Agentic Robotics

Hugo Ponte · Austin Robotics · October 28, 2026

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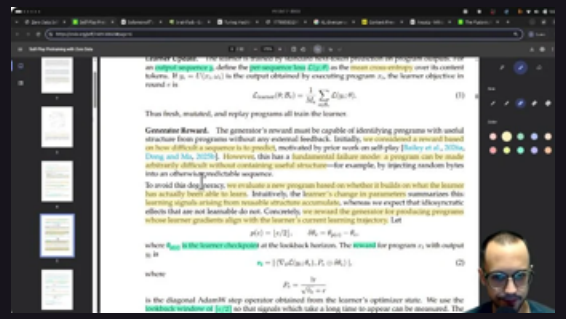
My Name Is Hugo

Me Llamo Hugo

Je M’appelle Hugo

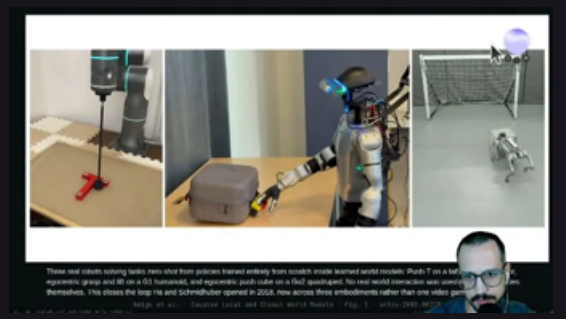
YouTube Streamer

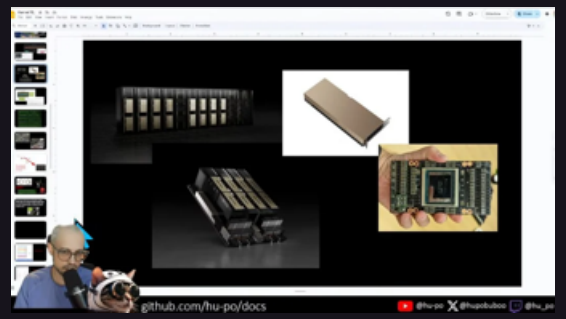
youtube.com/@hu-po

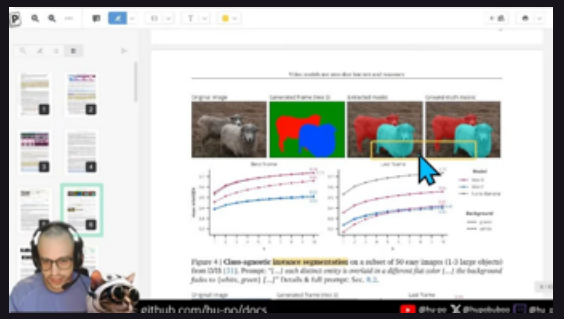


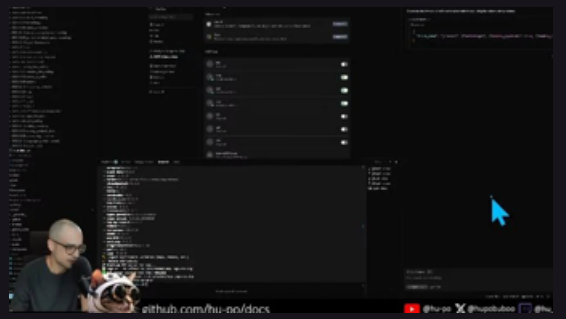


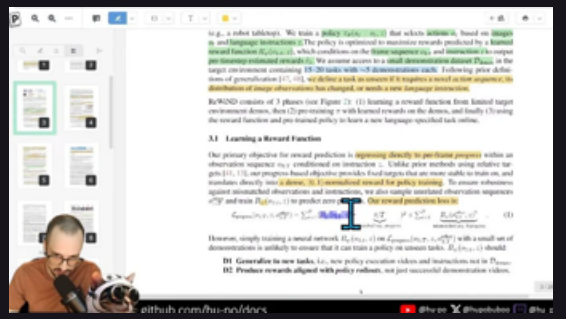


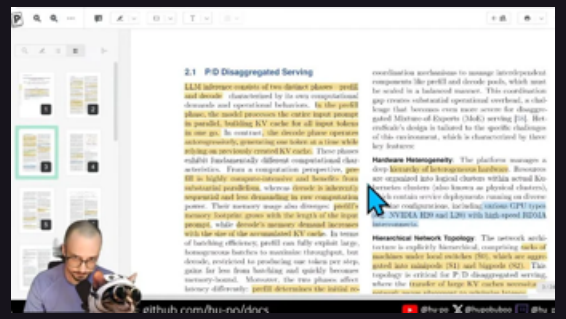


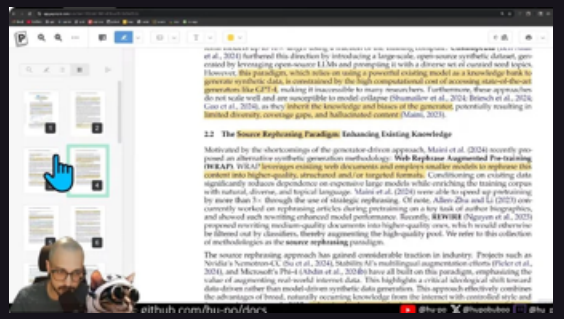


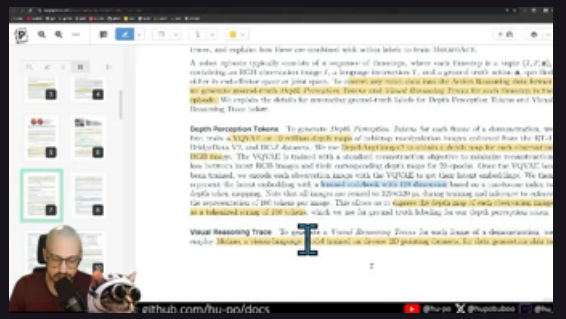


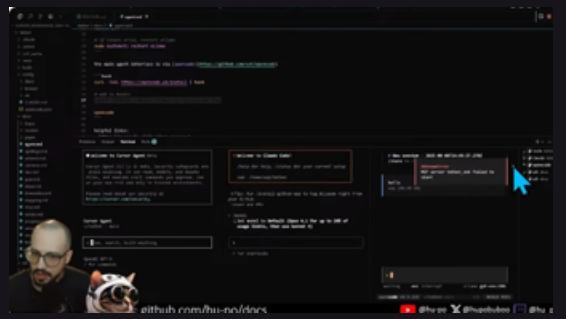




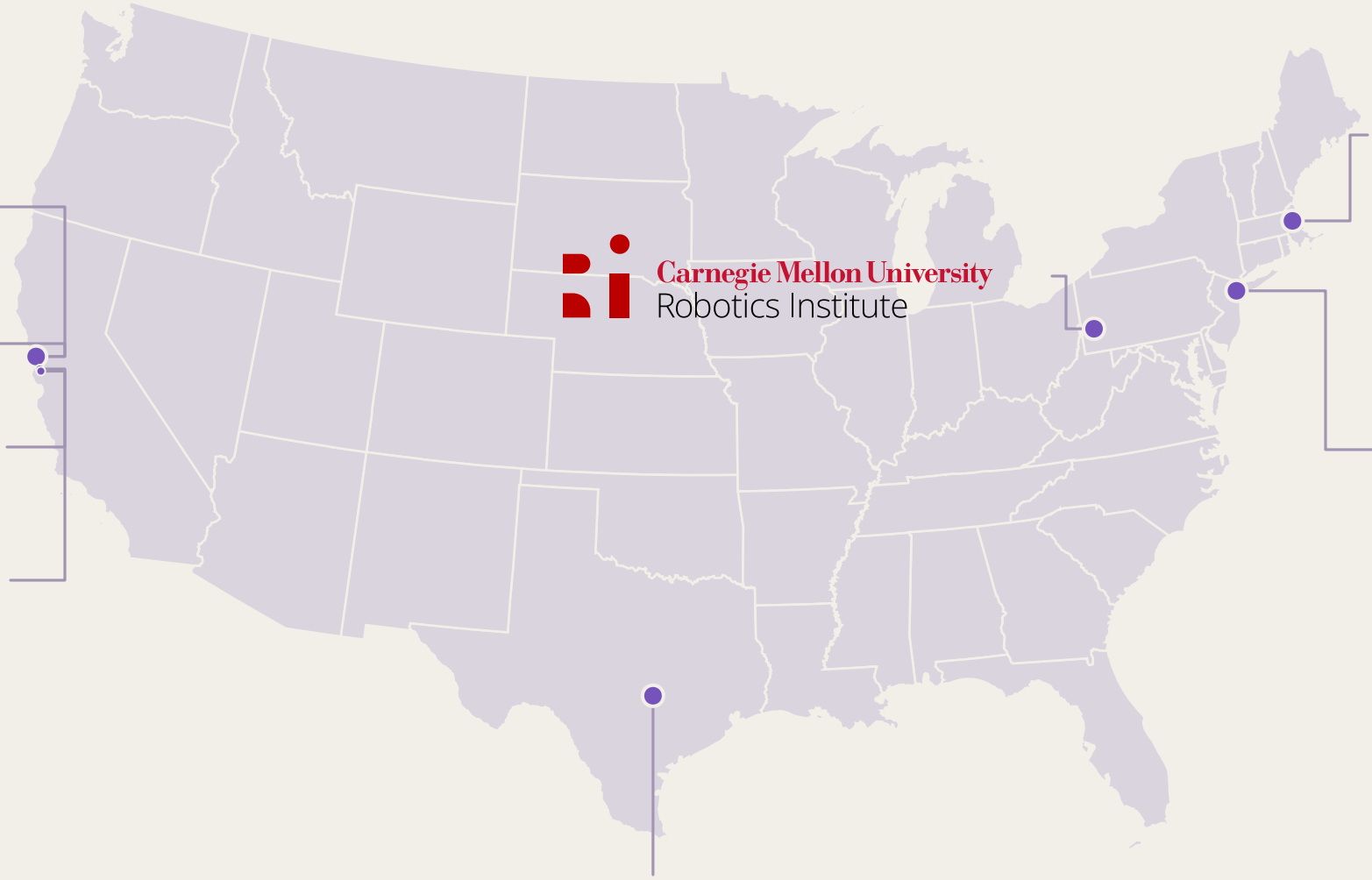








Robotics Researcher



Y

OSARO

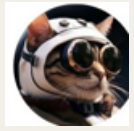
k-scale labs

Google

Carnegie Mellon University
Robotics Institute

amazon robotics

fauna robotics



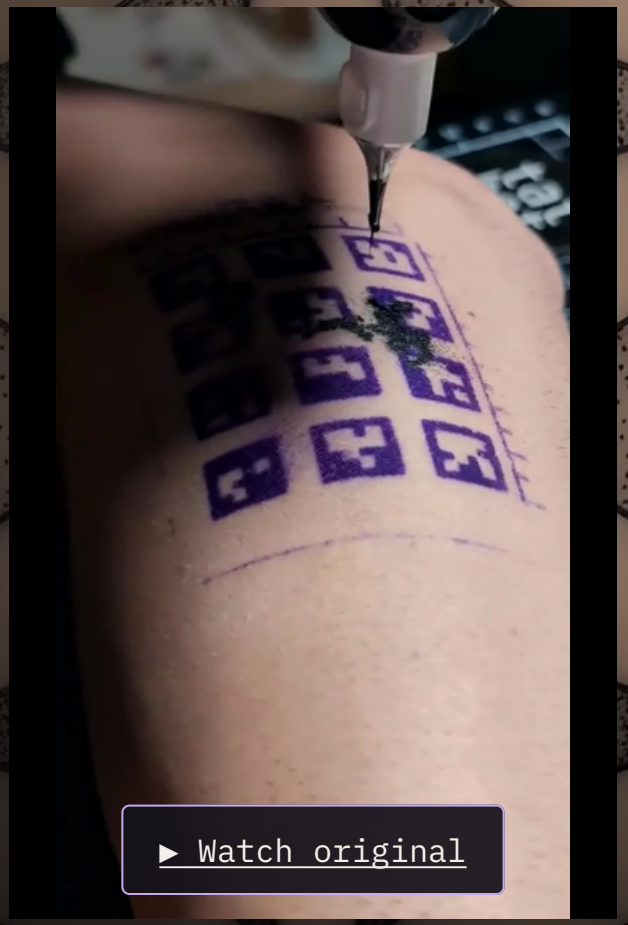
