

D7.5 - Design of the benchmark tested for robotized ironing and garment folding

- Initial

The ALMA project has developed a benchmark for robotized ironing and garment folding, focusing on higher-level cognition for domestic assistance robots. The benchmark includes four validation environments, each implemented as a Gymnasium environment. These environments are popular concepts in machine learning but have been reimplemented to suit specific AML-based requirements. The benchmark tested includes Bandit-v0, GridWorld-v0, FakeIroning-v0, and Ironing-v0. The authors aim to improve the results and confidence levels of their algorithms by further integration with AML-based approaches. They aim to improve the learning of more realistic robot applications using AML and Deep Q-learning Neural Networks (DQN), a successful algorithm for Reinforcement Learning in robotics. The main contribution of this work is to serve as a baseline for future DQN methods for complex control robot frameworks, which will be extended to other domestic tasks like ironing and folding.