Survival First, Tasks Later

A robot that must keep itself charged while it learns a task — experiment plan

Status: being built. No hardware results yet.

Shuheng Zhang · UC San Diego · plan, October 2026

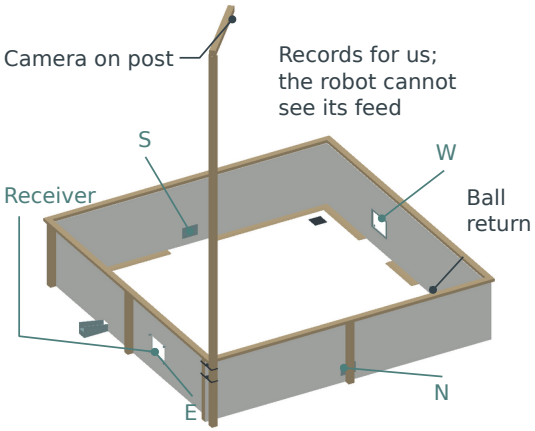
THE QUESTION Can it learn to stay charged, then learn a task because that task keeps the charger powered?

Its brain: Claude Code, a language-model coding agent running on the robot. No reward, no score; only its own battery.



THE SETUP

1.8 m × 1.8 m · walls 40 cm

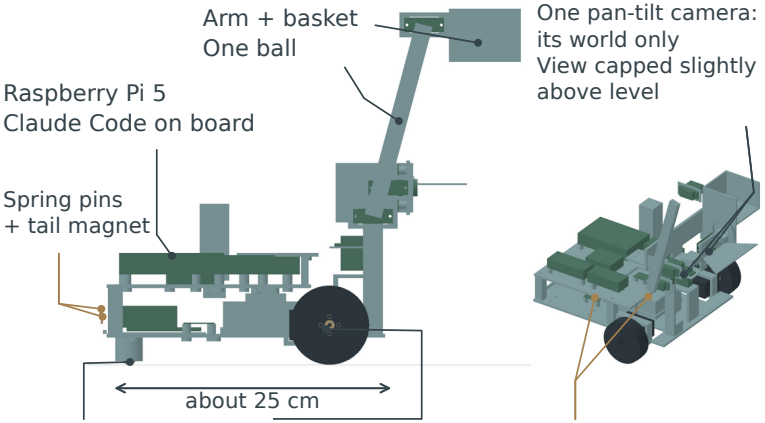


Mac mini + microcontroller:
switch dock relays; count balls

N/S: brass strips; relay enables power
E/W: infrared beam counts; gravity ball return

now · late Oct

THE ROBOT



Two bus-servo wheels
+ ball caster

3-cell Li-ion + V/I sensor
Feels charge in and out

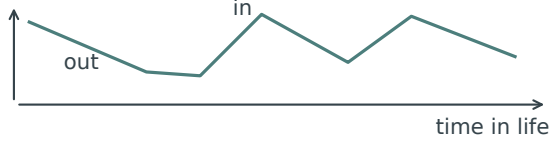
CAD concept model (v0); parts being bought and measured.

Memory: a 4 MB disk carries over between lives.
Dock magnets pull the tail square to the brass strips.

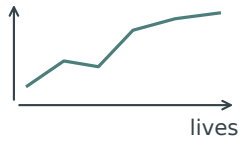
WHAT WE WILL MEASURE

expected shape, no data yet

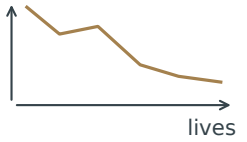
Battery trace · each life



Time alive



Dock / delivery time



Also each life: low battery → charging delay;
docking attempts / successes; balls delivered.

Time share



STAGES

Build

Oct – early Nov 2026

Parts bought; bench tests;
arena woodwork.

Stage 1 · Survival

November 2026

Docks always powered.
Find a dock, back in, charge.

Stage 2 · Tasks

Late Nov – Dec 2026

Only after a ball: dock power
for a while. Working is how
it keeps charging.

Later · Two robots

2027

Identical bodies; shared docks.
Learn by watching each other?
Cooperation or competition?

Exists: earlier simulations of the same kind of agent across many lives, bodies and worlds; robot and arena CAD; most parts in hand.

Being built: the robot, the docks, the arena.