

**WURFL DETECTION ENGINE USING  
COSINE STRING SIMILARITY ALGORITHM**



**INSTITUT PENGURUSAN PENYELIDIKAN  
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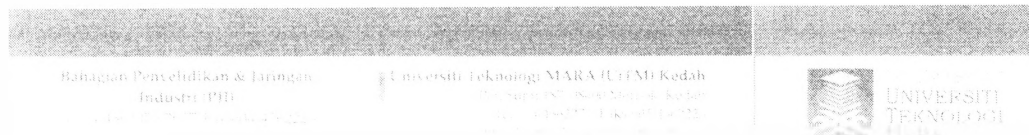
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**NOVEMBER 2013**

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# 1. Letter of Offer (Research Grant)



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600-UITMKDH (PJI 5/4/1/28/12-  
17 Mei 2012

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Tuan

## KELULUSAN PERMOHONAN DANA KECEMERLANGAN 01/2012

Judul Projek	Cosine String Similarity (Coss) For Heterogeneous Device in Cloud Computing
Kod Projek	600-UITMKDH (PJI 5/4/1/28/12)
Kategori Bajet	Kategori B (2012)
Tempat	01 Jun 2012 – 31 Mei 2013
Jumlah peruntukan	RM 1,500.00
Pensyarah	Encik Illiasak Ahmad

Dengan penuh keremahmatan perkara di atas adalah dirujuk

Sukacita dimaklumkan bahawa pihak Universiti telah meluluskan cadangan penyelidikan tuan untuk membiayai projek penyelidikan di bawah Dana Kecemerlangan UiTM

Bagi pihak Universiti kami mengucapkan tahniah kepada tuan kerana kejayaan ini dan seterusnya diharapkan berjaya menyiapkan projek ini dengan cemerlang

Untuk tujuan mengemaskini pihak tuan adalah diminta untuk melengkapkan semula kertas cadangan penyelidikan sekiranya perlu mengisi borang setua temua projek penyelidikan dan menyusun perancangan semua bajet yang baru seperti yang diluluskan

Sekian. Terima kasih

*"Transformasi Berkualiti Ke Arah Kecemerlangan"*

Yang benar

PROF. MADYA DR. HAIDAR DZIYAUDDIN  
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## 2. Enhanced Research Title and Objectives

Original Title as Proposed:

**Cosine String Similarity (CoSS) for Heterogeneous Device Detection in Cloud Computing**

Improved/Enhanced Title:

**Wireless Universal Resource File (WURFL) Detection Engine Using Cosine String Similarity Algorithm**

Original Objectives as Proposed:

1. To develop a mathematical model for device heterogeneity detection
2. To create a test-platform for device heterogeneity recognition

Improved/Enhanced Objectives:

1. To develop, apply and implement Cosine String Similarity algorithm in WURFL detection engine
2. To evaluate the performance of Cosine String Similarity in detecting the mobile device capabilities based on accuracy and processing time.

### 3. Report

#### 3.1 Proposed Executive Summary

In a cloud computing environment, a device can be varied from a high-end computing workstation to mobile devices like smart phone or PDA. To respond efficiently to such diversified environment, a cloud-based system must possess mechanisms that allow applications requested delivered fit according to the client device's characteristics and capabilities.

Due to the rapid changes in Information Communication Technology (ICT) devices such as mobile phones, TVs and personal computers have different capabilities to support various file formats of multimedia contents. Therefore, in order to help these devices, with different processor speed, memory size, storage size and power, to be able to receive the appropriate content, the cloud must have a mechanism that support multimedia adaptation capability.

To solve this issue, we proposed a method to help the cloud provides a suitable content for devices. Our method is based on three stages: 1) define the problem formulation for device heterogeneity; 2) model a mathematical equation for device heterogeneity detection; 3) develop a cloud-based device heterogeneity detection algorithm.

At the end of this research, we will provide a device heterogeneity detection algorithm that provides accurate information in resolving the heterogeneous device detection issues.