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## **APPLICATION OF ARTIFICIAL INTELLIGENCE FOR SMALL PROJECTS**

**Abstract.** The introduction of computer technologies in production can significantly increase production efficiency and provides for increased productivity, improved quality and minimization of production losses. Among these technologies, such areas as the development of artificial intelligence (AI), machine learning (ML) and Big Data analysis play a huge role.

Initially, AI is based on the analytical processing of data using certain mathematical models. These models may differ, but one of their properties remains unchanged, depending on the information received, the output may be different. This can happen both during the training period and during the work of the AI. Machine learning is the process of building the final mathematical model of information processing, that is, it affects how the AI will receive and process information, and the database is the data array with which the AI interacts, as a rule, this array is so large that it cannot be processed using other methods of algorithmization, or it is not advisable to do so.

The standard model of data processing and model building or AI training consists of the following steps: data collection, data cleaning; model selection, simulation, and model validation; use of the model in production.

An example is the work of AI in the field of equipment operation. When using a maintenance strategy based on data obtained from various sources, a technique for maintaining and operating equipment is built. Thus, it can be judged that for the use of AI in production, it is necessary to have a large amount of data and the ability to evaluate the result of work that depends on this data. Based on the analysis of incoming and outgoing data, you can choose a more suitable AI model or build your own.

Now, there are several ways to use AI for your own purposes. Consider the extreme cases: on the one hand, it is to develop your own AI; the second is to use AI that is freely available. The first way, of course, will require significant efforts to develop and implement the AI model itself. The second one has a much lower entry threshold, is gaining significant distribution primarily in the field of entertainment, text to picture platforms, deep fake technology, and more specialized in the form of translation technology. However, these are narrowly niche approaches that are not suitable for use in solving a specific problem in a specific enterprise. In the case of an enterprise, it is recommended to use the Python programming language and specialized libraries for it. This is where the project (cloud service) Colaboratory (<https://colab.research.google.com>) and the TensorFlow or PyTorch libraries containing various AI models come to the help. Detailed documentation on the use of this software can be found on the Internet, because depending on the task, the solution may be completely different. The use of a cloud service and already developed and constantly improving AI models has a low entry threshold and allows users with little programming knowledge to develop problems using AI.

At the same time, the use of AI in manufacturing, for example, in the operation of electric motors, makes it possible to: reduce maintenance costs by 15-50%; reduce operating costs by 10-20%; increase productivity up to 15%.

**Conclusions.** AI allows you to optimize the production process through the introduction of intelligent control systems/platforms/software. These systems will receive data, process information and find an optimized solution. All interested persons, even with little knowledge of programming languages, but with a clearly defined task, initial data set and a reference result or the ability to obtain it, can use AI with the help of freely available solutions.