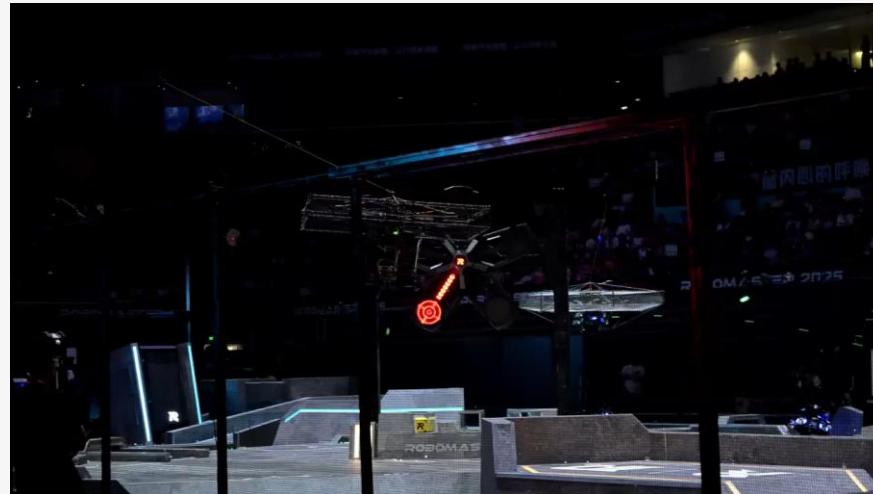


# Robomaster – Awards and Demos



National Champion - 2024



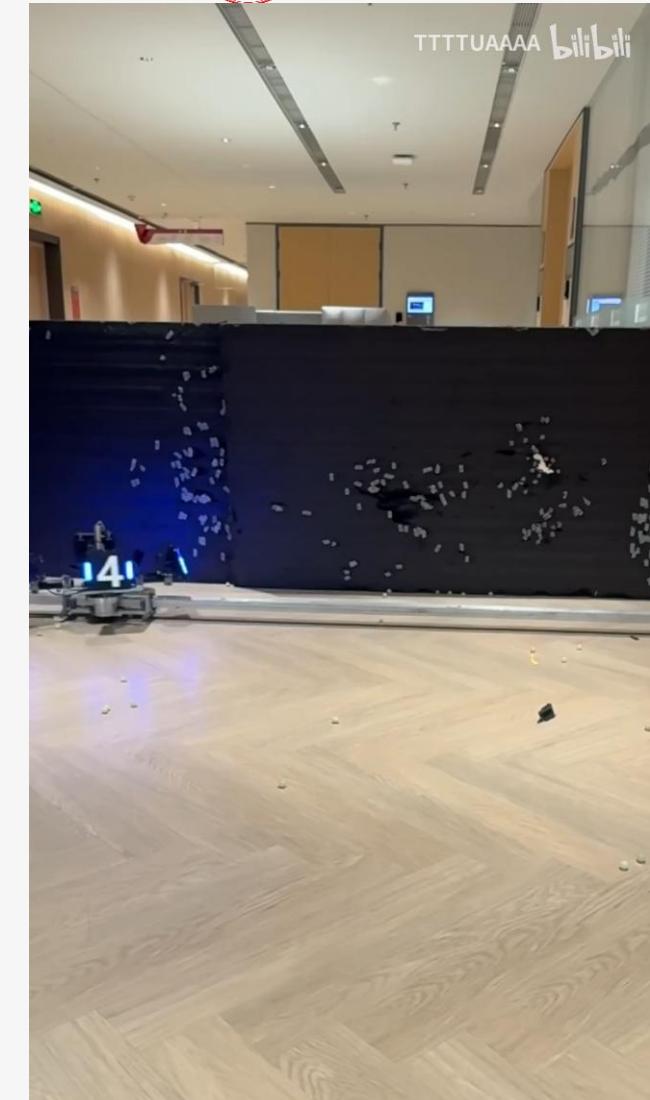
Activating Energy module with Drone



