Introduction

* Robocup
* RoboCup Humanoid League
* Introduction to the Project
  + Problem
  + Proposed Solution
  + Aims and Objectives
* Report Structure

Background Research

* Reinforcement learning
* Learning Algorithms
  + Markov Decision Process
  + Q-learning
  + DDPG
  + DQN
* Neural Networks
  + Activation functions
  + Tensorflow
  + Loss
  + Gradient Descent
* Training Framework

Previous implementations

Logging and reproducibility

Development Structure

* + Structure
    - Cartpole
    - 2D Development
    - 3D Development
  + Environment definition
    - Cartpole
    - 2D Development
    - 3D Development

Results

* + Cartpole Outcomes
  + Outcome of 2D environment
  + Outcome of 3D environment
  + Reward function

Future Research

Project Evaluation

Conclusion

Future research Topics:

Empowerment

#NN cutting layers

Transfer learning

Reward function development

Policy gradients policy

Mujoco implementation

Real Robot Training