Classification of Diploma Thesis – opponent

Author of classification:  doc. MSc. Donald David Davendra, Ph.D.
Supervisor:  prof. Ing. Ivan Zelinka, Ph.D.
Opponents:  doc. MSc. Donald David Davendra, Ph.D.
Title:  Grammatical Evolution Based on a Platform Independent Language
Thesis version:  1
Student:  Bc. Tomáš Machala

1. Meeting the requirements of the thesis assignment.
   The main aim of the thesis is to develop a Grammatical Evolution based on a platform independent language. Three different algorithms of Genetic algorithms, Differential Evolution and Self-Organising Migrating algorithms were developed. Additionally, chaos based stochasticity was embedded in the algorithms to improve its performance.

   This thesis is of a very high quality and meet all the criteria for the thesis assignment.

2. Thesis technicality evaluation.
   The thesis is drafted in an excellent form. The language, presentation of ideas, background research is exceptional, clear and concise. There are extremely few typographical errors, the arguments are clearly presented in an unbiased form.

3. Results evaluation of the thesis.
   The thesis meets all the requirements of the assignment. The developed software meets all the requirements of platform independence, is very well documented with a detailed user manual.

4. Evaluation of the new findings contribution.
   This thesis introduces new findings in the area of application of Grammatical Evolution with Differential Evolution and Self-Organising Migrating algorithm. Secondly, the application of chaos stochasticity is a original research input in the thesis.

5. Utilization and selection of information sources.
   This thesis is extremely well documented, with very clear and precise descriptions. The references are adequate and reflect the current state-of-art.

6. Question for the defense of the thesis.
   Please explain that due to the nature of Grammatical Evolution at run time compilation, which of the two platforms which be better for GPU implementations; CUDA or OpenCL?

7. Summary evaluation.
   The work is of an excellent level, and all stated aims were met and exceeded by this thesis. The student was exemplary in his work for this thesis.

Overall classification:  excellent

Ostrava, 22.05.2014  

doc. MSc. Donald David Davendra, Ph.D.