National Champion - 2025

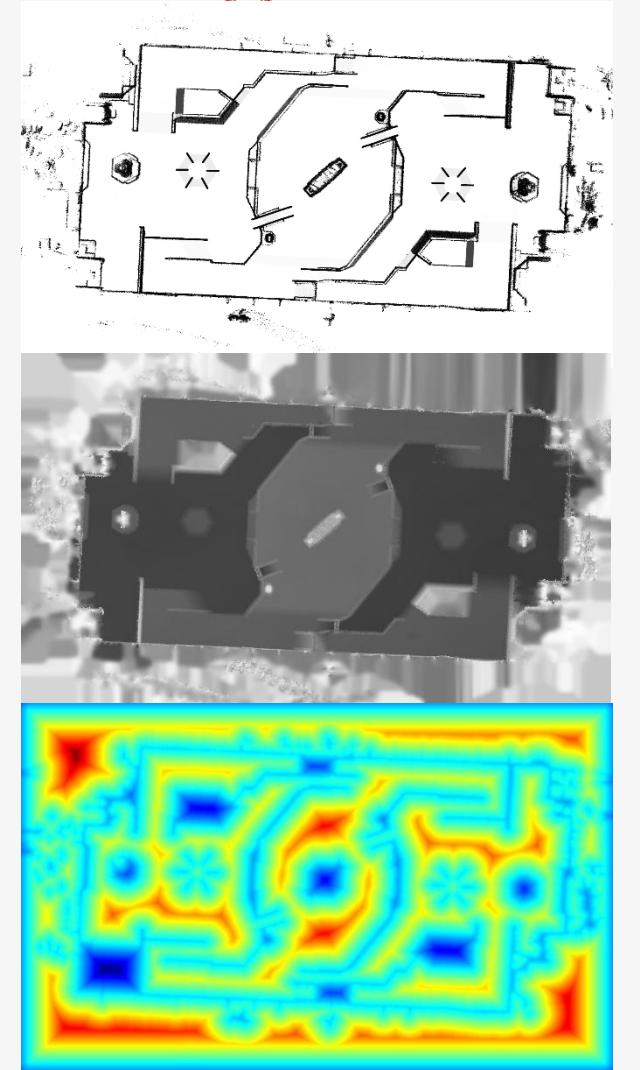
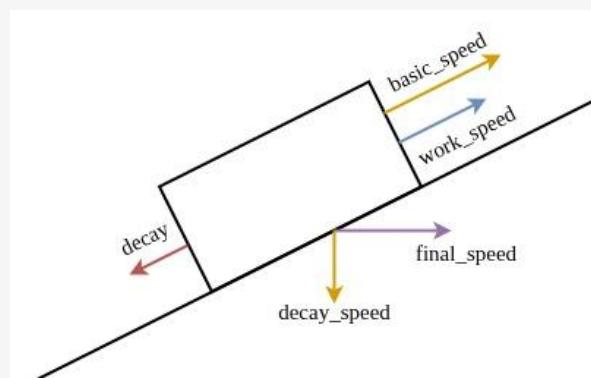
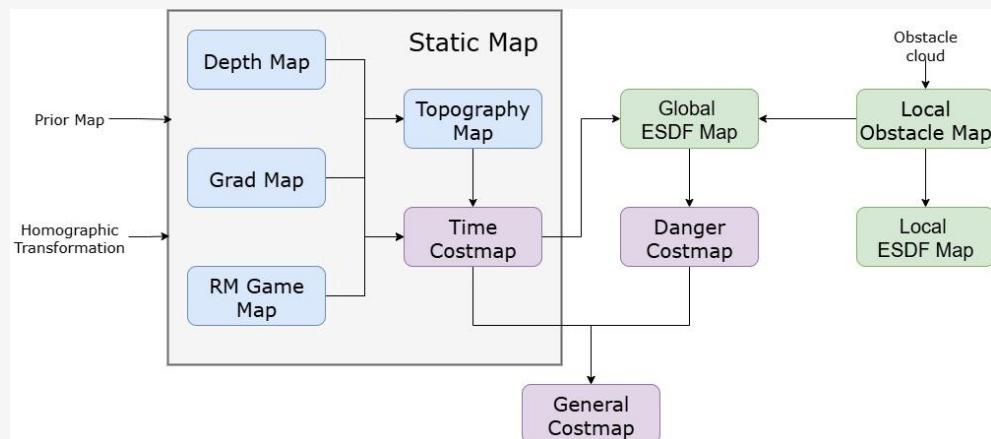
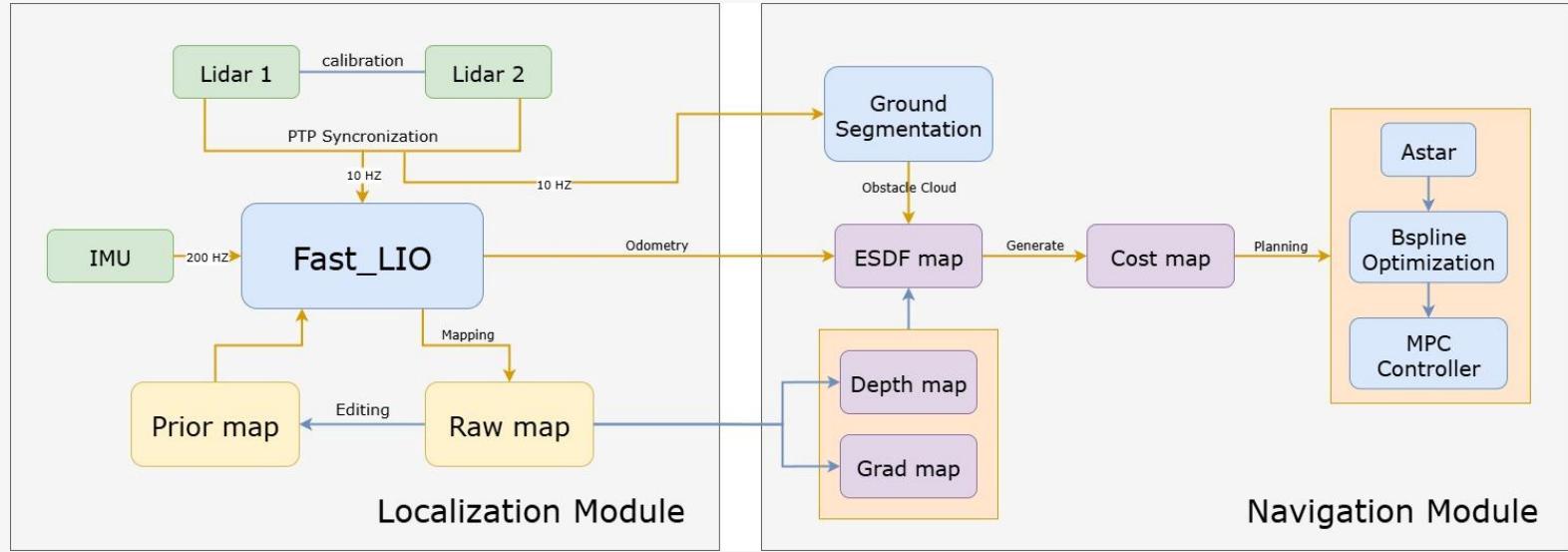


