WEEK 2 UPDATE

CODY HILL • 6/2/26

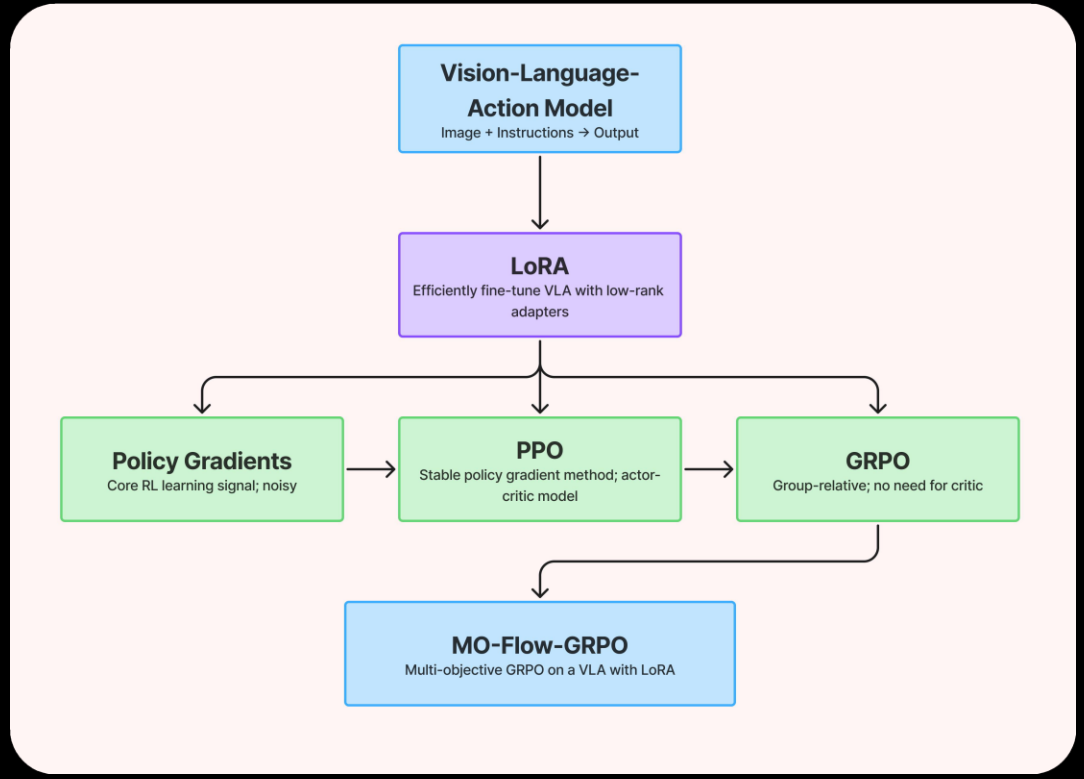
Background

- Mississippi State University
- Computer Science, Math, and Spanish
- Robot Swarms; Dr. Jones
- Robotics and Autonomy



(Holland, 2024)

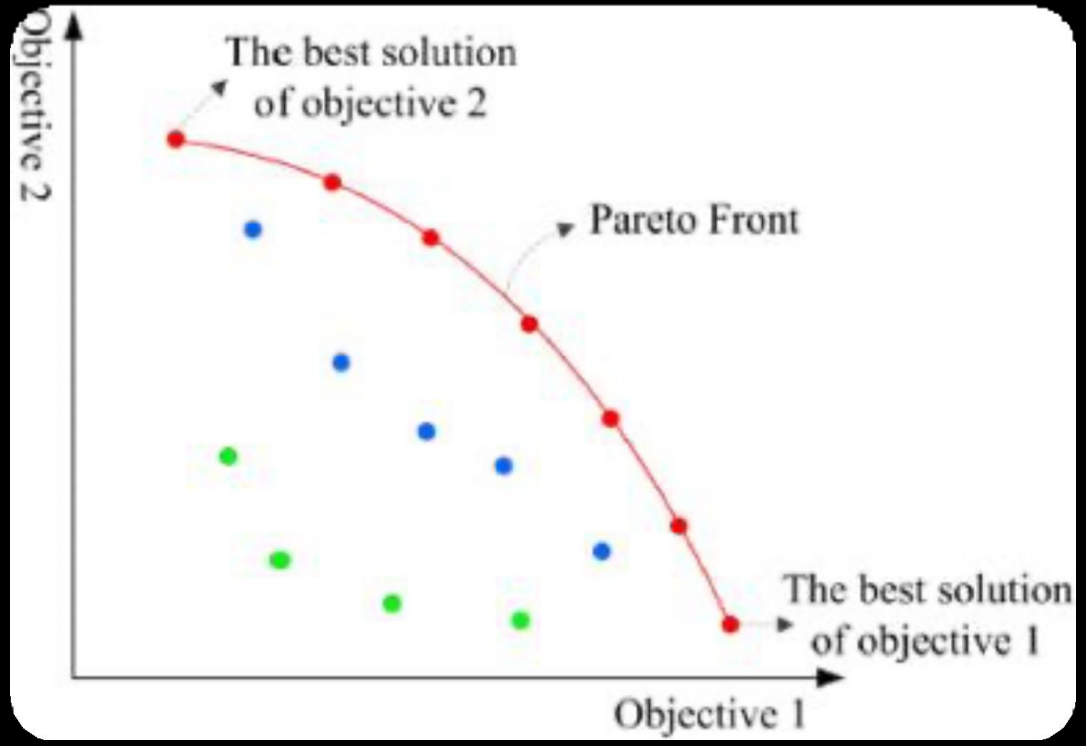
Project: The Task



Task

Take GRPO, extend it to optimize four simultaneous objectives and connect it to a flow-matching head.

Project: The Task



Challenge

- GRPO → One scalar reward
- MO-Flow-GRPO → Four rewards
- Steer between tradeoffs while staying along Pareto

Project: My Progress

- Learned VLA, LoRA, Policy Gradients, PPO, GRPO, and flow matching
- Starting work to use LIBERO environment
- Simultaneously completing robotics RL course



Project: My Plan

June 3
Set up LIBERO environment, explore SigVLA

→

June 6
Reproduce single-objective GRPO baseline

→

June 10
Task success + speed reward extractors implemented, tested

→

June 12
Smoothness and safety extractors done and tested

Complete Robot Learning course, read papers
Get up to speed on robot learning and current methods

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