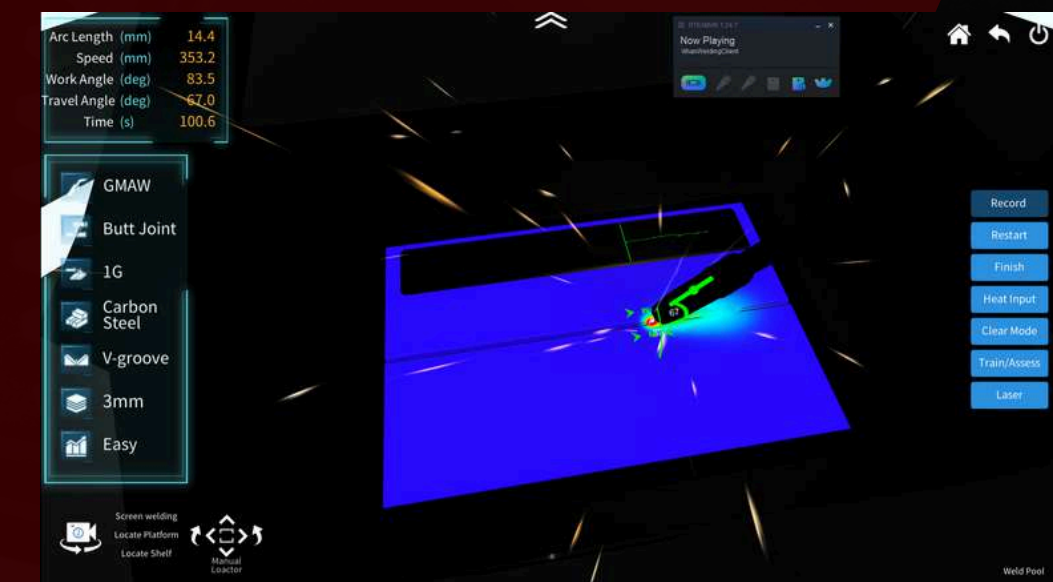
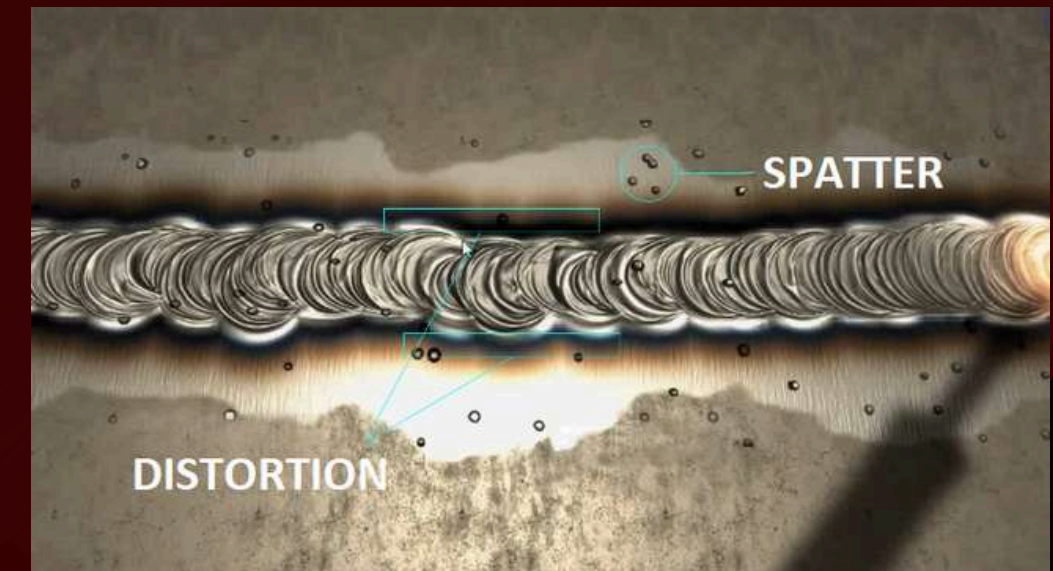
Smart Prompt System

- Provides real-time guidance on arc length, angles, speed, and technique during operations



Gamified Training Mode

- Includes level-based challenges and special training modes to keep students engaged



- The VISUALIZATION combines the theories of fluid mechanics and thermodynamics through the conservation of mass and Newton's second law

SIMULATION MODULES SYSTEM

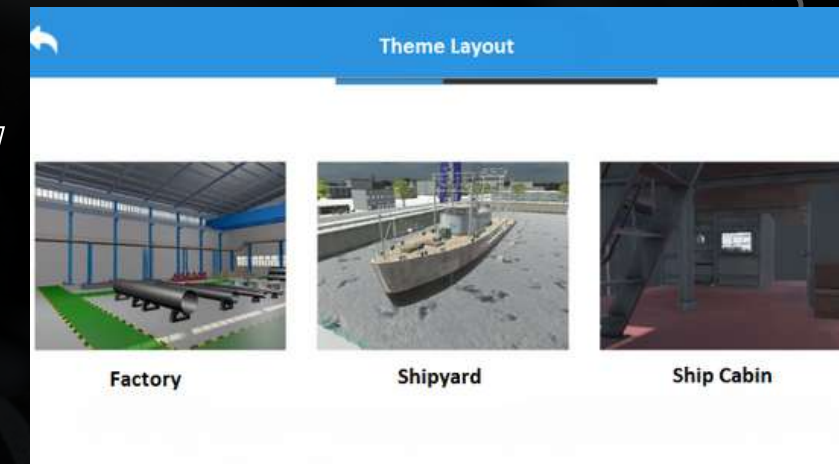
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**Virtual Welding
Education and Training
System**



