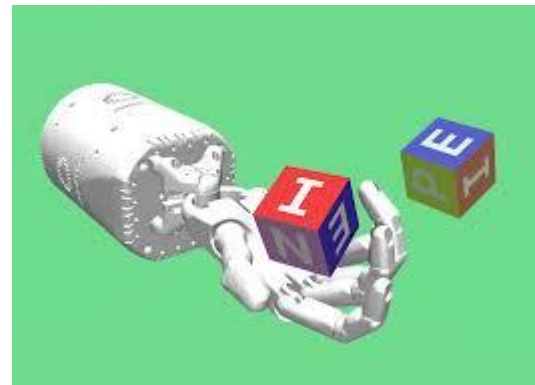# Can we teach an old robot a new trick? Open AI Robotic Hand (Robby)

Andrea Maldonado & Patrick Matthäi

Setup

- **Simulation/Physic Engine:** MuJoCo
- **Environment**: gym + mujoco-py
- **Python** 3.7
- **Frameworks**: tensorflow, tflearn, matplotlib
- **Dependencies**: pydmps, deep-rl

Challenges

**Task:** Train a simulated robot hand to throw a ball as high as possible

Challenges

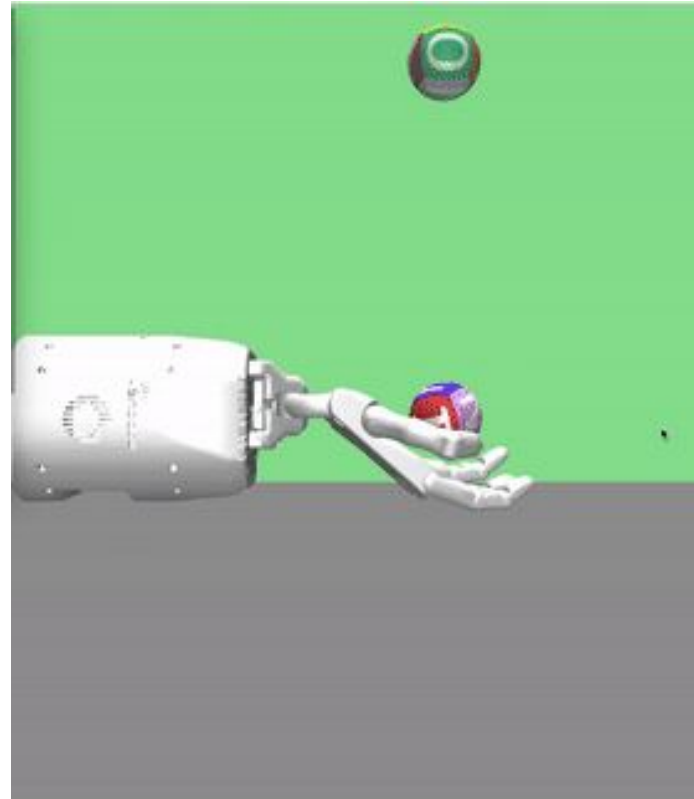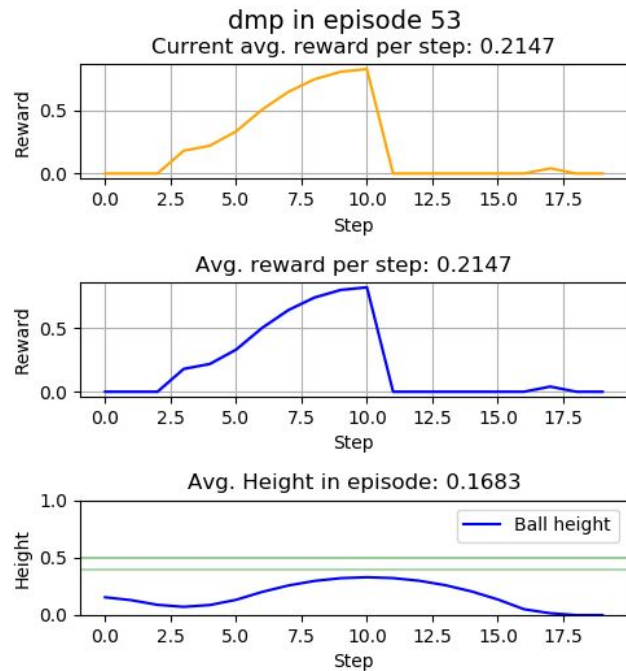**Task:** Train a simulated robot hand to throw a ball as high as possible

