



PRAVDA REPLIKANTA

THE REPLICANT TRUTH
A NEWSPAPER ABOUT PHYSICAL ARTIFICIAL INTELLIGENCE

BREUKELEN (Netherlands)

Forecast · 2026-10-30 · CET

MORNING · 09:00
≈ **6.6°** Fog
Wind: NE 0.8 m/s · 0%

MIDDAY · 12:00
☀ **11.2°** Clear
Wind: NE 1.4 m/s · 0%

EVENING · 18:00
☁ **9.6°** Cloudy
Wind: NE 2.6 m/s · 0%

Daily: 4.9–13.5 °C
Precipitation probability: 0%

All we can do is learn to be human while the rain falls.

ISSUE № 2 · 2026-10-30

rev. 6 ·

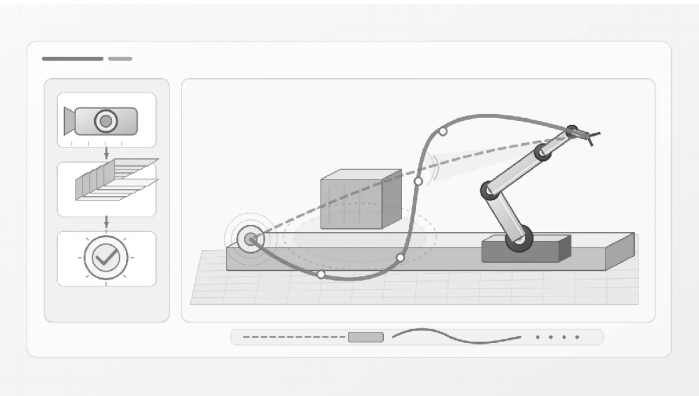
Weather source: Open-Meteo · Retrieved: 2026-10-30 14:42 CET

Pravda Replikanta — Engineering Data, October 30

Safer VLA execution, faster manipulation, demonstration capture and humanoid locomotion; Japan is adding insurance for operational robot risk.

News

VLA-Stem adds reflex-like safety control without retraining the base VLA



AI-generated illustration · AI-generated technical diagram: a local safety controller adjusts a VLA reference trajectory to avoid an obstacle. This illustrates a general principle, not a specific experimental result.

A VLA can understand a command and still drive an arm into an obstacle. VLA-Stem addresses that gap without retraining the base model. It turns predicted action chunks into motion references and adds a faster local controller that adjusts execution using robot-state and obstacle observations.

Across six constrained simulation settings, the researchers report 52.8% collision-free success, versus 23.7% for their strongest safety baseline. Physical tests also show fewer collisions. The architecture is promising for existing policies, but these limited experiments are not a general safety certification or independent replication.

Sources

VLA-Stem: A Lightweight Safety Mechanism for Vision-Language-Action Models via Reinforcement Learning · 2026-10-27

TOPS accelerates flow-based manipulation without changing the network

Making manipulation faster does not always require a bigger neural network. TOPS changes where flow-based action generation begins and how it progresses, tailoring the source distribution and transport schedule to the task. The network architecture remains unchanged.

On LIBERO-10, one TOPS step achieved 69.67% success against 53.44% for ten standard flow-matching steps, with roughly one-sixth of the inference time. In a real upper-drawer task, the authors report 80% versus 20%. Both latency and accuracy matter in closed-loop control, although the gains depend on the tested tasks and configurations.

Sources

TOPS: Reshaping Flow Source and Transport for Multi-Task Robot Manipulation · 2026-10-27

OpenJaws: open handheld demonstration gripper with stereo localization

Before a robot can learn a manipulation skill, someone must demonstrate it. OpenJaws records those examples without a robot: an operator moves a camera-equipped handheld gripper, and stereo vision reconstructs motion at metric scale. That avoids the absolute-scale ambiguity of monocular tracking.

The estimated parts cost is about \$400. A benchmark contains 90 demonstrations across nine tasks, while offline stereo COLMAP reports 2.9 mm position error. Two UR10

policies reached 90% success each, but on just ten trials per task. Some promised code, hardware and dataset links still read Coming Soon, so the practical completeness of the open release remains to be checked.

Sources

OpenJaws: An Open Hardware UMI Framework with Stereo Localization for Generalist Manipulation · 2026-10-27

RoboAuto searches robot programs by testing physical hypotheses

A robot may execute its program while failing the task: grasping empty space, for example, or proceeding before a drawer opens. RoboAuto puts physical verification into program search. It stores knowledge of objects and possible interactions, grounds it in the current scene and runs small experiments when competing explanations remain.

The authors report 89.1% success on short LIBERO-PRO tasks and 73.4% on LIBERO-PRO Long, against ASPIRE's 30.8%. Three real-robot tasks are also evaluated. The appeal is inspectable, repairable behavior, but it relies on perception, reusable skills and safeguards for running generated code.

Sources

RoboAuto: Autonomous Robot Program Search through Multi-Level Physical Understanding · 2026-10-27

REACH teaches Unitree G1 to switch between walking and crawling

Walking is of little use when a passage is lower than a humanoid's torso. REACH gives the Unitree G1 a way to switch from bipedal movement to crawling and back. A transition policy bridges different contact modes, while LiDAR-based planning anticipates overhead clearance.

Reported body-height commands span 1.27–0.50 m for walking and 0.50–0.20 m for crawling. The team demonstrates traversal on a physical G1. Inspection is an obvious possible application, but controlled demonstrations do not establish contact safety or long-term field reliability.