hu-po

Founder

@tatbot / YouTube



silicone skin



forearm tattoo



palette calibration

Recorded research footage · early human self-test does not establish readiness for use on other people.

Live Demo

Tatbot Hardware



2xD405
Depth: 30fps | 1280x720
RGB: 30fps | 1280x720

Tattoo pen

Trossen WXAI arm
6 DoF | 1.5kg payload
Acc./Rep.: 1mm

Thor



128GB unified
14-core Arm CPU
Blackwell GPU
2070 TFLOPS (FP4)

Spark



128GB unified
20-core Arm CPU
Blackwell GPU
1000 TFLOPS (FP4)

D555
Depth: 30fps | 640x360
RGB: 30fps | 1280x720

Touch display

RPi camera
60fps | 1920x1080

Raspberry Pi
8GB | 4-core A76

Touch probe

Palette
PETG-CF | 6 inkcaps

What Is an Agent?

LLM + Harness

LLM ↔ Harness

Tools

Read, write and act

Context

Task, memory and evidence

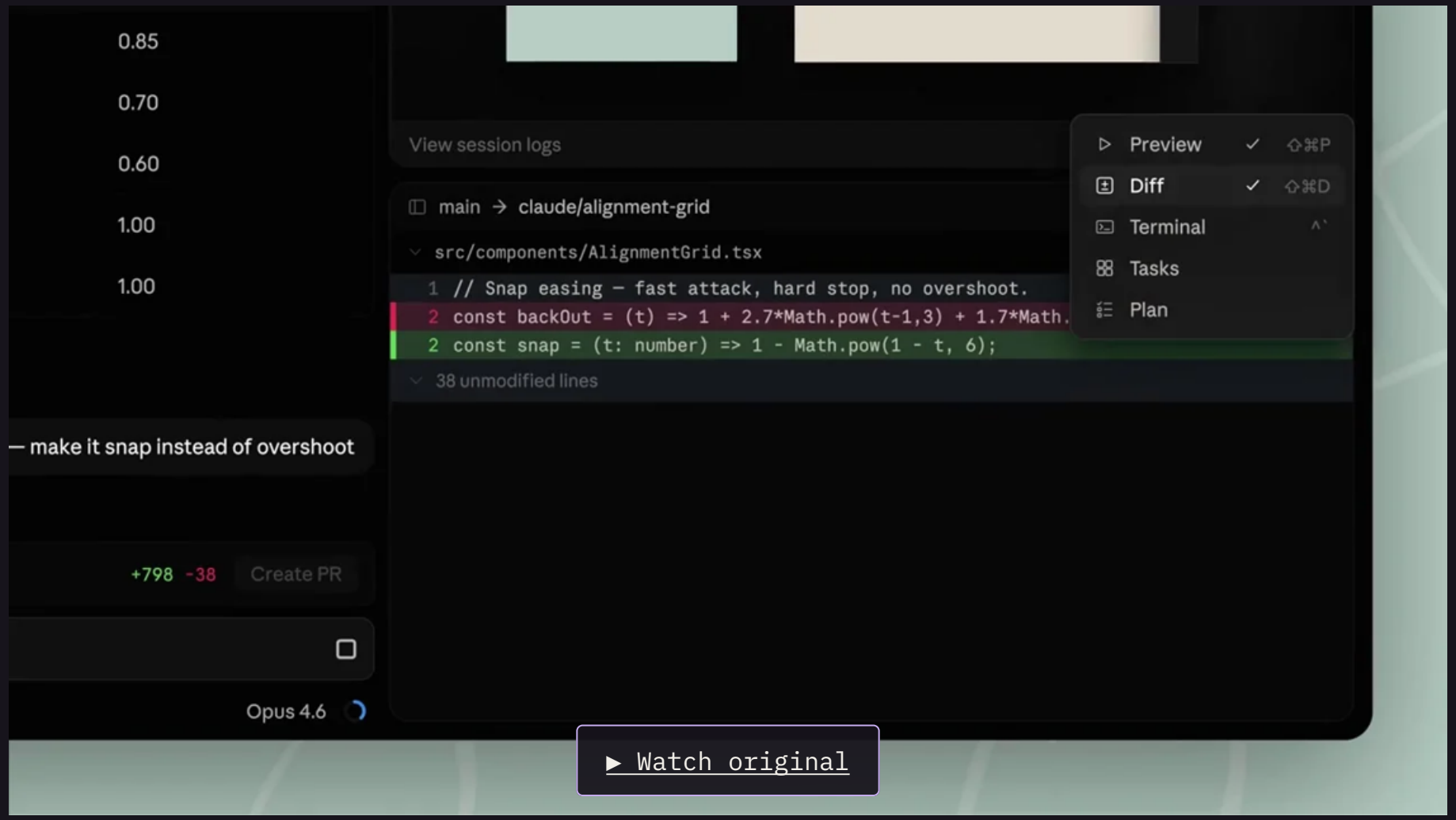
Loop

Observe, decide and check

An action returns a result. The next decision uses it.

