

Quiz 9 - Project GR00T w/ Jim Fan (11/4)

Total points 5/5

INSTRUCTIONS:

Each of these quizzes is completion based, however we encourage you to try your best for your own education! These quizzes are a great way to check that you are understanding the course material. You can attempt this quiz as many times as you wish. You only need to complete the quizzes if you wish to earn a completion certificate. More information at the bottom of the course website.

IMPORTANT:

In order to receive credit, use the same email address as the one used to sign up for the course. If you are not sure which email you used, just complete the sign up form again with your preferred email.

PROBLEMS?

If you have any technical difficulties about this quiz, please ask course staff in our LLM Agents Discord.

Email *

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✓ What is **NOT** included in the data pipeline for generalizable robots? * 1/1

- ☐ Exabytes of unfiltered, noisy internet data collected daily to enrich the training dataset with diverse scenarios and contexts
- ☐ High-fidelity simulation data processed at terabyte-scale across GPUs each day to enhance virtual training environments
- ☐ Daily real-world data continuously streamed from each individual robot, capturing diverse, task-specific interactions
- ☒ Curated datasets pre-labeled by human experts to provide task-specific annotations and fine-tune robotic responses ✓



✓ **According to the speaker, what is the most important reason for the statement that robots will spend most of their lives in simulation?** *1/1

- ☒ Simulation enables robots to operate continuously, accumulating vast quantities of high-quality data beyond real-time constraints ✓
- ☐ Robots in simulation can engage in complex, high-stakes scenarios that are otherwise too risky or costly to replicate in the physical world
- ☐ Training robots in simulation provides a shortcut to real-world problem-solving by allowing them to bypass practical limitations like hardware wear and environmental unpredictability
- ☐ The simulation environment is highly controlled, allowing researchers to observe and tweak robot behavior in ways that are impossible outside the lab

✓ **How does HOVER use reinforcement learning to generate robot simulation data?** *1/1

- ☒ HOVER uses a distillation process that combines proprioceptive feedback to train the teacher policy trained with reinforcement learning, and supervised command masking to train the student policy ✓
- ☐ By leveraging multi-agent reinforcement learning, HOVER allows groups of robots to interact and learn collaboratively, optimizing for collective task performance
- ☐ HOVER uses unsupervised reinforcement learning, where the robot explores various random tasks to independently develop generalizable skills across different control modes
- ☐ Through hierarchical reinforcement learning, HOVER breaks down complex actions into manageable sub-tasks, ensuring each joint and limb function is optimized separately



✓ **What is *NOT* a core component in the generative robot simulation framework?** *1/1

- ☐ Three dimensional object assets designed by generative AI models
- ☒ A physics engine to simulate realistic movements and interactions ✓
- ☐ Generalizable tasks for the robots created by leveraging LLM code generation
- ☐ A stable diffusion model to create universal scene descriptions

✓ **How is Project GR00T distinguishable from pre-existing research in the field?** *1/1

- ☐ Unlike prior projects that specialize in single-skill mastery, Project GR00T emphasizes skill diversity while sacrificing adaptability across different bodies and environments
- ☐ Project GR00T's framework is centered on simplifying robot training by focusing solely on virtual environments, minimizing the need for real-world deployment
- ☒ Project GR00T uniquely focuses on building a single, foundational agent that can operate with high proficiency across different embodiments, skill sets, and simulated and real environments ✓
- ☐ Prior projects like MetaMorph and HOVER focus on specific combinations of skills or embodiments, whereas Project GR00T is the combination of these projects to support a universal, adaptable agent

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