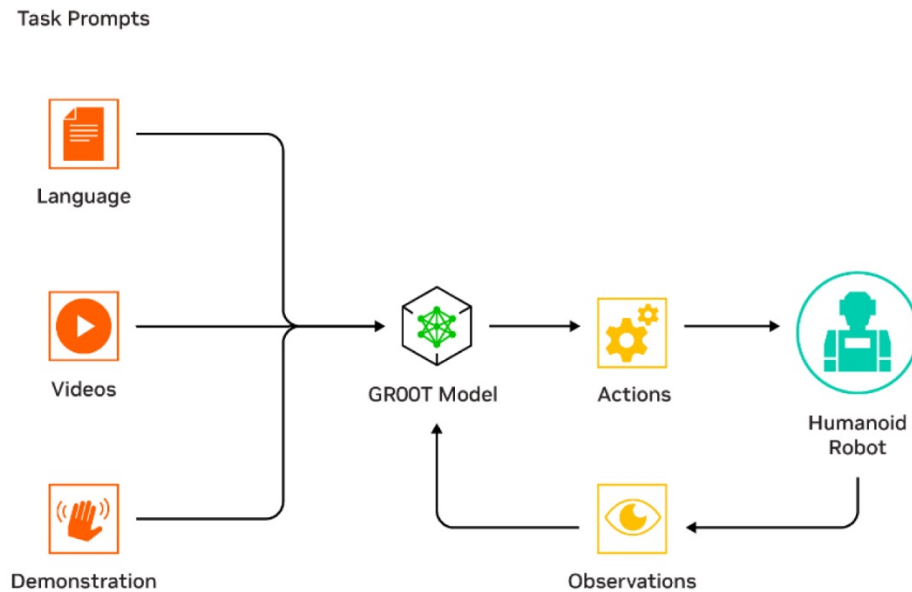# NVIDIA Project GR00T

Generalist Robot 00 Technology

GR00T is a **general-purpose foundation model** that promises to transform humanoid robot learning in simulation and the real world. Trained in NVIDIA GPU-accelerated simulation, GR00T enables **humanoid embodiments** to learn from a handful of human demonstrations with **imitation learning** and NVIDIA Isaac Lab for **reinforcement learning**, as well as generating robot movements from video data. The GR00T model takes multimodal instructions and past interactions as input and produces the actions for the robot to execute.


GR00T Model Training Workflow

NVIDIA Project GR00T

Robot Learning and Scaling Development Workloads

We developed NVIDIA Isaac Lab to train GR00T at scale and built NVIDIA OSMO, a compute orchestration service that coordinates the training and inference workflows across NVIDIA DGX systems for training, NVIDIA OVX systems for simulation, and NVIDIA IGX and NVIDIA AGX systems for hardware-in-the-loop validation.
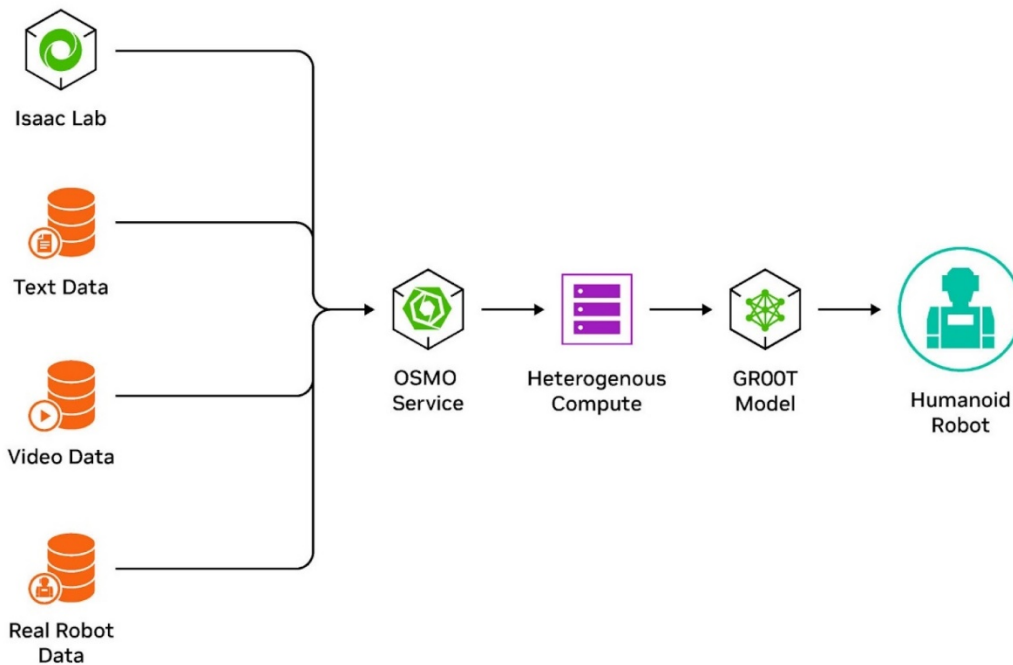
Robot Learning and Orchestration Setup

NVIDIA Project GR00T

NVIDIA Isaac Lab

Isaac Lab is a lightweight reference application built on the NVIDIA Isaac Sim platform specifically optimized for robot learning and is pivotal for robot foundation model training. Isaac Lab optimizes for reinforcement, imitation, and transfer learning, and is capable of training all types of robot embodiments.

NVIDIA OSMO

OSMO is a cloud-native workflow orchestration platform that lets you easily scale your workloads across distributed environments—from on-premises to private and public cloud resource clusters. It provides a single pane of glass for scheduling complex multi-stage and multi-container heterogeneous computing workflows.