

ABSTRACT

The master's thesis contains: 90 p. , 12 fig., 28 tabl., 21 sources and 2 appendices.

The topic of this master's thesis is "Game theoretic analysis of schedulers in heterogeneous multiprocessor environment".

The work is relevant because the problem of efficient computing exists and many studies are conducted in this direction with the application of different approaches, including the theory of games.

The purpose of this study is to search for the equilibriums and solutions of the matrix multiplication game in a distributed environment with two users.

The research is carried out by the method of scientific modeling of the process of block multiplication of the matrix. This work is based on a fluid model, which is considered for a continuous case, is further reduced to a discrete model. At the second stage of the research, experiments are carried out with the help of the developed simulation system, which allow us to estimate the accuracy of constructed mathematical model and to investigate the game for the presence of equilibrium.

In this paper schedulers of type extr-extr were analyzed, developed a simulation system for conducting experiments, and examined alternative approaches to finding optimal strategies.

The results of this work can be used in the development of a distributed computing system. Further research can be conducted in the direction of the analysis of standard operations of BLAS linear algebra standard.

SCHEDULERS, MATRIX MULTIPLICATION, GAME THEORY, CLOUD COMPUTING, EQUILIBRIUM.