UNIVERSITY OF ZAGREB
FACULTY OF ELECTRICAL ENGINEERING AND COMPUTING

Zagreb, 11 March 2022

BACHELOR THESIS ASSIGNMENT No. 688

Student:	**Mihael Miličević (0036521706)**
Study:	Electrical Engineering and Information Technology and Computing
Module:	Computing
Mentor:	prof. Domagoj Jakobović

Title: **Evolving cache replacement policies using grammatical evolution**

Description:

Describe the basic idea of evolutionary algorithms and the use of context-free grammars in computer science. Explore the paradigm of grammatical evolution as a machine learning method based on evolutionary algorithms. Define the page replacement strategy problem and describe popular heuristic page replacement strategies. Extend the existing framework for evolutionary computation with new representations in the form of grammatical evolution. Apply the realised grammatical evolution model to the page replacement strategy problem. Experimentally determine the efficiency of the implemented method with respect to the existing parameters and compare the obtained solutions with existing heuristic strategies. Include the source codes, the obtained results with necessary explanations and the used literature with the thesis.

Submission date: 10 June 2022