Self-Navigating on different terrains



Auto-aim System  
SJTU

# RM Award - SLAM and Navigation System



# Representation Matters for Visuomotor Alignment

**Problem:** Spurious correlations in action attention

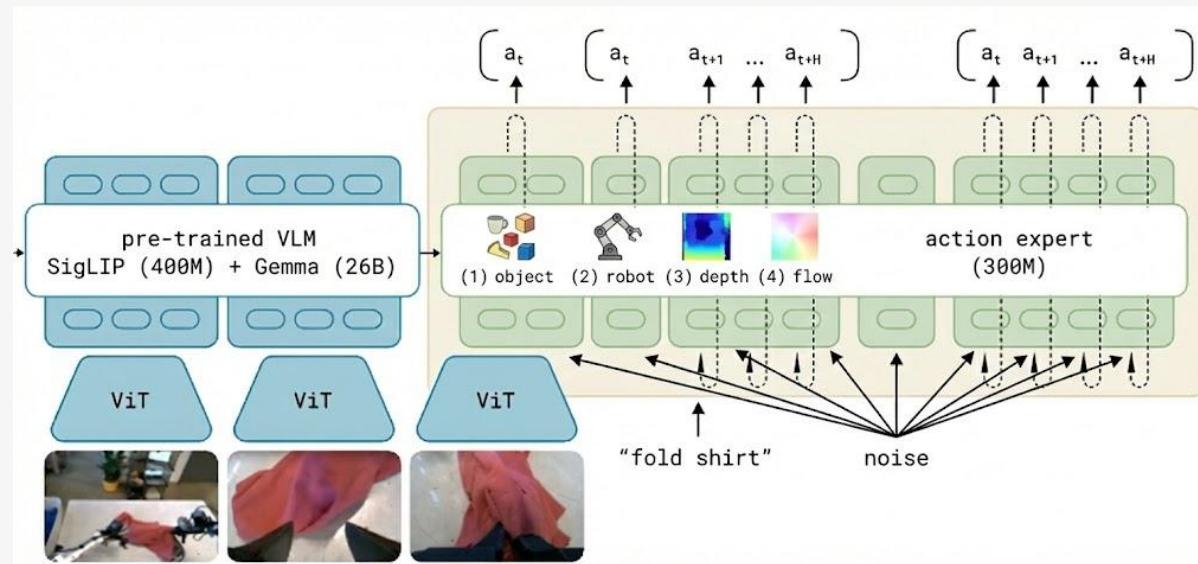


Action tokens attend to task-irrelevant regions

## 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)

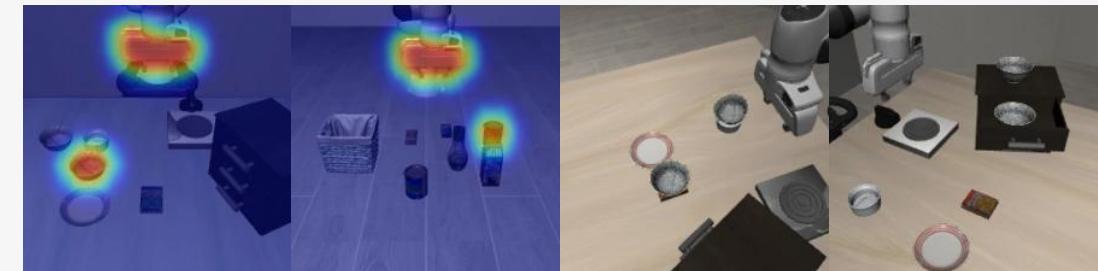
**Our Method:** Factor-Decoupled Representation Learning



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

## Preliminary Results:

Qualitative analysis on LIBERO; Task performance evaluated on RoboTwin 2.0



$\pi_0$ -attn (heatmap)

$\pi_0$ -depth (depth pred)

Model	Bottle Adjust	Hammer Block	Bin Dump	Card Relocation
$\pi_0$	71%	75%	61%	69%
$\pi_0$ -attn	99%	81%	90%	81%

Task-Level Performance on RoboTwin 2.0

