

With the development of automated task planning in industry, the requirements for a correct estimation of the parameters of individual operations, especially their lead time, are increasing. This thesis is discussing various methods of estimating the lead time for new tasks automatically from previously executed tasks. The first part of the thesis focuses on standard regression algorithms and their modifications according to the suitability for this problem. The second, main part of the theses, focuses on solutions using deep neural networks, which are able to process unstructured data, such as textual descriptions of operations. The final results show that deep learning achieves a good level of prediction, especially for new types of operations. Its practical use can therefore be recommended as an estimate for planning new products, especially in highly dynamic environments.