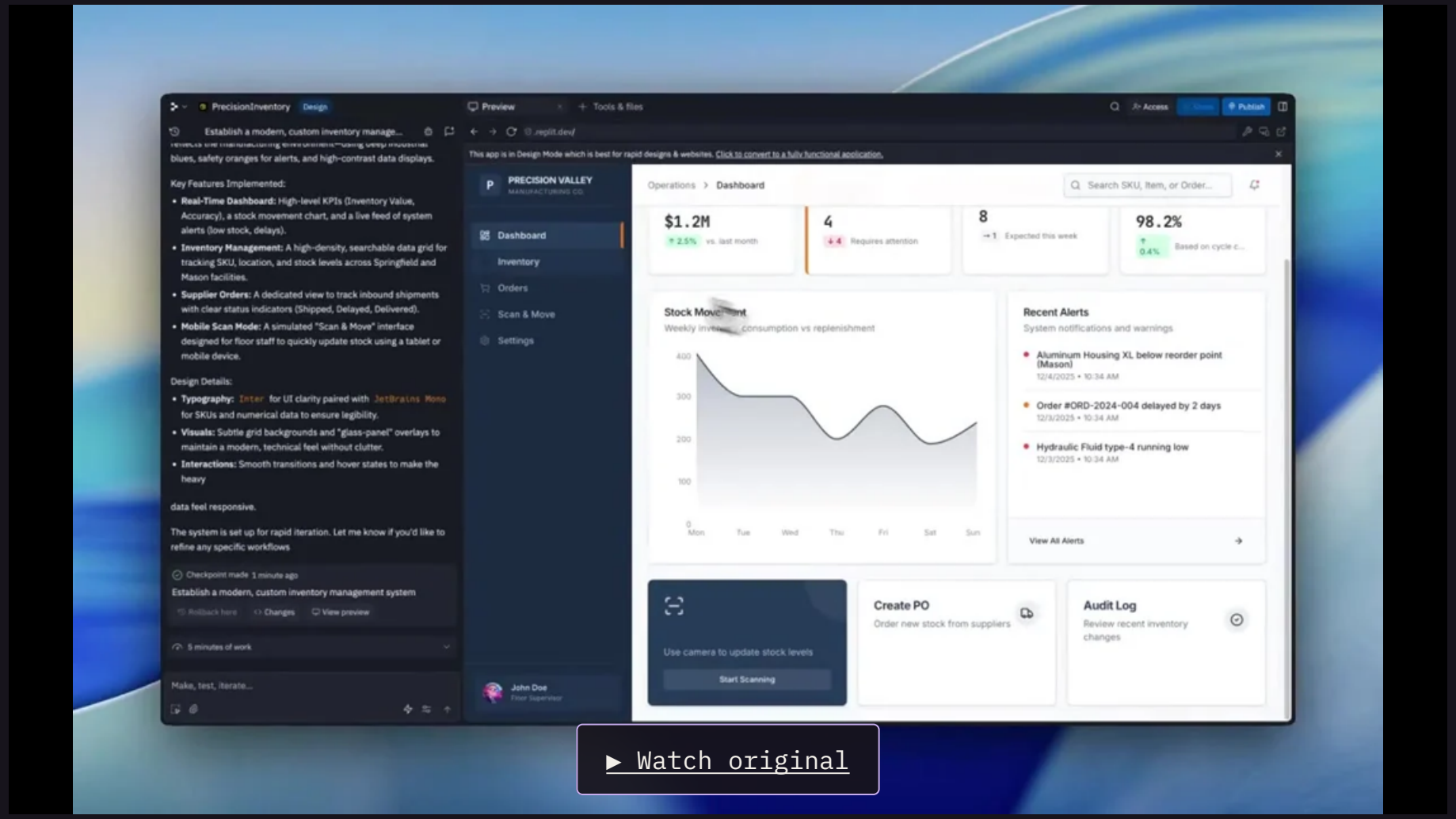
Agents for Software

Claude Code



Anthropic · Desktop Demo (2026) · Claude Code

Replit Agent



Replit · Miro to App Demo (2025)

Agents for 3D

MeshFormer

Direct 3D asset generation

Text or image → RGB + normals → Textured mesh



Sourdough bread



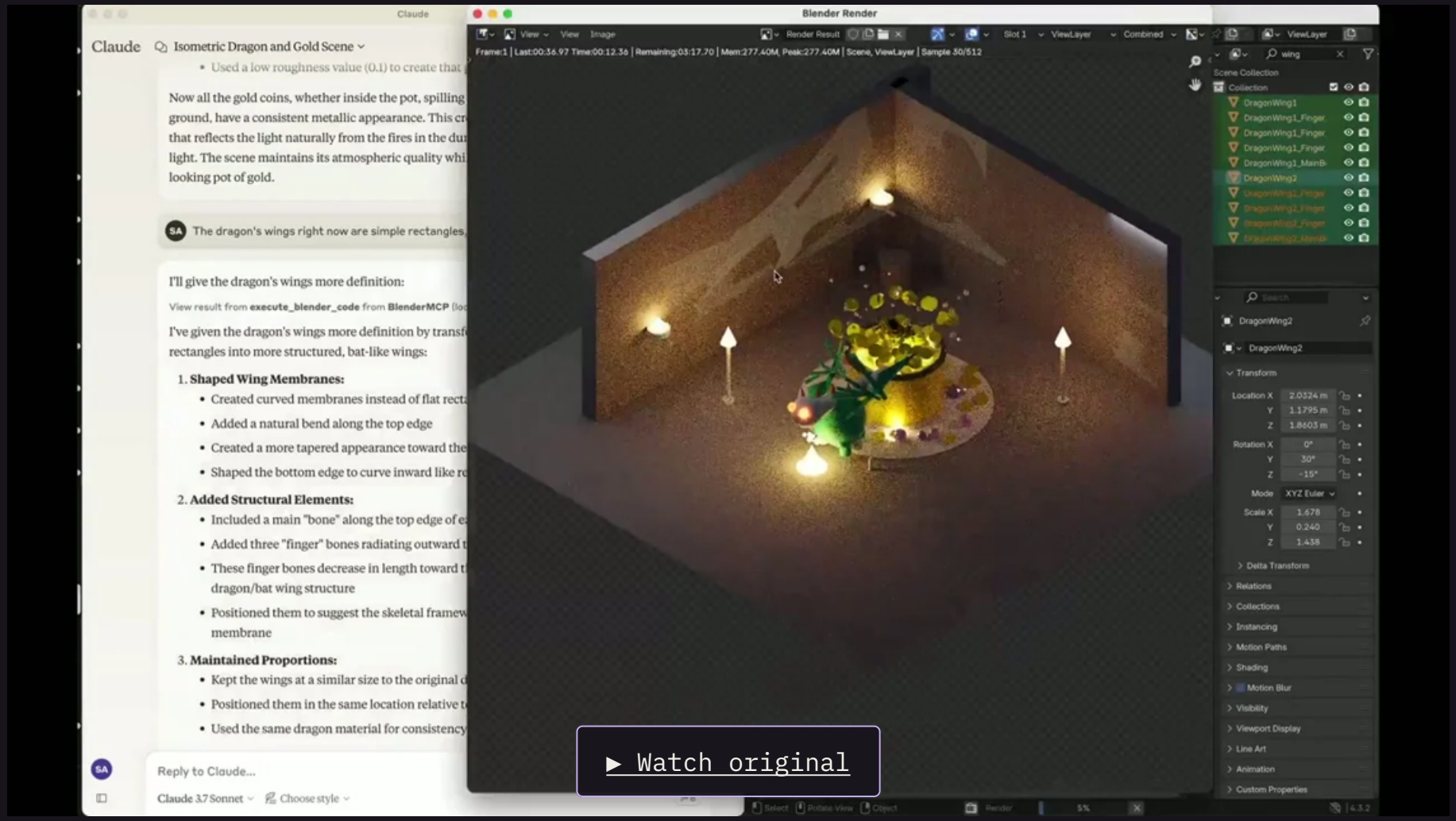
Golden goblet



Chimpanzee with headphones

Liu et al. (NeurIPS 2024) · Project + examples

Claude + Blender MCP



Siddharth Ahuja (2025) · Original Demo · Blender MCP

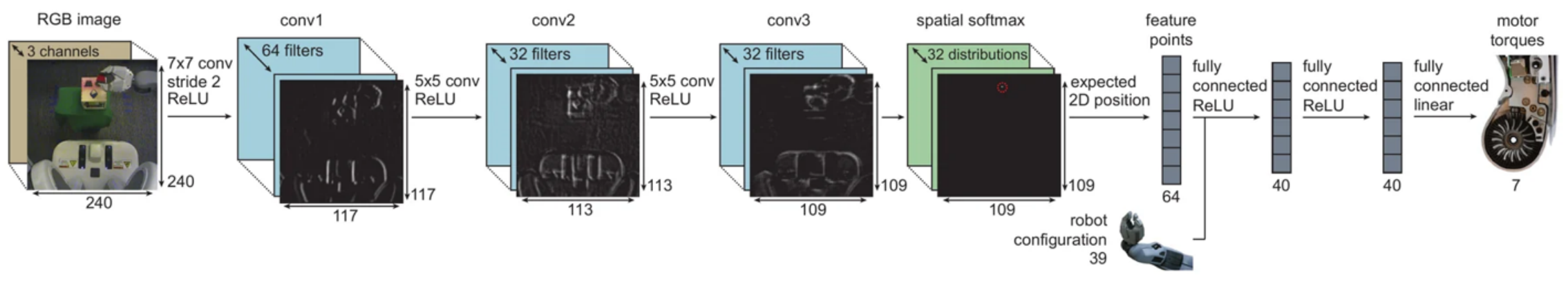
Tatbot Palette 🎨



Agents for Robotic Control

Deep Visuomotor Policies

Images + Robot Configuration In, Motor Torques Out



Levine, Finn, Darrell & Abbeel · 2015 / JMLR 2016 · Figure 2

Research example · see original source for evaluation conditions.