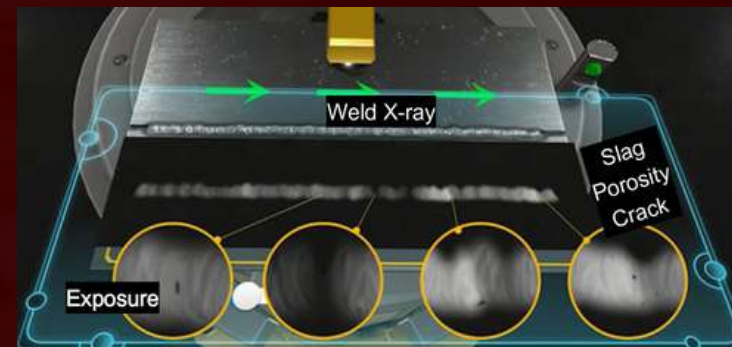
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**Virtual Welding Theme
Layout (Factory,
Shipyards, O&G, Cabin,
& etc)**



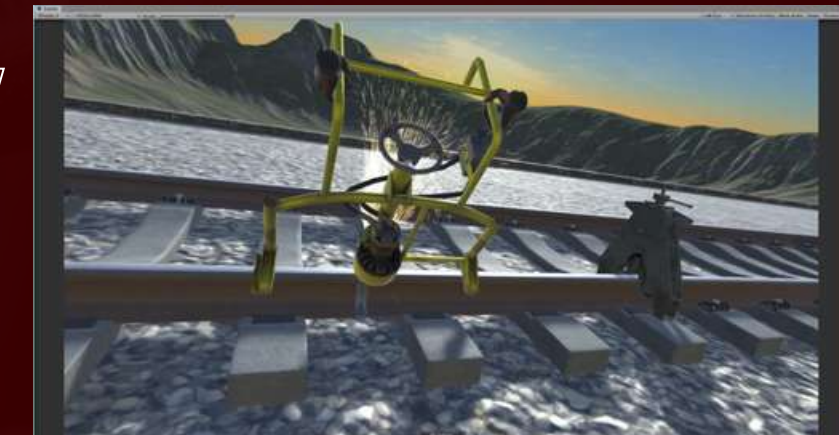
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**Virtual X-ray Weld
Inspection Training
System for Each Welds**



5

**Virtual Thermite Welding
Training System**



3

**Virtual Welding
Competition Certification
System based on
WorldSkills Standard**



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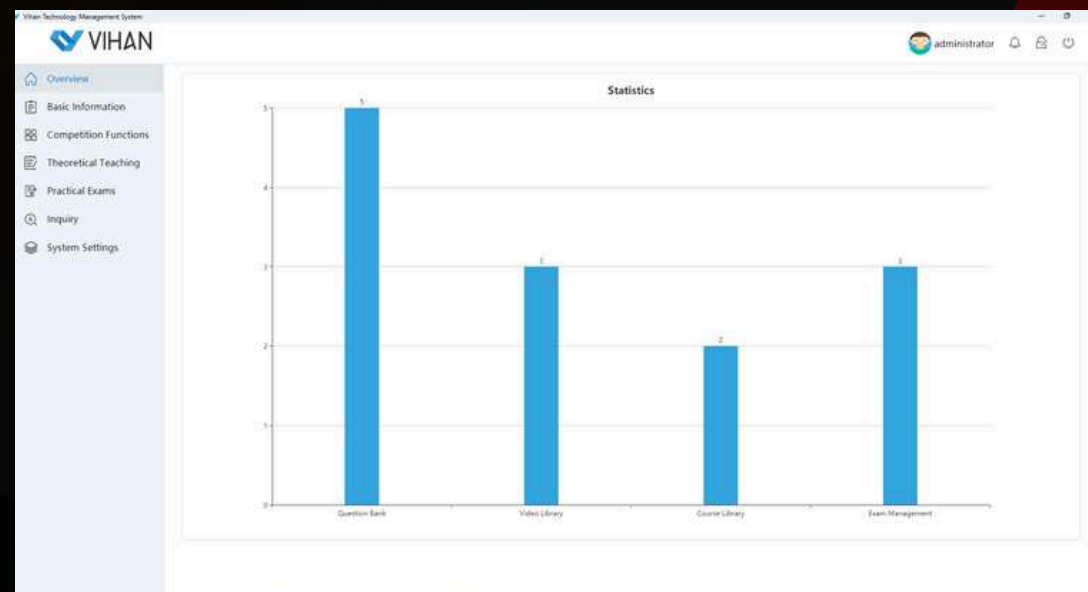
**Virtual Welding Robot
Teach Pendant System**



