Machine Learning in the Context of Industry 4.0 for Tool Condition Monitoring

Contact

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Work description

Monitoring systems in machine tools detect tool wear and failure by analyzing process sensitive information such as drive torque or spindle acceleration. Identifying sensitive information and parameterizing monitoring systems, however, remains a challenge. By analyzing similar machines or processes information can be mined that enhances the parameterization process and improves system performance.

Possible Tasks:

- Develop a measure of similarity for machines in terms of tool condition sensitive information
- Implement, train, and evaluate machine learning methods in Matlab for tool wear/failure detection
- Literature research on the transfer of knowledge among machine tools for machining operations