- Project setups (Licensing)
- New environment for this task
- Reward Design: Avoiding Cobra Effect
- Sparse Reward Problem: Promoting a throwing motion
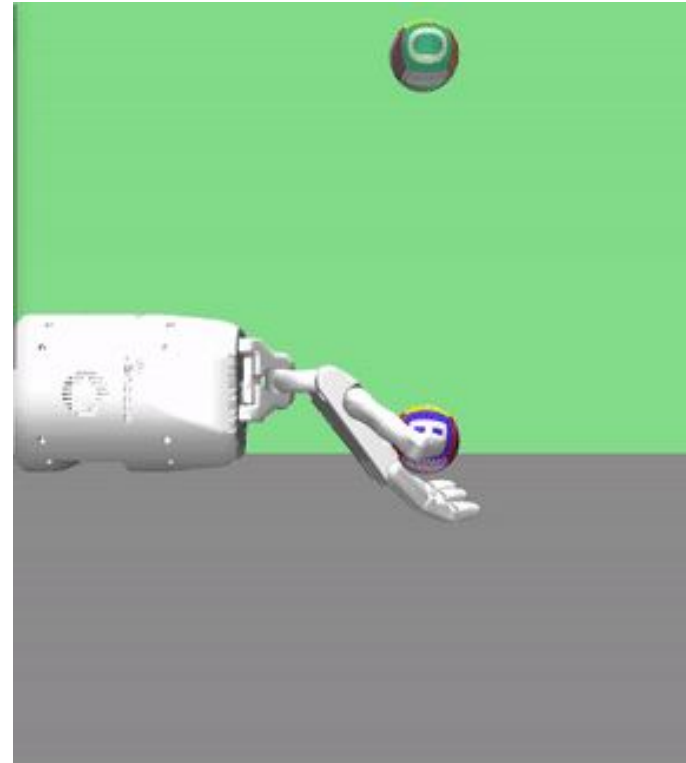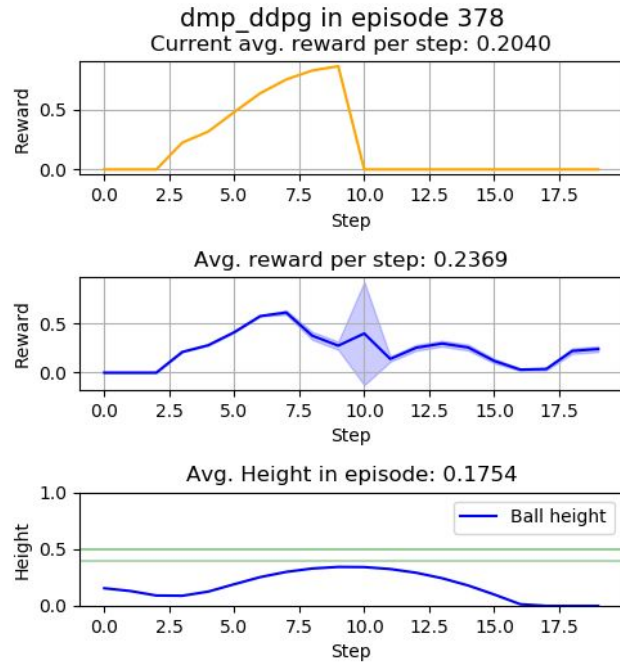- Environmental Constraints: Gravity, losing touch and physiology

Evaluation: DDPG
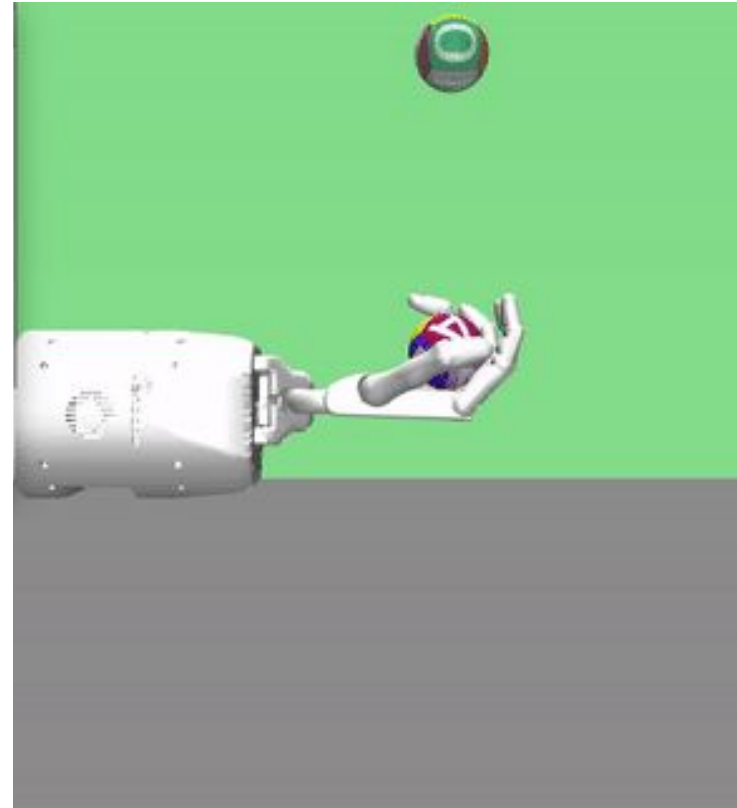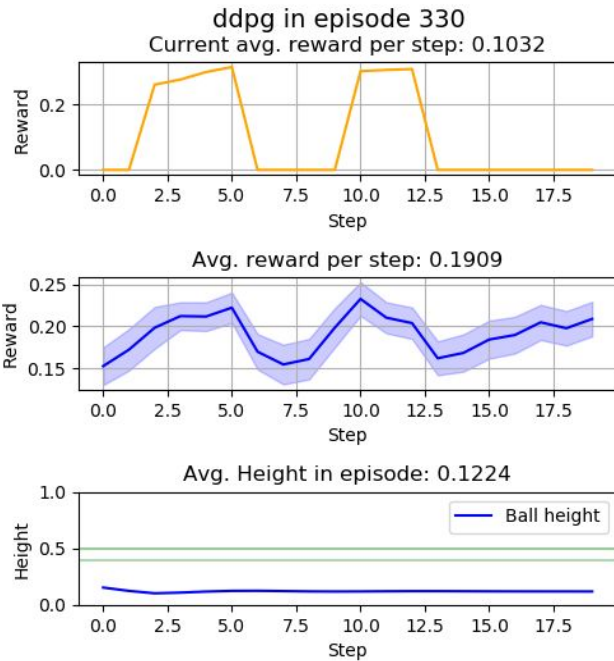
Evaluation: DMP

Evaluation: DDPG+DMP

Conclusion:

"We can teach an old robot a new trick!"

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"We can teach an old robot a new trick!"

... with your help :)

Literatur & Quellen

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