EÖTVÖS LORÁND UNIVERSITY

FACULTY OF INFORMATICS

Thesis Registration Form

Student's Data:

Student's Name: Abdin Hossameldin

Student's Neptun code: BELNRM

Course Data:

Student's Major: Computer Science BSc

I have an internal supervisor

Internal Supervisor's Name: *Zoltán Gera*

Supervisor's Home Institution: *ELTE IK*

Address of Supervisor's Home Institution: *1117 Bp. Pázmány Péter sétány 1/C*

Supervisor's Position and Degree: *tanársegéd, MSc Computer Science*

Thesis Title: Log analyzer for real-time DSP scheduling framework

Topic of the Thesis:

(Upon consulting with your supervisor, give a 150-300-word-long synopsis os your planned thesis.)

1 Introduction:

Logging various information regarding different aspects of projects is vital to measure the sanity and the behavior of a system. Unfortunately in many cases especially in a case of a huge amount of information to log, the advantage turns into an issue that takes time and effort from the developer(s) to be able to check the sanity of a created system or a program and from that point the logging becomes a burden which takes from the efficiency of the program without giving back the wanted/requested quality of results. Also the debugging in a real-time system is not possible, the log analyzing is the only option in such a system. From the issue described above, the idea of a log analyzer was born. The log analyzer will support the DSP (Digital Signal Processing) framework PipeRT which is developed at ELTE University.

2 General information about PipeRT:

PipeRT is a hybrid scheduling and data flow framework for DSP applications, which offers high performance and easy to use framework. (for more info: https://github.com/gerazo/pipert/blob/master/README.md)

3 The responsibility of the log analyzer:

The log analyzer should be a separate API which can communicate with the framework to have a low delay live sanity checking for the system, it should be able to represent the pipeline of the framework visually and it should spot the bottleneck in the system if any. The analyzer should generate statistics that can reflect the status of the system as a whole.

4 Goal:

Offering the developers of DSP applications who uses the PipeRT framework a detailed yet understandable representation of their development's pipeline. The analyzer is supporting the measurement oriented approach of the development.

Budapest, 2020.11.18.