4th Year EIE Lab Project Meeting Minutes
For Software Development Groups

Meeting Date: 5 September 2016

Attendance: Dr. S. Levitt, Prof. S. Hazelhurst, *J. Zeegers, J. Gage, J. Allingham, P. Cresswell, M. Bezuidenhout ,
T. Amoretti, S. Friedman, F. Nieuwoudt*
Apologies: -
Absent: -
Minutes noted by: J. Zeegers
Meeting at School of Electrical Engineering Boardroom,
University of Witwatersrand

Opening 12h15

Project Descriptions & Progress:

Project 1 - Dynamic firewalls for virtual private clouds (M. Bezuidenhout, T. Amoretti)

- The project is to create a firewall with different levels of authorities. The higher the level of authority, the more firewall rule changes can be authorised.
- This group will attempt to communicate between two host computers and then test whether the firewall rule changes occur.
- It was suggested that the testing should be done between two separate host machines rather than between a host machine and a virtual machine

Project 2 - Pipeline creation and visualisation for scientific workflows (J. Zeegers, J. Gage)

- The project involves capturing the inputs and outputs of a scientific workflow and storing it for reviewing it in future. This software must also automatically visualise the workflow.
- It was found that the capturing of the workflow can be achieved using the "Audit" system call function in Linux.
- The visualisation can be created using the "Graphviz" tool. The automation to be achieved with Python using the "Pygraphviz"

Project 3 – Detecting Epistasis using deep learning (P. Cresswell, J. Allingham)

- Epistasis is non-additive or masking effect caused by genes interaction. This project involves using deep learning to detect Epistasis in a population dataset.
- The set-up of the development environment has been completed.
- The goal for the week is to set-up input and output scripts.
- The main goal of this project is to optimise the accuracy of the neural networks rather than the time it takes.

<u>Project 4 – Gamifying DevOps (S. Friedman, F. Nieuwoudt)</u>

- This project involves creating a reward system for software developers in order to improve the quality of developed software.
- The first task is to create a simple points system which will be based on information accessed from a build server. This is the goal set for this week.
- The next task is to create a more complex system such as a leader board.

General Comments

- Each group must spend at least 2 days working at Wits
- There is working space in D-Lab for at least two students. Dr. Levitt to investigate.
- The minutes of each group meeting must be attached in the appendix of our reports.
- Next week's meeting: Monday 12 September at 12:15 at the same venue (must finish by 13:00).

Meeting Closed 12h50