Sources

REACH: An RL-based Hierarchical Humanoid Crawling Framework for Adaptable Confined Space Traversal · 2026-10-27

HC2Robot predicts footholds for humanoid parkour

Seeing the next foothold is not enough; a humanoid must anticipate when its foot will land and whether the surface can support it. HC2Robot predicts contact timing, position and quality from onboard observations, approximating information available only during simulator training. A Hyper-Connection Transformer combines the temporal signals.

Mean traversal success reaches 97.60% across simulated stairs, gaps, platforms and slopes. It is a strong result for those test conditions, not proof of real-world parkour reliability. Unfamiliar surfaces and physical disturbances remain to be tested.

Sources

HC2Robot: Hyper-Connection Transformers with Predicted Foresight for Multi-Terrain Humanoid Parkour · 2026-10-27

LEAP hand reaches 95.2% of in-hand pose targets with fewer drops

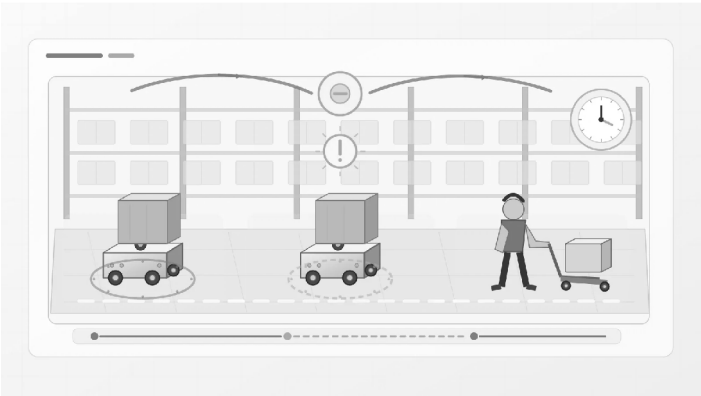
A dexterous hand can reach the right pose and still drop its object. Researchers using the LEAP hand treat that risk as a separate safety problem. They train in simulation without human demonstrations and add an adjustable residual filter to moderate risky actions.

Across 13.3 hours of real-hand testing, four objects and more than 4,800 unseen goals, the base policy reached 95.2% of target poses within 2 cm and 0.4 radians. The filter cut drops by 75% while retaining 91.5% target success. The trade-off is measurable, but performance on other hands and industrial duty cycles remains unproven.

Sources

Pushing Dexterity and Safety for In-Hand Object Pose Reaching That Works Remarkably Well · 2026-10-27

Japan: Tokio Marine launches coverage for AI-robot downtime



AI-generated illustration · AI-generated conceptual technical illustration: an autonomous transport robot stops and a worker takes over the material-handling task. This is not a depiction of an insurance product.

Robot deployment begins with productivity forecasts. It often ends with a harder question: who pays when the machine stops? Japan's Tokio Marine & Nichido has announced AI Robot Insurance for November 2026, covering specified downtime-related continuity costs alongside equipment damage and third-party liability.

The stated scope includes autonomous wheeled, quadruped and humanoid systems. Buyers should account for fallback staffing and downtime in total cost of ownership. Cyber-related losses are excluded in the published description, while premiums and precise terms require contract review. Insurance does not make robots safer, but it makes failure costs explicit.

Sources

AIロボット導入を支援する「AIロボット保険」の提供開始 · 2026-10-26

Analysis

From demonstrations to reliable execution

Recent research increasingly separates task intent from local correction, intermediate verification and management of physical risk.

Deployments should measure collisions, object drops, inference latency, data collection cost and downtime exposure alongside benchmark success.

Sources

- VLA-Stem: A Lightweight Safety Mechanism for Vision-Language-Action Models via Reinforcement Learning · 2026-10-27
- TOPS: Reshaping Flow Source and Transport for Multi-Task Robot Manipulation · 2026-10-27
- OpenJaws: An Open Hardware UMI Framework with Stereo Localization for Generalist Manipulation · 2026-10-27
- RoboAuto: Autonomous Robot Program Search through Multi-Level Physical Understanding · 2026-10-27
- REACH: An RL-based Hierarchical Humanoid Crawling Framework for Adaptable Confined Space Traversal · 2026-10-27
- HC2Robot: Hyper-Connection Transformers with Predicted Foresight for Multi-Terrain Humanoid Parkour · 2026-10-27

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Issue glossary

Terms and definitions from the editorial dataset.

- 01 **VLA**
Vision-Language-Action model: maps visual observations and language instructions to robot actions.
- 02 **Action chunk**
A short sequence of future motor commands predicted in one policy invocation.
- 03 **Flow matching**
A generative learning method that transforms a source distribution into action trajectories.
- 04 **UMI**
Universal Manipulation Interface: a handheld interface for collecting demonstrations without a robot.
- 05 **SLAM**
Simultaneous Localization and Mapping: estimating pose while building an environment map.
- 06 **Affordance**
An object property describing which interactions are physically possible.
- 07 **Proprioception**
Internal robot state sensing, including joint positions and velocities.
- 08 **Sim-to-real**
Transferring a controller learned in simulation to physical hardware.
- 09 **TCO**
Total Cost of Ownership: acquisition, operations, maintenance and downtime costs.

Sources

- VLA-Stem: A Lightweight Safety Mechanism for Vision-Language-Action Models via Reinforcement Learning · 2026-10-27
- TOPS: Reshaping Flow Source and Transport for Multi-Task Robot Manipulation · 2026-10-27
- OpenJaws: An Open Hardware UMI Framework with Stereo Localization for Generalist Manipulation · 2026-10-27
- RoboAuto: Autonomous Robot Program Search through Multi-Level Physical Understanding · 2026-10-27

REACH: An RL-based Hierarchical Humanoid Crawling Framework for Adaptable Confined Space Traversal · 2026-10-27

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