Brno University of Technology - Faculty of Information Technology

Department of Computer Systems   Academic year 2016/2017

Bachelor's Thesis Specification

For: **Bielik Marek**
Branch of study: Information Technology
Title: **Evolutionary Analogue Amplifier Optimisation**
Category: Artificial Intelligence

Instructions for project work:
1. Perform a study of selected types of analogue amplifiers.
2. Take up with possibilities of electronic circuit simulation using SPICE.
3. Take up with basic principles of optimisation using evolutionary algorithms.
4. Propose a solution for the optimisation of selected amplifier circuits by means of evolutionary algorithm.
5. Perform several sets of experiments in order to demonstrate performance and quality of the proposed method.
6. Evaluate the results obtained and discuss potential possibilities for the future work.

Basic references:
- According to the recommendation of the project supervisor.

Requirements for the first semester:
- Fulfilling items 1 to 3 of the assignment, demonstration of a prototype system from item 4.

Detailed formal specifications can be found at http://www.fit.vutbr.cz/info/szz/

The Bachelor's Thesis must define its purpose, describe a current state of the art, introduce the theoretical and technical background relevant to the problems solved, and specify what parts have been used from earlier projects or have been taken over from other sources.

Each student will hand-in printed as well as electronic versions of the technical report, an electronic version of the complete program documentation, program source files, and a functional hardware prototype sample if desired. The information in electronic form will be stored on a standard non-rewritable medium (CD-R, DVD-R, etc.) in formats common at the FIT. In order to allow regular handling, the medium will be securely attached to the printed report.

Supervisor: **Bidlo Michal, Ing., Ph.D.**, DCSY FIT BUT
Beginning of work: November 1, 2016
Date of delivery: May 17, 2017

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