ULiège
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INFO8003-1
Optimal decision making
for complex problems
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Project

Challenge Yourself : Propose and Solve Your Own Reinforcement Learning Problem

1 Problem

Design your own reinforcement learning problem. Favor problems which are complex or have been partially covered lectures. Your report needs to formally describe your domain using 2 pages max.

2 Solution and Experiment Protocol

Design an approach to build efficient policies for your reinforcement learning domain. Your report needs to formally describe your approaches using 3 pages max. Look at the literature for reinforcement learning techniques not seen during lectures (e.g., inverse reinforcement learning, transfer learning, Bayesian reinforcement learning...). References are needed. Design an experiment protocol for assessing the performance of your approach.

At the end of this stage, you will have the problem to present together with the solution and the experiment protocol adopted to the class.

3 Experiment Protocol

Design an experiment protocol in which the performance of your policies will be assessed. Your protocol needs to include (i) a simple policy, (ii) a (near-)optimal policy and (iii) a performance measurement. Your report needs to formally describe your experiment protocol using 2 pages max.

4 IMPLEMENTATION AND TEST

Implement your domain, your approaches and your experiment protocol. You need to deliver (i) your source code, (ii) the user manual and (iii) a report which describes your results in 3 pages max. Your report needs also to explain possible improvements.