





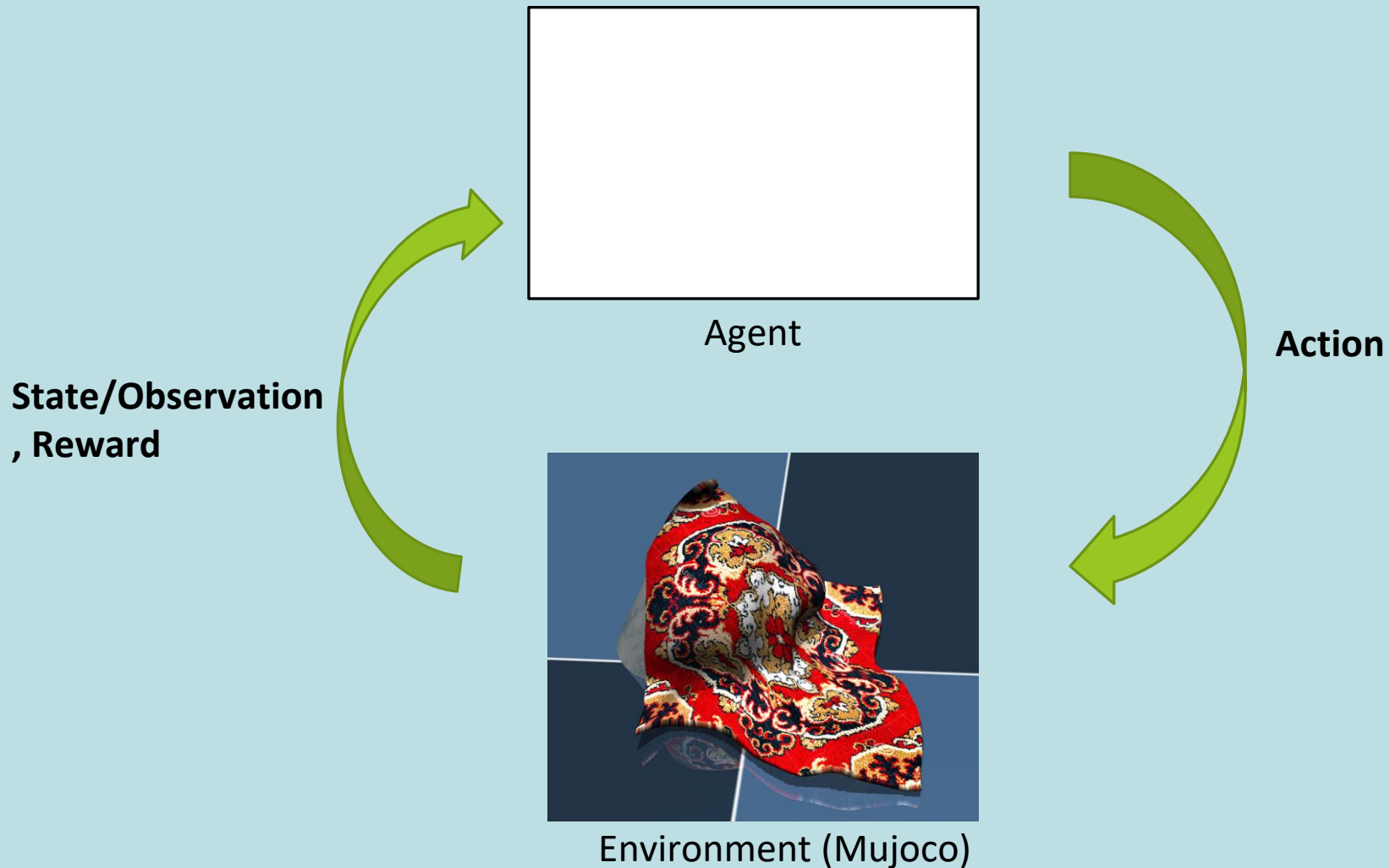
# Weekly Review

02/03/21

- **Tasks**
- Cloth manipulation using random policy  (Last week)
- Code Soft Actor Critic from scratch 
- Understand the existing repository completely  *Enough to start implementation*
- Custom Implementation : Cloth environment with SAC approach  *In progress*
- **To-Do Items for Next Week**
- Finish custom Implementation : Cloth environment integrate to SAC approach
- Prepare SAC Pipeline Explanation
- **To-Do Later**
- Define reward function and action for new use case
- Explore usage of intermediate testing on simulation before sim-to-real transfer
- Define use-case (for different type of towels (colour, texture, etc. ) / one type )
- Check the no. of episodes needed, Check computational requirements

