

State Aggregation in Robust MDPs, A Quick Survey

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As in real world scenarios, handling large state-spaces is a challenge in reinforcement learning. Value functions resulted from such problems could be solved by set of approximation methods to yield the policy. One of those methods is state aggregation which maps states in a vicinity to a certain action.

1 Related works

1.1 RAAM

Give a **tighter** bound on performance loss by reducing sensitivity to approximation error $\epsilon(.)$.

1.2 Kernel-based RL in RMDP

Robust policy learning in case of problems with massive or continuous state-spaces. By using *kernel averagers* –as a function approximator– to:

- approximate reward function r and/or transition function P based on training state-action samples.
- approximate the value function v .