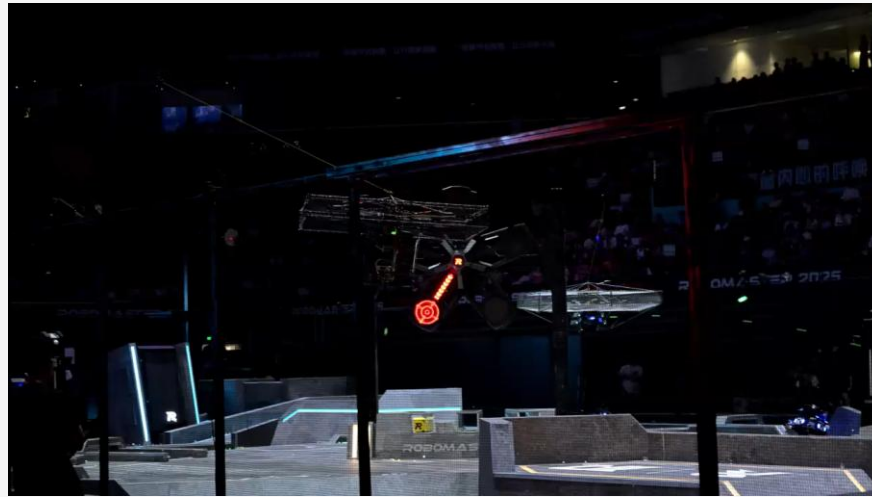


Robomaster – Awards and Demos



National Champion - 2024



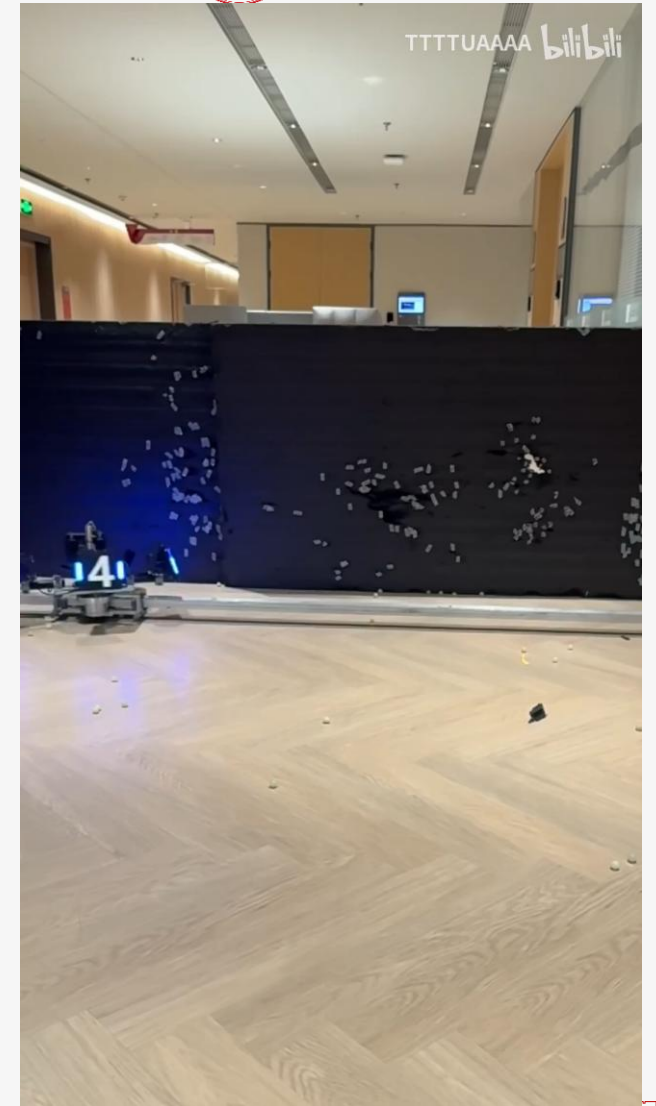
Activating Energy module with Drone



National Champion - 2025

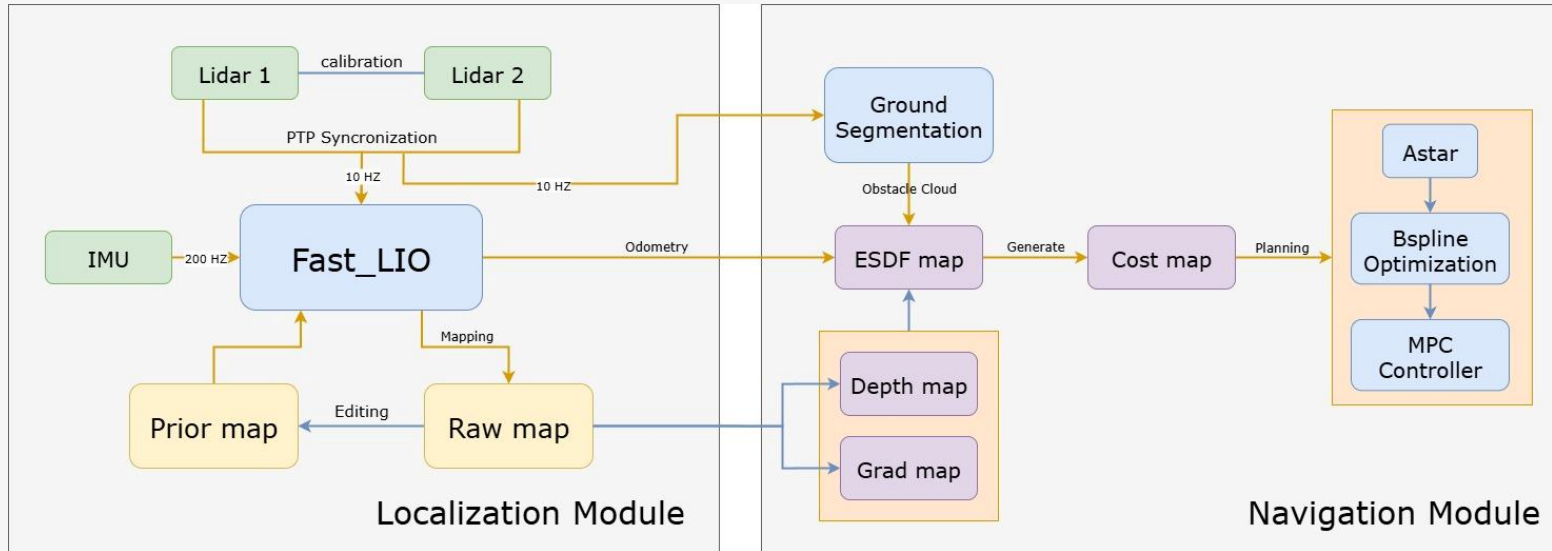


Self-Navigating on different terrains

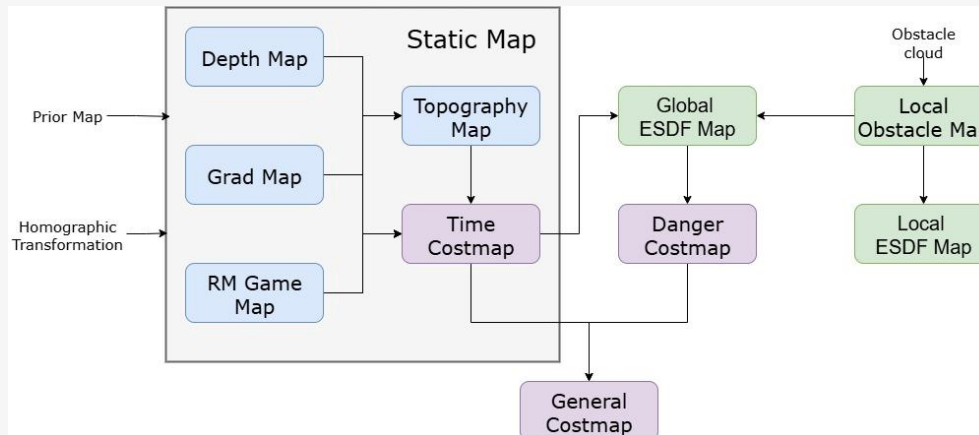


Auto-aim System

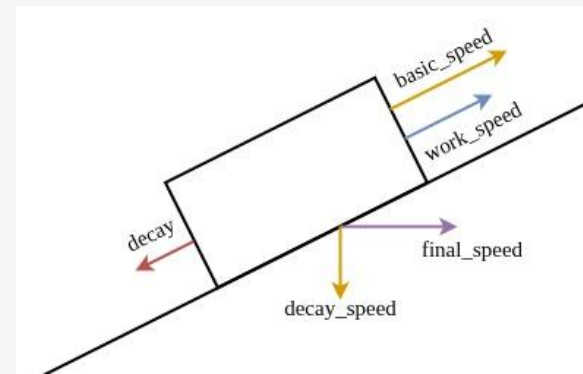