Agents Controlling Robots



Conveyor sim · @sensho



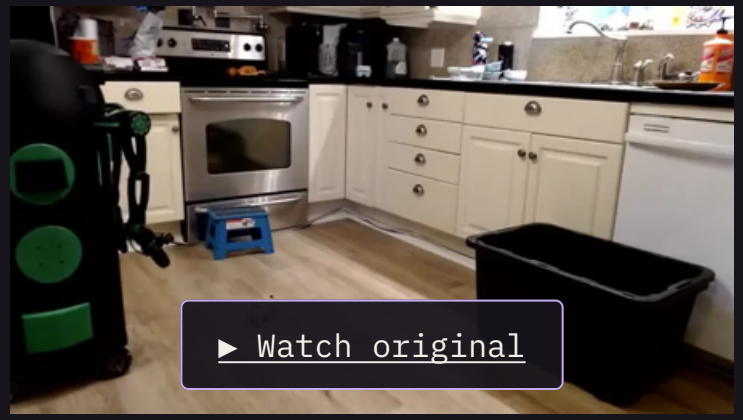
Interlocked parts · Qineng Wang



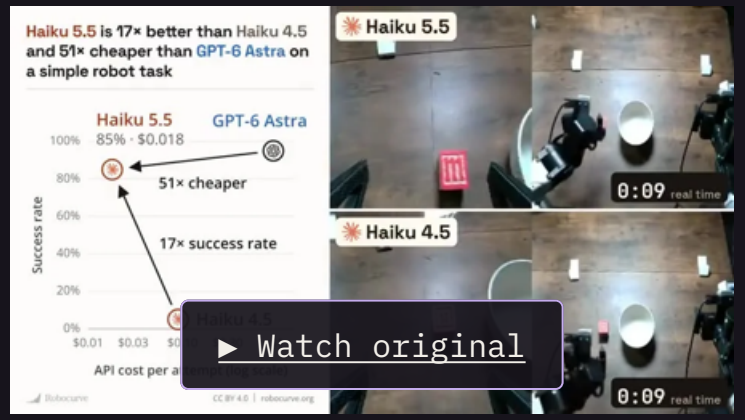
Painting · @cdngdev



Circle of blocks · @unixpickle



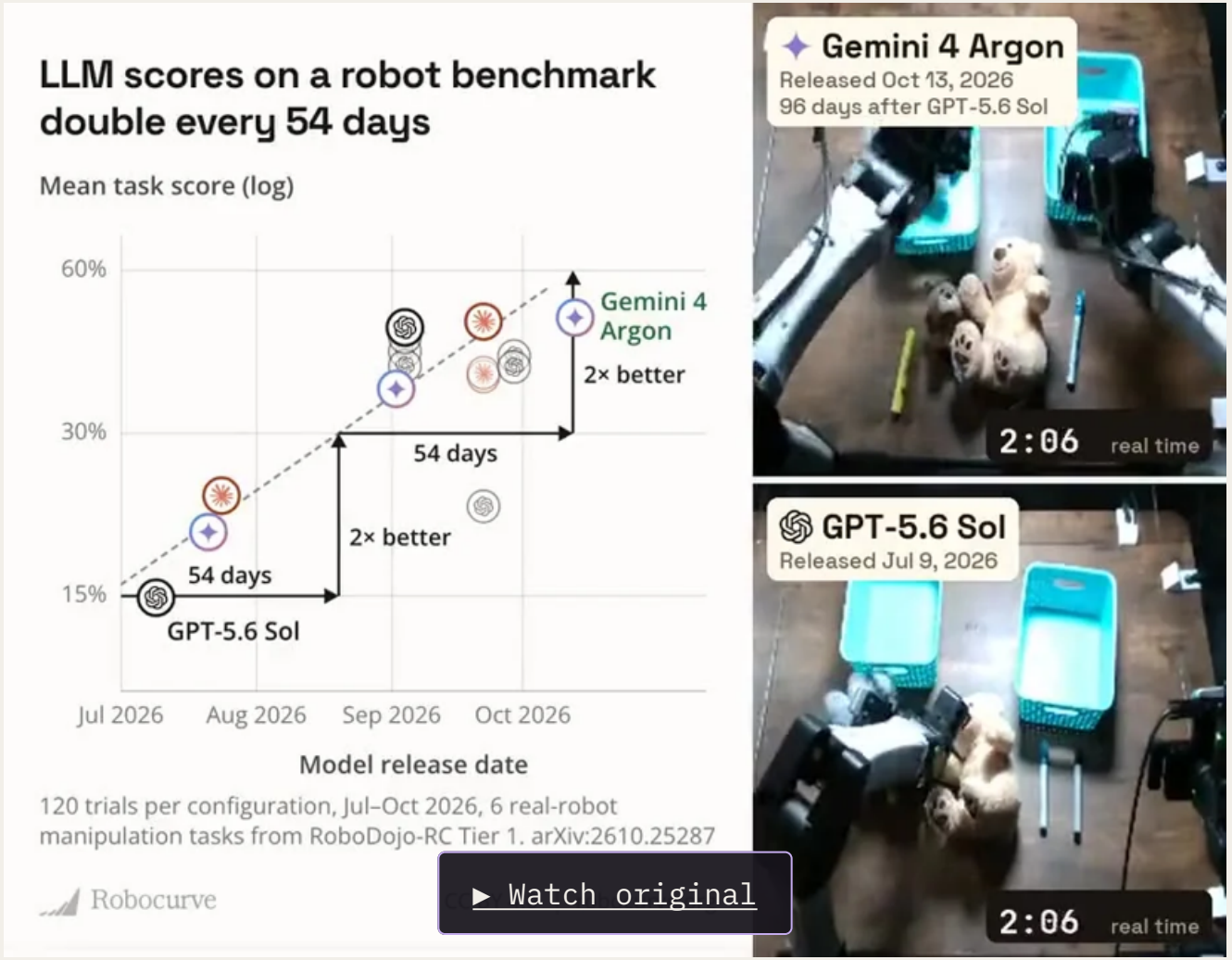
Mobile robot · @Sentdex



Robot benchmark · Jay Chooi

Research example · see original source for evaluation conditions.

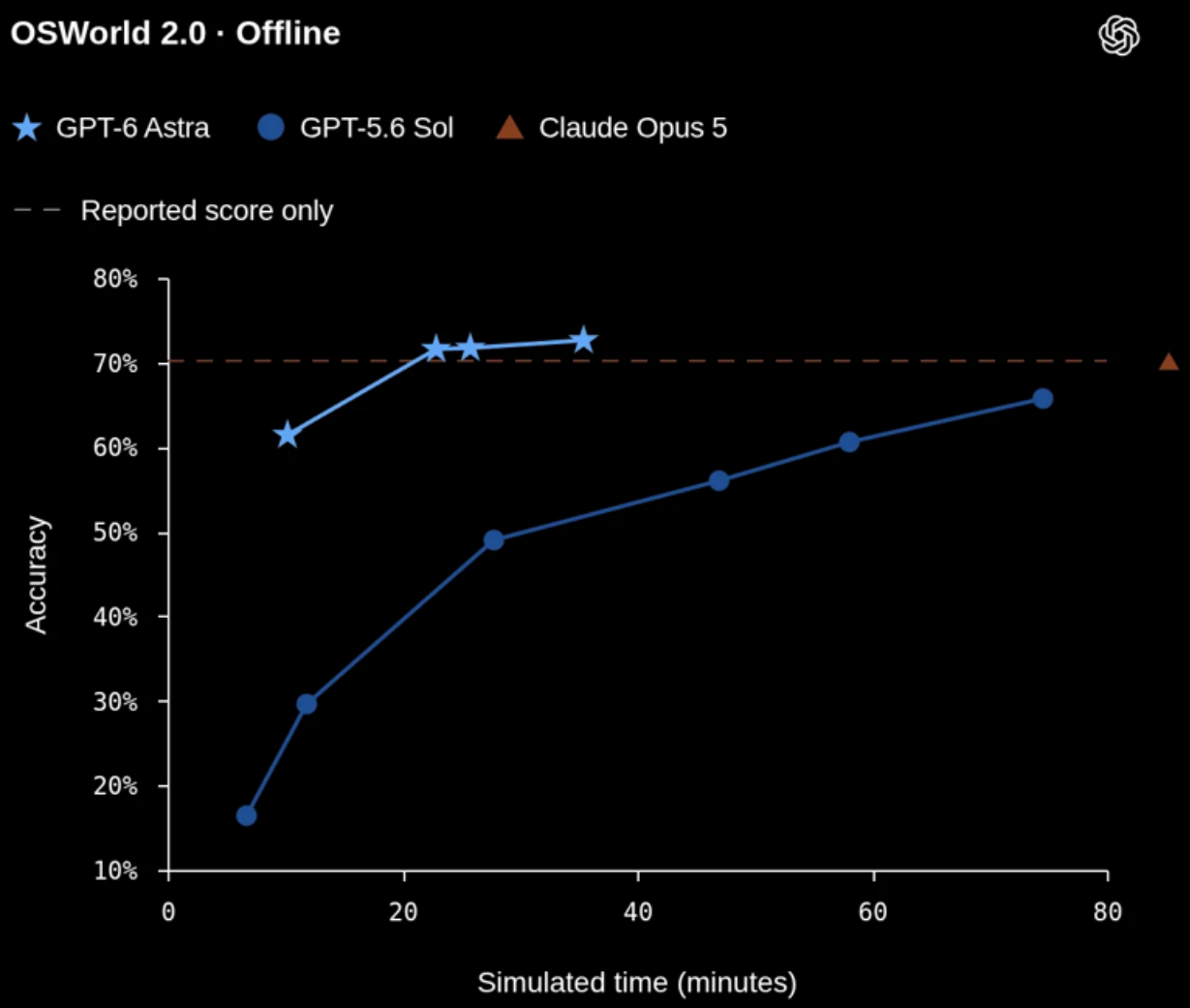
The Bitter Lesson Comes to Robotics



Robocurve original video (CC BY 4.0) · Paper (v2)

Research example · see original source for evaluation conditions.

