

# Assignment: Compare PG, TRPO, and PPO

- Environment: 1. Mujoco <https://gymnasium.farama.org/environments/mujoco/>  
2. Box2d <https://gymnasium.farama.org/environments/box2d/>  
3. Classic control [https://gymnasium.farama.org/environments/classic\\_control/](https://gymnasium.farama.org/environments/classic_control/)  
Pick any 5 environments of your choice (try at least one from Mujoco)
- Performance comparison (reference): Run at least  $10^4$  steps  
<https://spinningup.openai.com/en/latest/spinningup/bench.html>
- Algorithms to implement and compare: Policy gradient (PG), (2) TRPO, (3) PPO-clip
  - Implement Generalized Advantage Estimator for gradient computation
  - Use **Pytorch**. Standard functions (backprop, loss function, optimizer) can be used
- Deliverables: A Zip file with
  - One Jupyter Notebook for each algorithm (total 3 notebooks). Notebooks should be self-explanatory with proper documentation. At the end, show performance graphs for each of the 5 datasets.
  - A 1-page doc file with graphs comparing all 3 algorithms on 5 datasets
- Deadline 1 (Zip file): 10<sup>th</sup> October
- Deadline 2 (A 10-minute video explaining your code): 12<sup>th</sup> October