LEARNING MANAGEMENT SYSTEM (LMS)

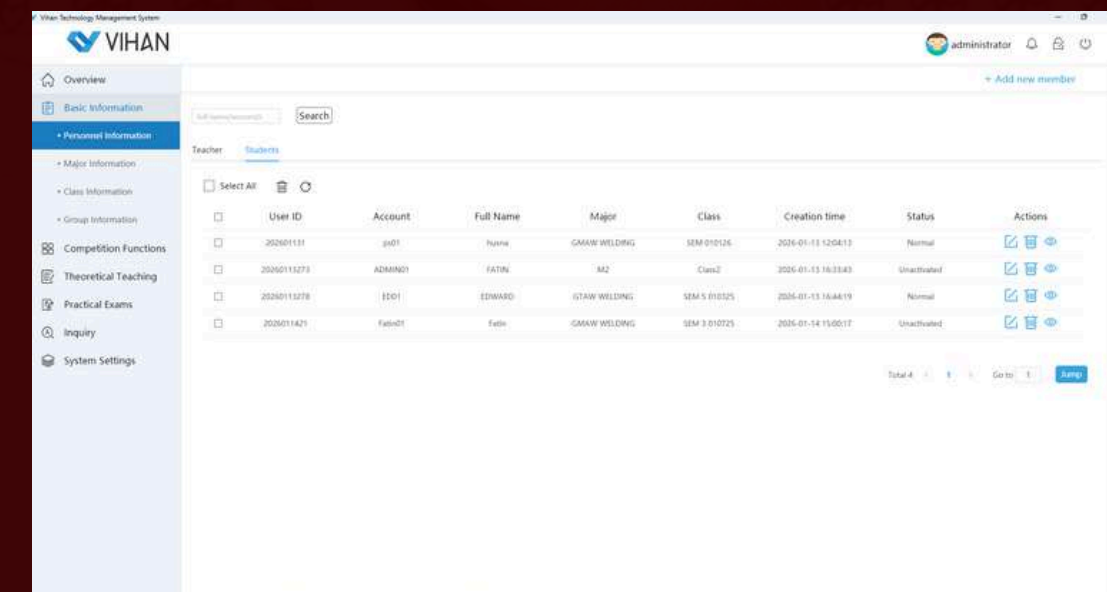
VIRTUAL WELDING TEACHER MANAGEMENT SYSTEM

Allows teachers to manage students, resources, and training tasks. It includes tools for uploading course materials, creating exams and assignments, tracking student progress, and organizing competitions. With real-time data and intelligent analysis, it supports personalized, efficient, and digital teaching.



VIRTUAL WELDING STUDENT MANAGEMENT SYSTEM

Let students access courseware, videos, exams, and live welding sessions via mobile or PC. It supports theoretical learning, video tutorials, and auto-scored exams, while teachers manage content and monitor progress through the backend.



VIHAN Technology Management System							
Administrator							
Add new member							
Search							
Teacher / Students							
Select All							
User ID	Account	Full Name	Major	Class	Creation time	Status	Actions
202401131	jsd01	John	GMAW WELDING	SEM 010126	2024-01-13 12:04:13	Normal	Edit Delete
20240113273	ADMIN01	KATIN	MA2	Class2	2024-01-13 16:33:43	Unactivated	Edit Delete
20240113278	ESD1	EDWARD	GTAW WELDING	SEM 5 010325	2024-01-13 16:44:19	Normal	Edit Delete
2024011421	Felid01	Felid	GMAW WELDING	SEM 3 010725	2024-01-14 15:00:17	Unactivated	Edit Delete

TECHNICAL PARAMETERS

HARDWARE – V60

V60 WELDING CONSOLE

- Includes VR headset, welding guns, trackers, console

VR HEADSET

- HTC VIVE Pro 2, HD display, <20ms delay

WELDMENT FIXTURES

- Plate, pipe, T-joint, butt-joint, pipe to T-joint

CONTROL SYSTEM

- i5 CPU, 8GB RAM, 256GB SSD, VR-ready GPU

RESOLUTION

- $\geq 2160 \times 1200$, single eye resolution $\geq 1080 \times 1200$



SOFTWARE

- Includes a real-time prompt function to guide users during welding operations for better technique.
- Built using the Unity3D professional engine to deliver high-fidelity, smooth, and realistic welding simulations.
- Simulates complex welding features including molten pool formation, temperature, stress, and fluid dynamics.
- Offers real-time evaluation on arc length, travel angle, speed, and weld quality.
- Features a smart scoring system with automatic grading and suggested improvement for welding defect.
- Includes gamified learning modes, X-ray flaw detection, and 3D playback of operations.
- Compatible with both PC and mobile devices for flexible teaching and learning.



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