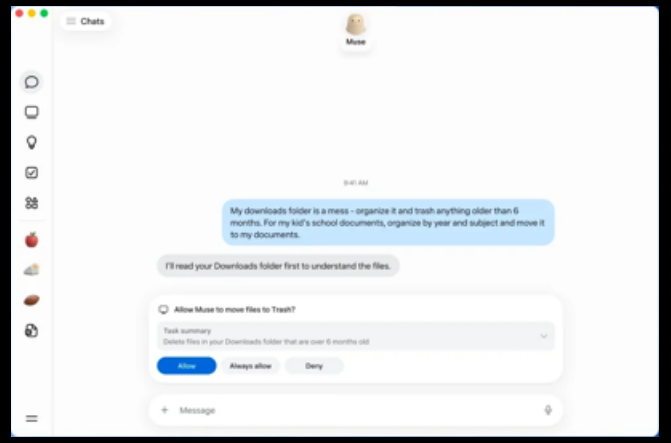
Computer Use



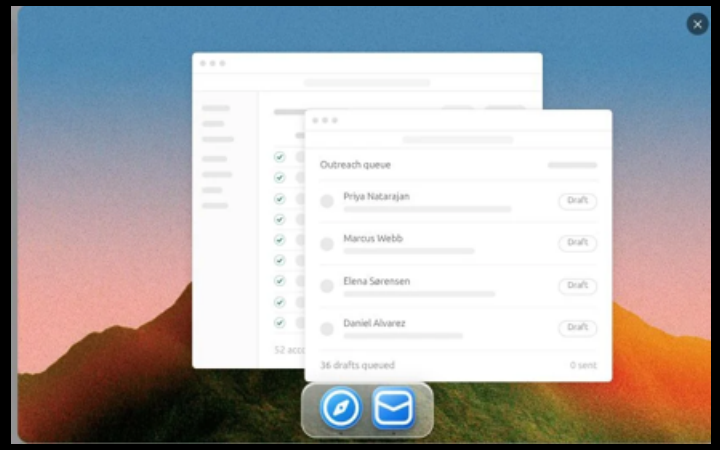
OSWorld: partial task score, simulated time

Research example · see original source for evaluation conditions.

Meta Muse



Grok Bot



Pretraining and Post-Training Compute

01

Pretraining

Learn a starting model

02

Post-training

Adapt its behavior

03

Evaluation

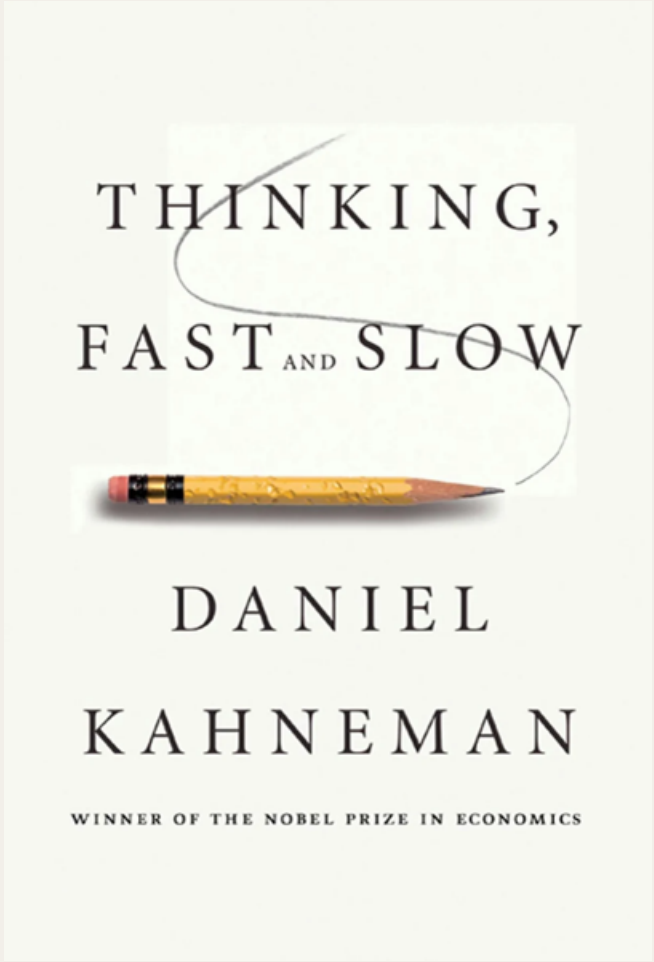
Test the resulting behavior

Evaluation tells us whether a change helped.

Research example · see original source for evaluation conditions.

System 1 + System 2

Thinking, Fast and Slow



System 1

“operates automatically and quickly, with little or no effort…”

System 2

“allocates attention to the effortful mental activities that demand it…”

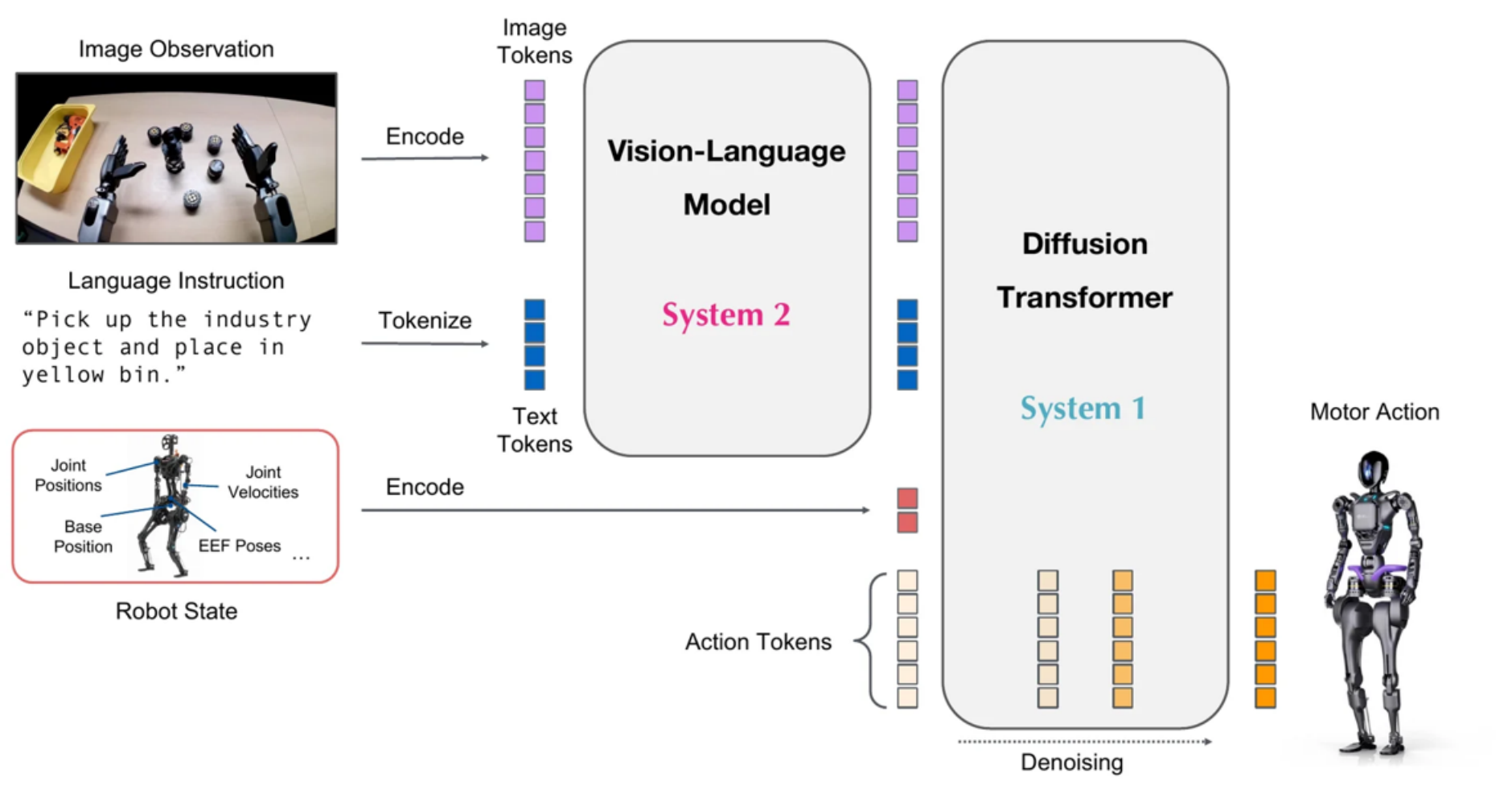
Daniel Kahneman, 2011
Short excerpts from Chapter 1

Original book (2011) · Chapter 1 excerpt

Research example · see original source for evaluation conditions.