RM Award - SLAM and Navigation System



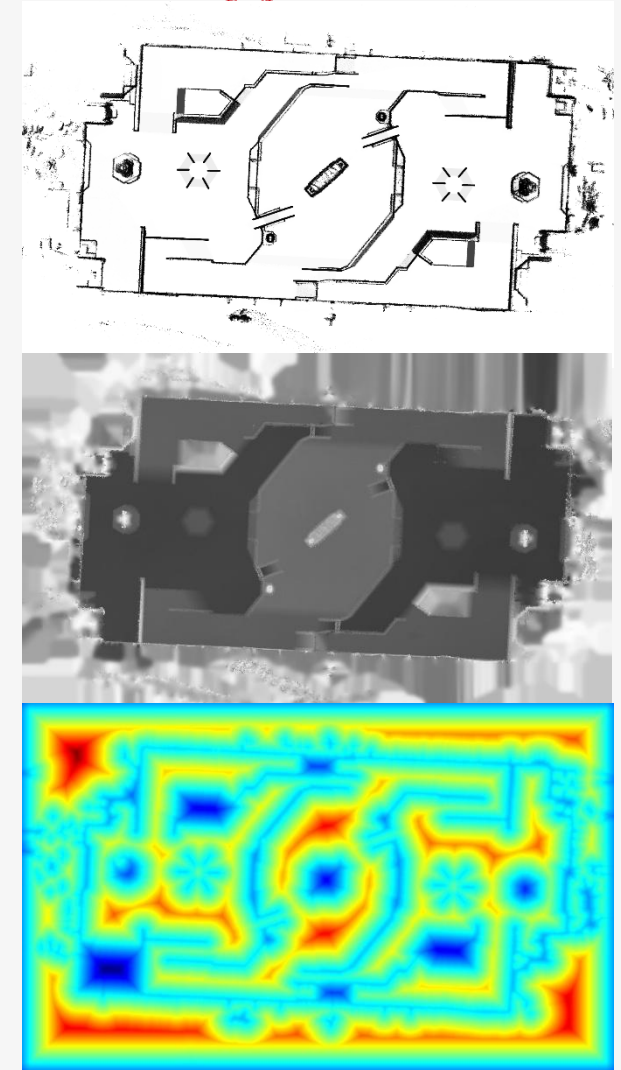
System Framework



Map Module Framework



Slope decay cost



Grad, depth and ESDF map

Representation Matters for Visuomotor Alignment

Problem: Spurious correlations in action attention

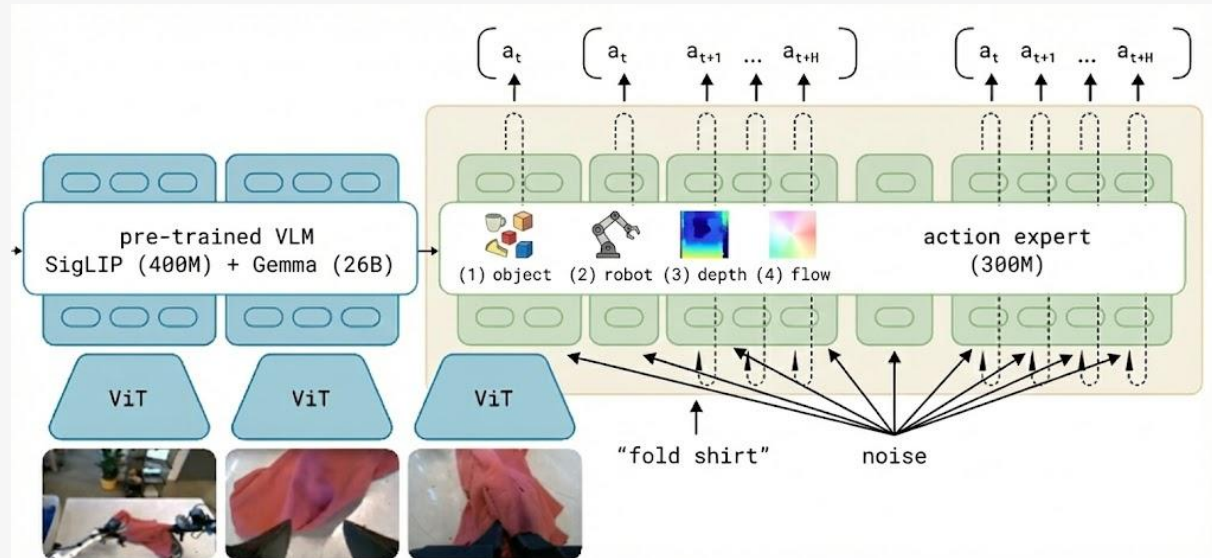


Action tokens attend to task-irrelevant regions

Contributions:

- Propose a factor-decoupled attention design where different attention heads specialize in distinct perceptual factors
- Enable end-to-end joint optimization of heterogeneous attention heads within a unified policy
- Validate the effectiveness of factor decoupling across multiple robotic manipulation benchmarks (LIBERO/RoboTwin)

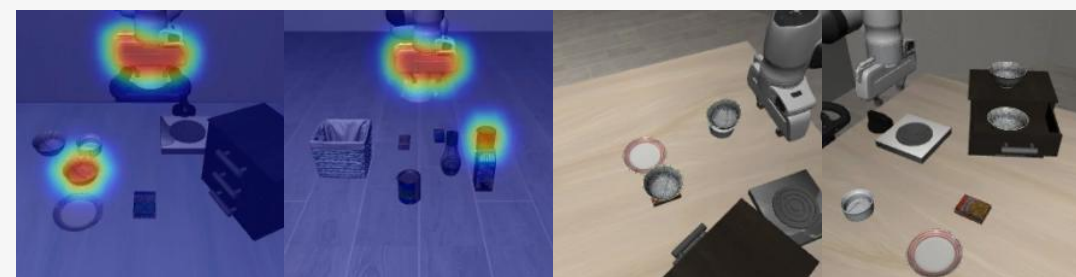
Our Method: Factor-**Decoupled** Representation Learning



Key idea: Explicitly separate object, robot, depth, and flow representations

Preliminary Results:

Qualitative analysis on LIBERO; Task performance evaluated on RoboTwin 2.0



π_0 -attn (heatmap)

π_0 -depth (depth pred)

Model	Bottle Adjust	Hammer Block	Bin Dump	Card Relocation
π_0	71%	75%	61%	69%
π_0 -attn	99%	81%	90%	81%

Task-Level Performance on RoboTwin 2.0