A MODEL FOR POWER EFFICIENCY OF MOBILE DEVICES THROUGH LIGHTWEIGHT METHOD LEVEL COMPUTATIONAL OFFLOADING

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DOCTOR OF PHILOSOPHY

UNIVERSITI MALAYSIA PAHANG

SUPERVISOR'S DECLARATION

We hereby declare that we have checked this thesis and in our opinion, this thesis/project* is adequate in terms of scope and quality for the award of the degree of *Doctor of Philosophy in Computer Sciences.

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STUDENT'S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citation which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

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Dedicated to

“My Mom and Dad (Late)”

I learned from my Mother: “Where there is a will there is a way”

&

I learned from my Father: “Always do the best job, your reputation worth more than a quick profit”

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LIST OF ABBREVIATIONS

3D	Three Dimensions
3G	Third Generations
4G	Fourth Generations
ADB	Android Debug Bridge
AMOLED	Active Matrix Organic Light Emitting Diode
AP	Access Point
API	Application Programming Interface
AWS	Amazon Web Services
BTS	Base Transceiver Station
BW	Bandwidth
CALEEF	Context Aware Light Weight Energy Efficient Framework
CasCap	Cloud Assisted Context-Aware Power Management
CC	Cloud Computing
CDB	Context Detection Block
CEO	Chief Executive Officer
CF	Cyber Foraging
CI	Confidence Interval
CPU	Central Processing Unit
DiET	Distributed Execution Transformer
DOCs	Documents
DPM	Dynamic Power Management
DuT	Device under Test
EC2	Elastic Cloud Computing
ECC	Energy Consumption Cost
ECC	Elastic Cloud Computing
EDGE	Enhanced Data for GSM Evolution
ET	Execution Time
FA	Fidelity Adaptation
FTP	File Transfer Protocol
GB	Giga Byte
GHz	Giga Hurts

GPRS	Global Packet Radio Service
GPS	Global Positioning System
GPU	Graphical Processing Unit
GSM	Global System for Mobiles
HTC	High Tech Computer Corporation
HTTP	Hypertext Transfer Protocol
I/O	Input Output
IaaS	Infrastructure-as-a-Service
IDE	Integrated Development Environment
IEEE	Institute of Electrical and Electronic Engineering
IT	Information technology
J	Joule
LCD	Liquid Crystal Display
Li-ion	Lithium-Ion
mAh	Milliamp ere per Hour
MCC	Mobile Cloud Computing
MP3	Moving Picture Experts Group Layer-3 Audio
ms	Millisecond
mV	Millivolt
mW	Milli-watt
OS	Operating System
P2P	Point to Point
PaaS	Platform-as-a-Service
PC	Personal Computer
PDA	Personal Digital Assistance
QoS	Quality of Services
RAM	Random Access Memory
REST	Representational State Transfer
RPC	Remote Procedure Calls
RSD	Relative Standard Deviation
RTT	Round Trip Time
S3	Simple Storage Services
SaaS	Software-as-a-Service

SD	Standard Deviation
SDK	Softwaere Development Kit
SID	Smart Internet Device
SOAP	Simple Object Access Protocol
T_0	Zero Throughputs
TC	Time Cost
TCP	Transfer Control Protocol
T_M	Maximum Throughputs
T_N	Normal Throughputs
TT	Turnaround Time
UDP	User Datagram Protocol
UI	User Interface
UMTS	Universal Mobile Telecommunication System
USB	Universal Serial Bus
VM	Virtual Machine
WAN	Wide Area Network
Wi-Fi	Wireless Fidelity
Wi-Max	Worldwide Interoperability for Microwave Access
WLAN	Wireless Local Area Network
WWW	World Wide Web