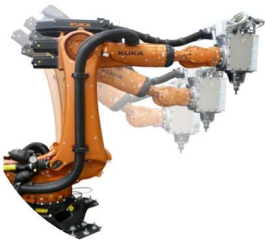


Machine learning of robot dynamics

Current status

Industrial robots are increasingly being used for milling and are characterized by low investment costs, a large work space and high flexibility compared to conventional machining centers. In order to compensate for external forces due to the milling process, the robot dynamics need to be precisely modelled and simulated.



Scope of this work

Within the scope of this work, the existing KUKA robot shall be modelled and simulated with the *DART* framework¹. Additionally, the simulation shall provide simulation data for the training of an existing machine learning algorithm based on Gaussian process regression in order to model the robot's stiffness behaviour.

Requirements

- Strong interest in robotics for production processes and machine learning algorithms
- Knowledge in C++ development with, ideally for robotic applications
- Ideally knowledge in the field of robot dynamics and mechanics
- Ideally experience with software development with *Microsoft Visual Studio* and Cross-Compilation for *Windows Subsystem for Linux (WSL)*
- Ability to work independently and solution-oriented

Contact

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¹ <https://github.com/dartsim/dart>