



Inclusive Robotic Foundation Model with Unstandardized Data

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Grand Challenge and Goal:

We develop an “inclusive robot foundation model” that learns with unstandardized data collected from a wide variety of robots to fully exploit the diversity of robots without restriction.

Summary:

- Develop a world model-based controller that does not standardize motion commands to robots by absorbing differences through macroscopic and microscopic motion objectives
- Learn a foundation model without standardizing the quality and quantity of modalities by facilitating cross-modal effects via language
- Build a structure that divides and links the foundation model (less dependent on embodiment) and the world model (directly connected to embodiment)
- Select the human-robot cooperative system that can elicit the robot's capabilities with less burden on the human without limiting teaching methods
- Demonstrate that the robot can perform atypical tasks that a user instructs verbally with procedures and actions that make the most of its individuality

Social Impact:

- Many researchers, universities, and companies with unique robots can freely share data to rapidly accelerate and scale up a robotic foundation model
- A new robotics industry can be created to solve labor shortages through the sale and lease of multifunctional robots for atypical tasks with users

Inclusive robot foundation model that **respects individuality of each robot** and elicits its capabilities

