

ABSTRACT

Thesis: 109 p., 21 fig., 7 tabl., 2 append., 30 sources.
MACHINE LEARNING, BAYESIAN METHODS, GENERATIVE MODELS,
VARIATIONAL AUTOENCODER.

Object of research: generative model of machine learning which is using Bayesian inference.

Subject of research: methods for reconstruction data distribution, allowing to generate new data from it.

Purpose: to study the peculiarities of the Bayesian approach in machine learning, to construct a generative model, to analyze the results of work under various hyper-parameters of the model.

Thesis is devoted to the creation of a generative model. This work is relevant, since this model allows to approximate distribution of the data and generate new data from it. The model is implemented using Bayesian methods in neural networks. The paper analyzes possible neural network architectures, methods of their training. The classic and conditional model of the variational autoencoder were constructed and analyzed the dependence of the quality on the size of the hidden variable space.