Bachelor/Master Thesis Reinforcement Learning Approach for Motion Control

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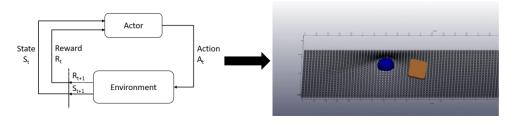59494 Soest

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Motivation

Nowadays, the use of Artificial Intelligence (AI) or more specific Machine Learning (ML) is used for plenty of applications. One promising field in this area is Reinforcement Learning (RL). There, one or multiple agents are lead to fulfil complex tasks like playing video games, flying RC helicopters or flip waffles with robots. It is not unsual, that RL approaches, often coupled with Gaming Environments (e.g. Chess, Go), achieve scores which are never reached before by human beings. RL is characterised by combining several disciplines from physics simulation, high-level language programming to artifical neuronal networks and is so a perfect area for engineers.

Task

During the offered bachelor/master thesis, tasks in the area of motion control for the Peristaltic Sorting Machine (PSM) shall be developed. A general approach is to observe the desired task, create a suitable environment, chose an appropriate RL structure and train the agent. In all these subtasks different skills will be encountered and improved.

Requirements

Strong affinity in innovative and modern technologies. Knowledge in high-level language programming (e.g. Python, C++ or similar).
We are looking for master students of the South Westphalia University of applied sciences who want to complete their master thesis.