REALWORLDPLAY: PHYSICAL AI IN-SITU REVISITED

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OTHER INFORMATION

CATEGORIZED AS

» **Computer**
» Hardware
» Software
» **Engineering**
» Engineering
» Robotics and Automation
» **Imaging**
» Remote Sensing
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» Physical Measurement
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RELATED CASES

2026-119-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

Achieving seamless robotic interaction with physical environments requires a sophisticated blend of sensory perception and logical reasoning. UC Berkeley researchers have developed "RealWorldPlay," a physical artificial intelligence system designed to enhance robotic action through a unified multimodal reasoning framework. The system integrates a visuo-tactile policy—combining sight and touch—with a large language model (LLM) that provides real-time verification feedback and strategic planning. By utilizing a "world model" to generate self-training data, the platform allows robots to autonomously set goals and learn from simulated scenarios, ensuring that their physical actions are both reasoned and verified before execution.

SUGGESTED USES

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Autonomous Manufacturing: Implementing robots that can sense material textures and verify assembly steps through multimodal reasoning.

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Complex Logistics and Warehousing: Enhancing robotic picking systems to handle delicate or irregularly shaped items using integrated visuo-tactile feedback.

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Assistive Healthcare Robotics: Developing service robots capable of safe, tactile-sensitive interactions with patients while following complex verbal instructions.

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Hazardous Environment Exploration: Utilizing self-training world models to prepare robots for unpredictable terrains or search-and-rescue missions.

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Advanced Research and Development: Providing a robust platform for studying the intersection of LLMs and physical embodiment in AI.

ADVANTAGES

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Unified Reasoning: Bridges the gap between high-level logical planning and low-level physical execution within a single multimodal framework.

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Autonomous Data Generation: The world model reduces the need for human-labeled datasets by generating high-fidelity self-training scenarios.

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Verification Feedback: The integrated LLM acts as a supervisor, checking robotic plans against logical constraints to prevent physical errors.

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Enhanced Perception: Combining visual and tactile data allows for superior object manipulation compared to systems relying on vision alone.

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Scalable Learning: The self-training goal-planning mechanism allows the system to continuously improve its performance without constant human intervention.

RELATED MATERIALS

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Pre-Training Auto-Regressive Robotic Models With 4D Representations
- Humanoid Locomotion As Next Token Prediction
- In-Context Learning Enables Robot Action Prediction in LLMs
- Llarva: Vision-Action Instruction Tuning Enhances Robot Learning

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