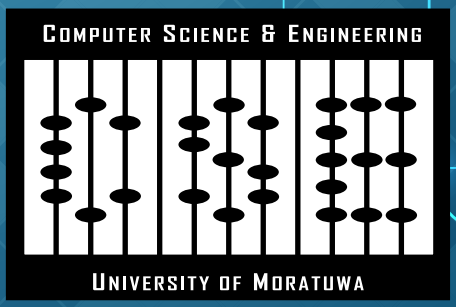
PROCEEDINGS OF THE CSE SYMPOSIUM 2014



Department of Computer Science & Engineering

University of Moratuwa

05th September 2014

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The Editorial – CSE Symposium 2014

We report with immense pleasure the successfully conduct of the CSE Symposium 2014, today, 5th September 2014, at the Department of Computer Science and Engineering (CSE), University of Moratuwa. CSE Symposium 2014 has given the opportunity to the CSE students of the intake 2010 to publish and present their work carried out during the module Software Engineering Project, in 2013. Each student of the cohort submitted a research paper based on their work entering into a stiff competitive process to select the most outstanding papers out of the best. Out of 100 high quality papers we maintained a very competitive acceptance rate of 13%. This was a major challenge; as it is evident from the outcome the selection was highly competitive and as a result many good papers did not make the final cut. We appreciate the hard work put by each and every student in their projects and for compiling a set of high quality research and development papers. We hope that the 13 papers included in this proceeding convey high impact, tech savvy and innovative software engineering projects carried out by those CSE undergraduates during their Semester 5 studies.

The first paper titled "Adapting General Purpose Platform-as-a-Service for Customized Product Deployment" presents the design and implementation of a game server. The author has tried to address some of the limitations in an existing system by porting the server to be hosted in a commercial PaaS (*Platform-as-a-Service*) with cloud computing.

An Android application that uses optical character recognition (OCR) to automatically read the title of a book from its cover is presented in the second paper titled "An Android application to retrieve information on Books". The application uses Tesseract OCR engine to read the text and OpenCV image-processing library to process the image to make it more suitable for OCR.

The third paper gives details of an extension for MS Windows network monitoring that improves system security and application accountability of Windows processes. It also helps to keep track of the amount of bandwidth used by each process and the paper is titled as "Application Based Extension for Windows Network Monitor Widget".

The next paper titled "Automator – Location and Battery Level Based Profile Changer, Alarm and SMS Sender" presents a third party customizable and user friendly software developed for the Android operating system. The application takes the location of the device from GPS and changes settings of the device based previous user defined preferances.

The next paper proposes a solution to create in-app input methods and rendering in native language applications. This paper is titled as "Creating Soft Input Methods for natively Unsupported Languages in Android Operating System" and presents an application and case results by considered Sinhala as a native language.

Another user friendly Android application is presented in the next paper titled "Easy Tuner 1.0 - Guitar & Violin Tuning Application". As the title implies this paper discusses the design and implementation details of a guitar and violin tuning software aimed at supporting any novice user interested in learning and playing those music instruments.

The next paper titled "Extensions for Open Office Calc" presents the implementation of two new functions as extensions for Apache OpenOffice Calc application. One function is Newton Raphson function, which gives approximate roots of a real valued function. The other function is Resistor colour code calculator, which calculates resistance value of a resistor according to its colour code.

The next paper titled "Improving the Usability of gaKnn Framework" proposes usability and performance improvements for the gaKnn framework, which is an implementation of the K nearest

neighbour classification (KNN) algorithm, combined with a genetic algorithm based optimizer. The author has introduced three modules for the gaKnn framework namely an efficient csv file reader and writer module, a large dataset module and a KNN regression module.

An approach to integrate Moodle with Facebook to increase the effectiveness of Moodle usage is discussed in the next paper "Moodle Notifications through Facebook Messages". In this paper, the author suggests a method where users receive Facebook notifications for all the registered courses in Moodle; dissemination of up-to-date course activities in an easily accessible manner has been the main focus of this work.

The next paper is titled "Next Generation Word Processors: A generalization of architecture of EasyTuteLO Extension". Here the author has discussed an approach to add a knowledge component to a word processor by providing a mechanism to interact with existing computational and knowledge engines.

Another Android application is presented with the title of "Operate Computer from Android Device via Bluetooth". The author has explained the design and development of AndroMouse, which is an Android user interface with functions for controlling a computer device remotely.

A user friendly graphical interface to make plot manipulation in Octave, which is a mathematical analyzing & computing tool, is presented with the title "Qt Widget to Manipulate Plots for Octave Users". This widget supports to change the plots, their colour, labels, etc. in an interactive manner.

The last paper discusses the design and implementation of an interesting Android application titled "Water Community: A Web Based Android Application for Sharing and Updating Received Water Issue Complaints". This software application also gives the ability for such a community to improve efficiency and supervision of their routine work processes.

We like to thank everyone who helped to make this effort a success. Volunteer reviewers from a range of international universities, research institutes and the industry helped in selecting the best set of papers from the submissions; without their support this would not have been possible. Not only did the Head of Department and the academic staff of the Department of CSE support this event to be successful, but also the effort to develop the skills and competencies of students to carry out these outstanding projects over the years should also be acknowledged. Last but not the least we appreciate the hard work of students as Programme and Organizing committee members and all others who helped to make this a success. While wishing all the authors who submitted a paper the very best in their future research, we are looking forward for another great CSE Symposium in 2015.

The Editors

Dr. Indika Perera
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05.09.2014
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