System 1 + System 2 Inside a VLA

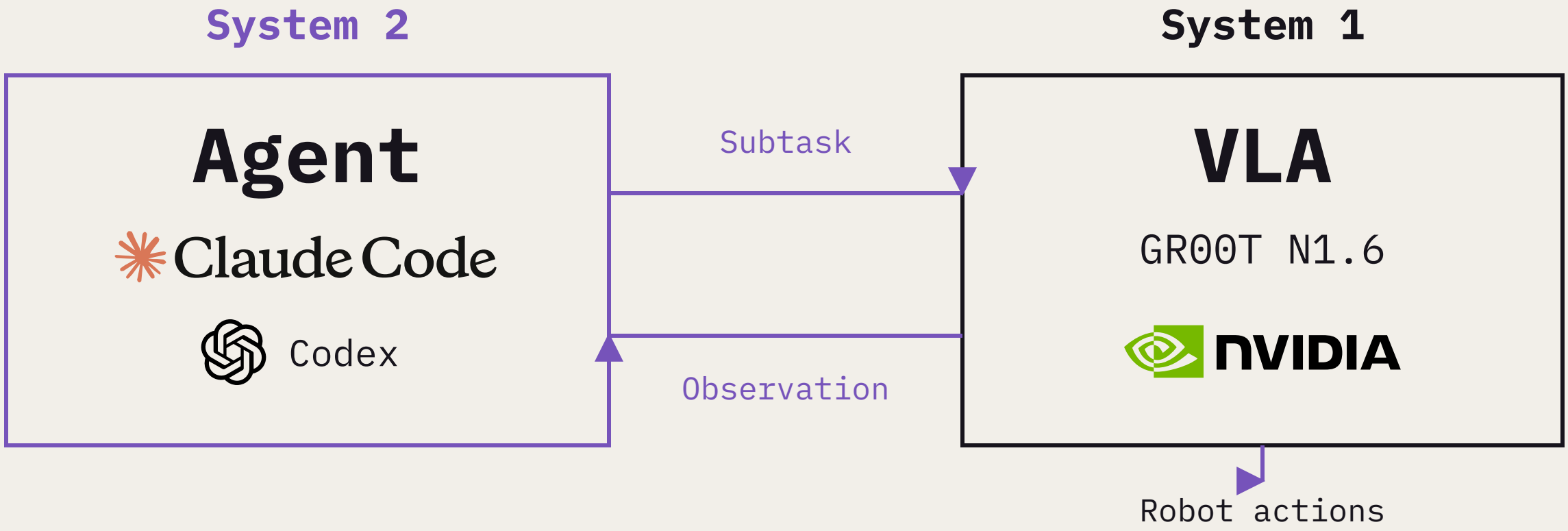
GR00T N1 (NVIDIA, 2025)



GR00T N1 (NVIDIA, 2025), Figure 2 (cropped) · CC BY 4.0

Research example · see original source for evaluation conditions.

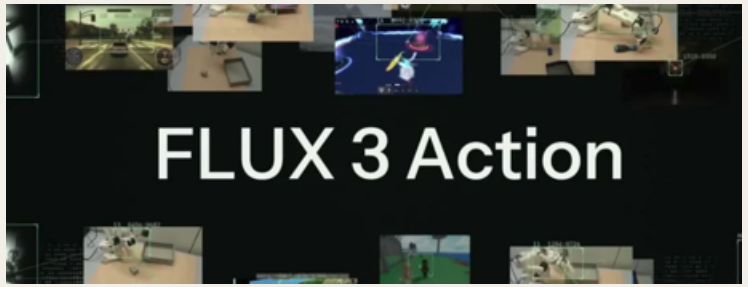
System 1 + System 2: Agent + VLA



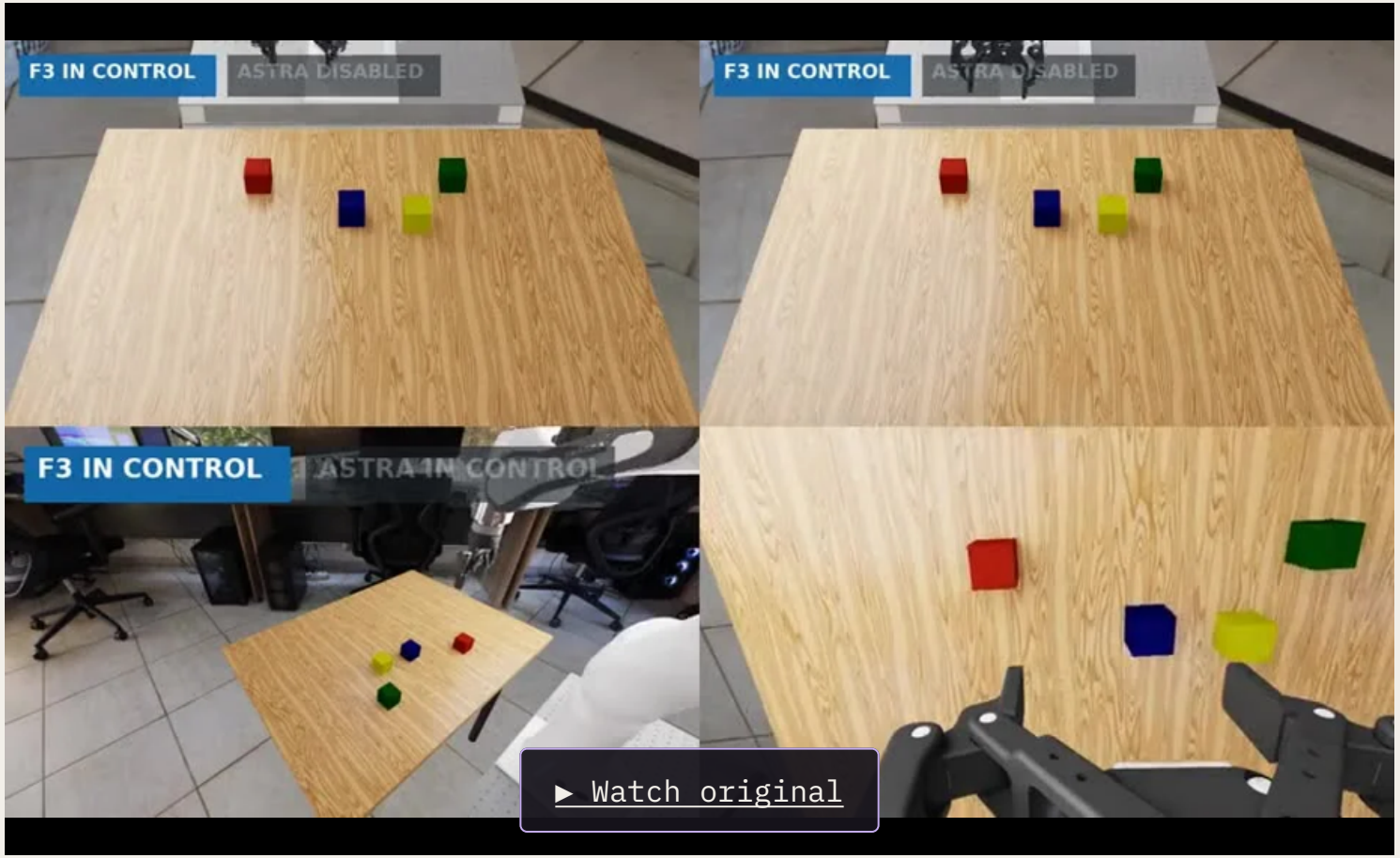
Vesta paper (2026), Appendix B + D · Robot demos + harness

Research example · see original source for evaluation conditions.