# Cloth Manipulation – RL Problem

02/03/21



# Cloth Manipulation using random policy

02/03/21



**Observation**  
(64\*64 img)



**Reward**  
(Overlap with goal state)

Policy (state - action)=  
*Random action in a  
specific range*

Agent



Environment (Mujoco)

**Action**

Pick point and place point  
*From random pixel points  
Inside segmented mask*

# Cloth Simulation using SAC

02/03/21

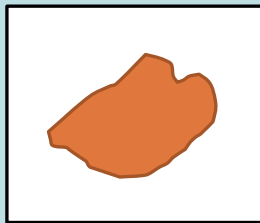
- State -> **Actor Network** -> Action
- State, action -> **Critic Network 1** -> Quality of action
- State, action -> **Critic Network 2** -> Quality of action
- State -> **Value Network** -> Value
- State, action -> **Target Value Network** -> Value

SACAgent  
(Deep Learning for policy)

Agent

Action

Pick point and place point  
From random pixel points  
Inside segmented mask



**Observation**  
(64\*64 img)



**Reward**



**Environment (Mujoco)**

# Plan

02/03/21

## Planned

- **Phase 3 : Implementation : 52 days (mid Feb- early Apr)**
  - a) Testing various simulation environments and selecting one : 13 days
  - b) Setting up the Reinforcement Learning Platform and Simulation environment : 9 days
  - c) Dataset generation on chosen simulation platform : 15 days
  - d) Perform Reinforcement Learning using PyTorch : 15 days

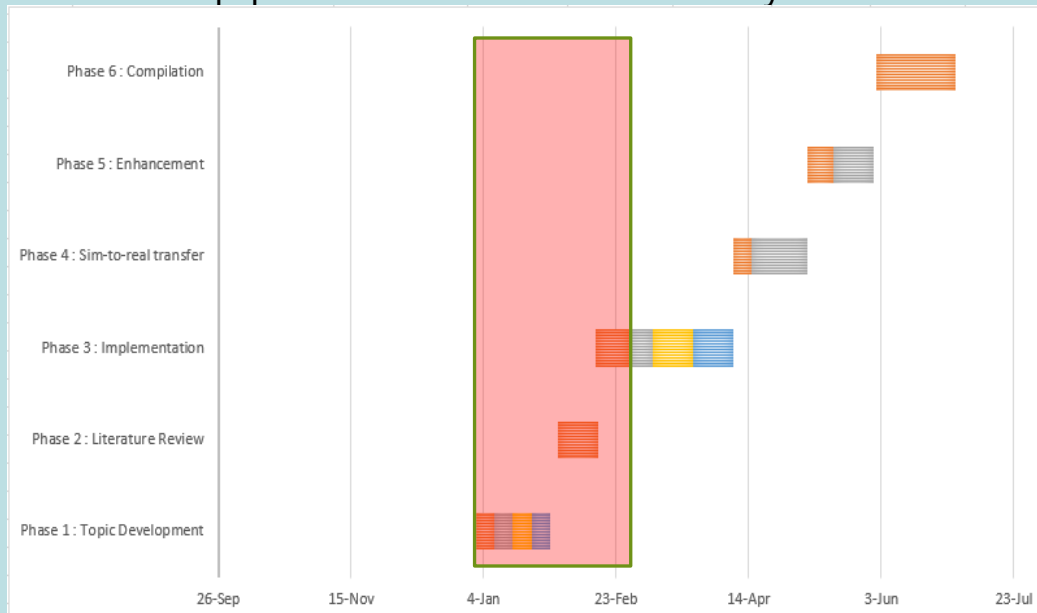
## Update

- **Phase 3 : Implementation : 52 days (mid Feb- early Apr)**
  - a) Setting up the Reinforcement Learning Platform and Simulation environment : 13 days
  - b) Prepare a custom implementation taking existing states, actions, rewards : 9 days
  - c) Redefine actions and rewards for our use case : 15 days
  - d) Test the pipeline and iterate : 15 days

# Plan





02/03/21

- Phase 3 : Implementation : 52 days (mid Feb- early Apr)
- a) Setting up the Reinforcement Learning Platform and Simulation environment : 13 days
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**THANK YOU**