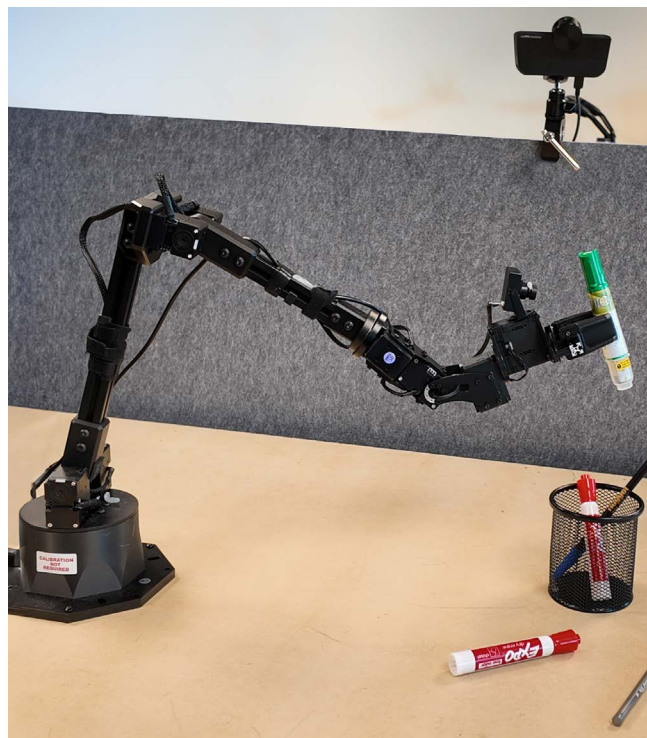




GR00T for Humanoid Robots on Modalix MLSoC

SiMa.ai Value Proposition

- Deploy humanoid vision-language-action models simply and with no cloud dependency.
- Enable natural instruction-following and adaptive behavior, accelerating autonomous system development.
- Deliver real-time perceptive, reasoning, and motion control on a single SoC, lowering TCO and simplifying architecture.
- Extend runtime with smaller batteries and lower total system cost through industry-leading TOPS/Watt.



Robots Need More Than Perception

They need reasoning-based actions to realize the futuristic imaginings of science fiction



SiMa.ai Modalix Enables Real-Time Physical AI for Autonomous Robotics

Autonomous robotics is evolving from scripted automation into language-guided, adaptive physical intelligence. By deploying the full GR00T stack on Modalix, SiMa.ai enables robots to perceive, reason, and act in real time—entirely on-device and within embedded power constraints.

- On-device language-to-action execution converts natural instructions into robotic motion without cloud latency.
- Deterministic perception --> reasoning --> action loops enable reliable, dynamic, real-world operation.
- Integrated multimodal AI and control orchestration simplify system architecture and compute requirements.
- Lower power operation with high task performance extends battery life and supports compact thermal designs.
- On-device deployment ensures security, privacy, and operation in disconnected or safety-critical environments.

Real-Time Physical AI for Autonomous Robotics

Deterministic Perception → Reasoning → Action/Feedback (on a single SoC)

Technical Details

Full GR00T 1.6 stack on Modalix SoM with optimized INT8 vision-language and diffusion transformers.

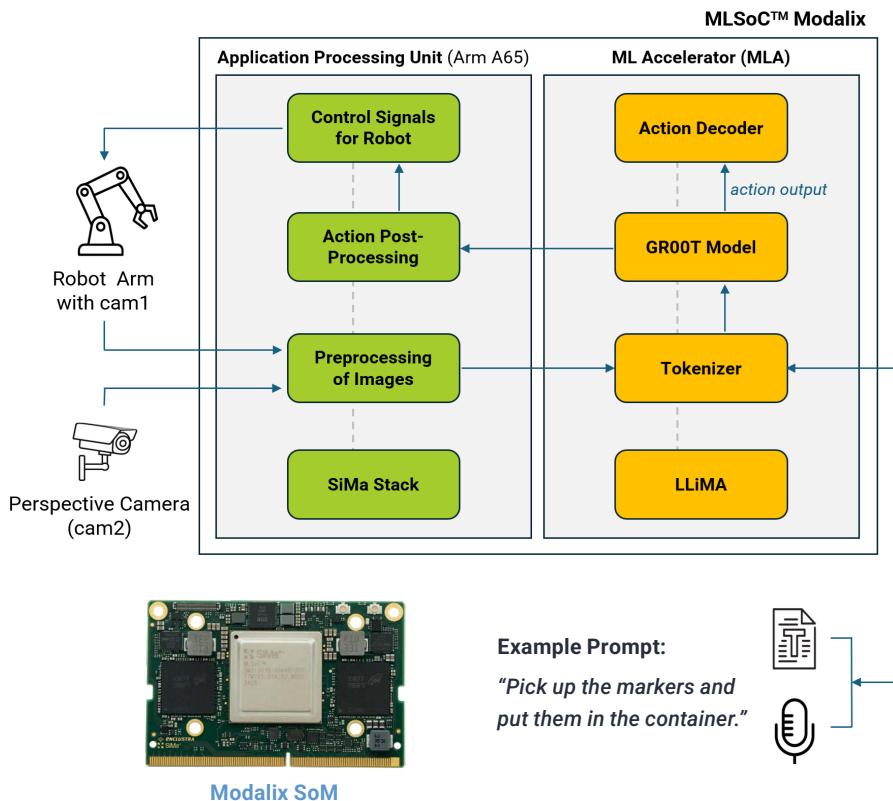
Translates natural language commands into coordinated robotic actions in real time on a single SoC.

ZeroMQ-based inter-process messaging enables efficient coordination between AI inference and control layers.

Deterministic, low-latency execution supports closed-loop: **perception** → **reasoning** → **action/feedback**.

Delivers high task performance within a low embedded power envelope of 10W.

Fully on-device deployment eliminates cloud latency and bandwidth dependency.



Hardware

Our Silicon



Modalix

Our Boards



SoM



SoM Dev



PCIe HHHL

Software



Hugging Face huggingface.co/simai

Model Zoo simai.ai/model-browser/



About SiMa.ai

SiMa.ai is a leader in Physical AI, delivering a purpose-built, software-centric platform that brings best-in-class performance, power efficiency, and ease of use to Physical AI applications. Focused on scaling Physical AI across robotics, automotive, industrial automation, aerospace & defense, smart vision, and healthcare, SiMa.ai is led by seasoned technologists and backed by top-tier investors. Headquartered in San Jose, California. Learn more at www.simai.ai.