FLUX 3 Action



Configuration	Success rate	Cost per success ($)	Time per success	Tokens per success
F3 + Astra (xhigh)	94% 47/50	11.00	11m 53s	7.83M
Pi0.5 + Astra (xhigh)	92% 46/50	14.41	17m 09s	10.12M
F3 + Astra (medium)	84% 42/50	10.41	10m 05s	7.69M
Pi0.5 + Astra (medium)	86% 43/50	12.28	14m 26s	8.86M
F3 + Astra (low)	90% 45/50	8.77	8m 08s	6.60M
Pi0.5 + Astra (low)	86% 43/50	15.57	13m 33s	12.38M
Pure Astra (xhigh)	100% 50/50	13.47	16m 23s	10.00M
Pure Astra (medium)	94% 47/50	15.50	14m 48s	12.11M
Pure Astra (low)	84% 42/50	17.77	14m 21s	14.13M

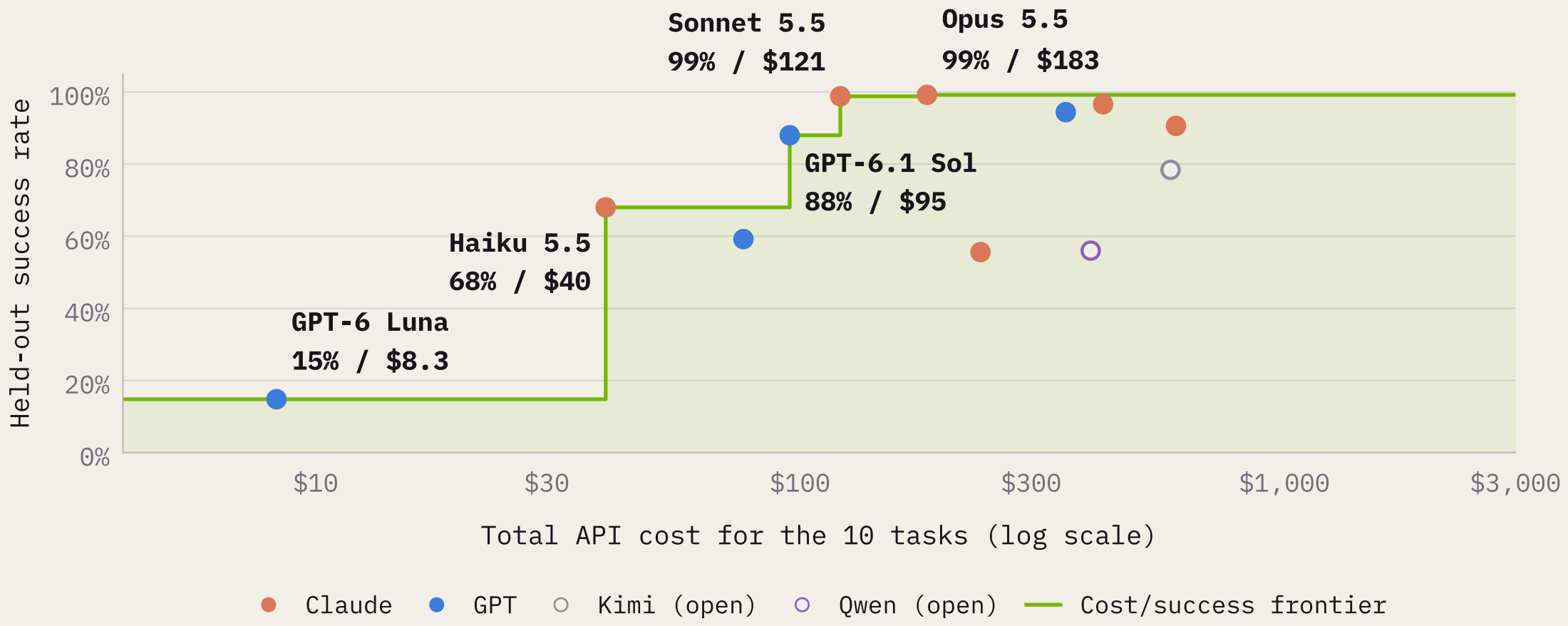


Black Forest Labs · bfl.ai/models/flux-3-action

Research example · see original source for evaluation conditions.

ASPIRE: Success vs. Cost

10 LIBERO-Pro tasks · held-out success vs. estimated API cost

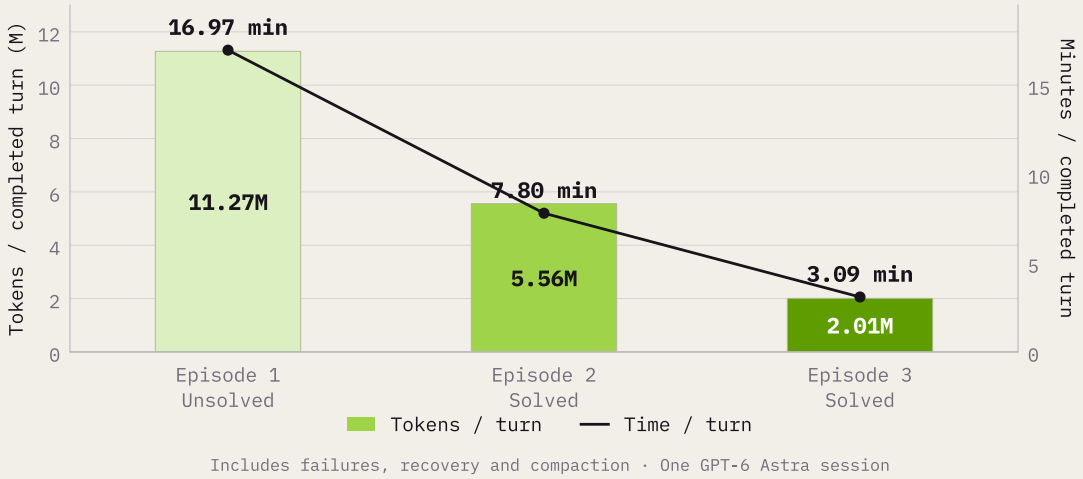


ASPIRE Project · Jim Fan Post · Authors' Chart Data

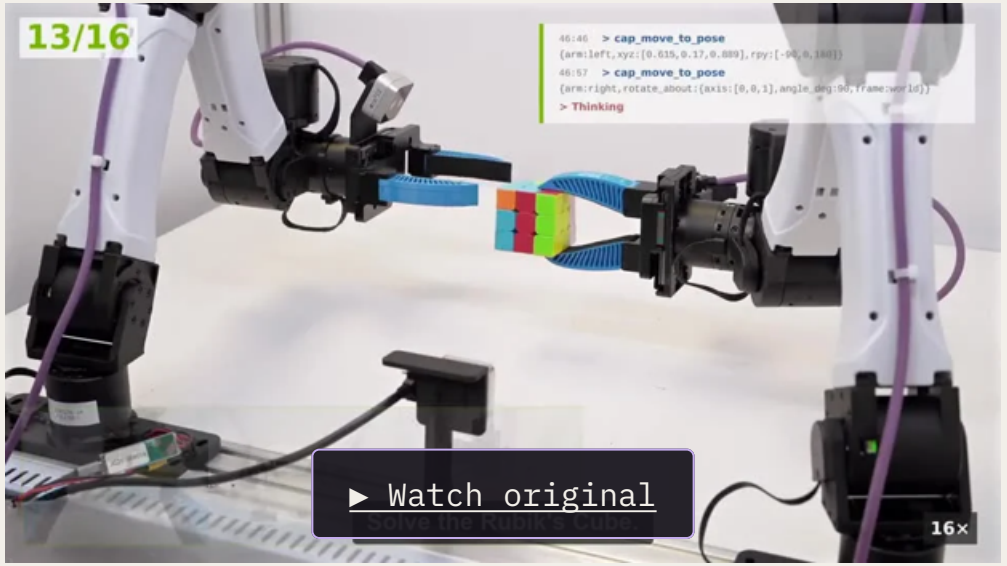
Research example · see original source for evaluation conditions.

ASPIRE: Learning on a Real Robot

Rubik’s Cube · tokens and time per completed face turn



Includes failures, recovery and compaction · One GPT-6 Astra session



Example cube turns

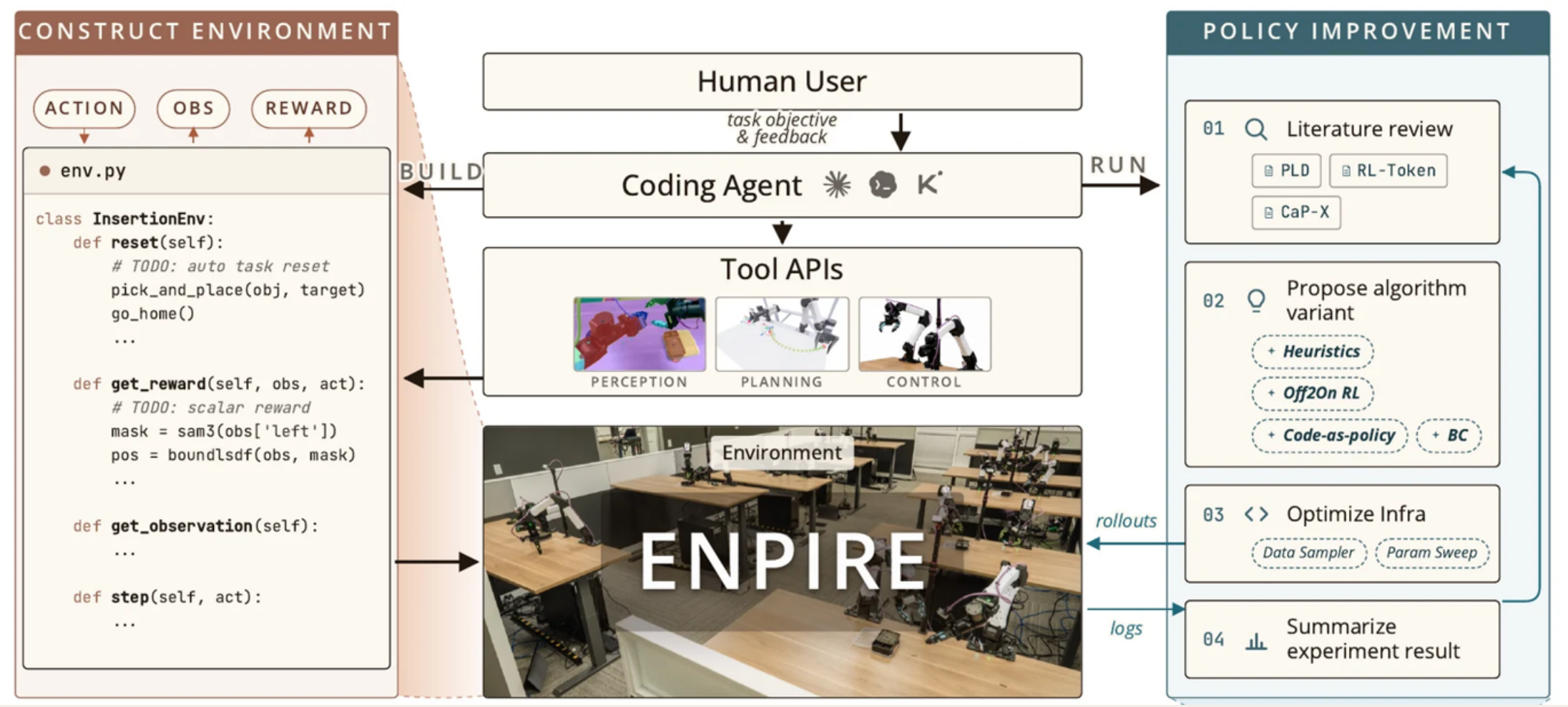
ASPIRE Project · Jim Fan Post · Authors’ Chart Data

Research example · see original source for evaluation conditions.

Agents for Autonomous Research

ENPIRE Architecture

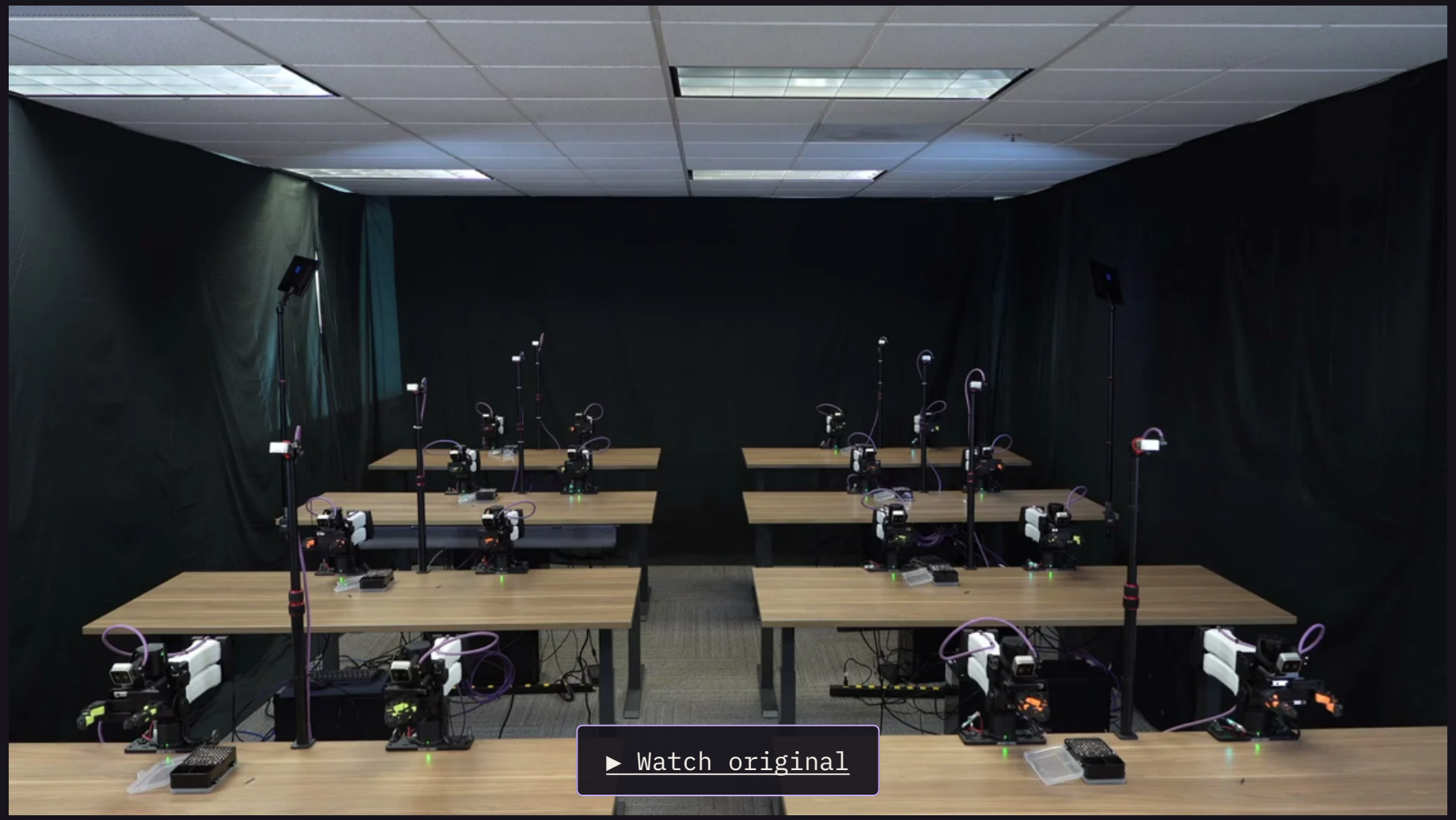
Agentic Robot Policy Self-Improvement in the Real World



NVIDIA / CMU / UC Berkeley — Figure 2 · Project Page

Research example · see original source for evaluation conditions.

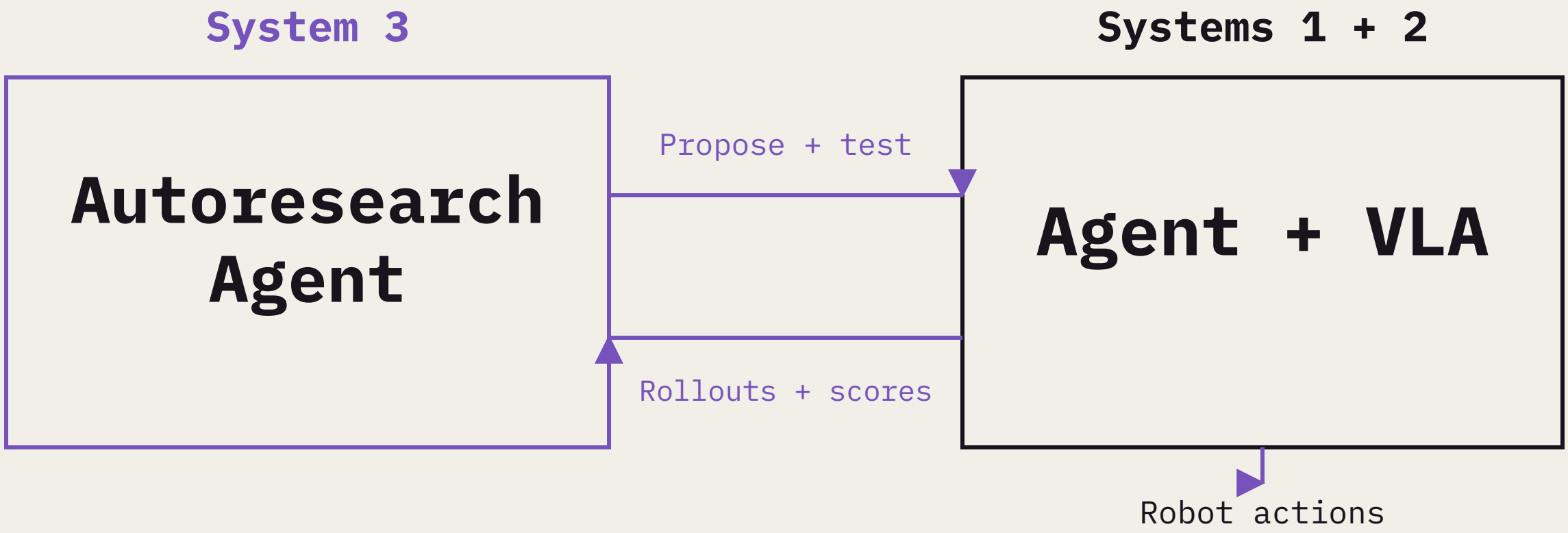
MRU: Mean Robot Utilization



NVIDIA ENPIRE — Pin Insertion Fleet (8×) · Original Video

Research example · see original source for evaluation conditions.

System 3: Agentic Autoresearch



Conceptual synthesis · ENPIRE paper · ENPIRE Project

Conceptual architecture · research direction, not a verified deployment.

Tatbot: A System 3 Architecture

CLOUD MODELS

LOCAL · ON SITE

System 3



Server racks

Opus 5.5

GPT-6.1 Sol

Improve

System 2



DGX Spark

Qwen

opencode

Execute

System 1



Jetson Thor

LeRobot

ROS

Python

Rust

Logs + outcomes

DGX Spark · Jetson Thor · NVIDIA rack · Asset sources

Conceptual architecture · research direction, not a verified deployment.

Thank You

HICAM

AUSTIN ROBOTICS