



International
Journal of
Arts and Sciences

CONFERENCE OF THE INTERNATIONAL JOURNAL OF ARTS & SCIENCES

**5th – 8th June, 2017
Ryerson University, Toronto, Canada**

CD-ROM ISSN: 1943-6114

Copyright © 2012 UniversityPublications.net

Conference of the

International Journal of

Arts and Sciences

CD-ROM ISSN: 1943-6114



International Journal of Arts & Sciences
Attn: Mark Bridge
Conferences Department
55 Farm Drive
Cumberland, Rhode Island 02864-3565
USA
E-mail: info@universityconferences.org

Copyright

Conference of the International Journal of Arts & Sciences

CD-ROM ISSN: 1943-6114

Copyright © 2012 UniversityPublications.net

All rights reserved.

This issue, or parts thereof, may not be reproduced in any form or by any means, electronic or mechanical, including photocopying, recording or any information storage and retrieval system now known or to be invented, without written permission from the Editor(s) or from the UniversityPublications.net.

Disclaimer:

The authors warrant through the submission of their articles (also considered as “Work”) that they shall indemnify and hold harmless the publisher and its agents for all liability, damages and expenses they may incur as a result of publishing, printing and circulating the Work, including any claims brought by any other person claiming an interest in the Work or its subject matter.

About IJAS

The International Journal of Arts & Sciences (IJAS) was founded in 2005 as a double-blind refereed journal. Its first issue was published one year later in hard-copy format. Each issue was driven by a call for papers focusing on a particular topic. In 2017, the journal adopted a strategy to reach out beyond American academia to a truly global audience. Its editorial board welcomes submissions from universities around the world. IJAS recognizes the best research articles and accepts less than 20% of the manuscripts it receives for publication in its journal.

Editorial Board

Associate Editors

Nancy Mathes, *ISSI, USA*

Joseph Bonnici, *Central Connecticut State University, USA*

Joseph Azzopardi, *University of Malta, Malta*

Mary Allen, *UniversityPublications.net, USA*

Consulting Editors

Peter Mini, *Bryant University, USA*

Gene Gullede, *University of Arkansas – Monticello, USA*

Bill Hamby, *Indiana Wesleyan University, USA*

Michael McKinney, *Jamestown College, USA*

Anthony Lopez, *UniversityPublications.net, USA*

David Moore, *UniversityPublications.net, USA*

Conferences Advisory Board

Kathryn LaFever, *Miami University, USA*

Rose Marie Azzopardi, *University of Malta, Malta*

Lukas Jirsa, *Charles University, Czech Republic*

Henry Greene, *Central Connecticut State University, USA*

Sangeeta Khorana, *Aberystwyth University, UK*

Khoon Koh, *Central Connecticut State University, USA*

Debopriyo Roy, *University of Aizu, Japan*

S. Serhat Serter, *Anadolu University, Turkey*

Jim Cross, *Leeds Trinity & All Saints College, UK*

International Editorial Board¹

Dustin Morrow, *Temple University, USA*

Christopher J. Greig, *University of Windsor, Canada*

Carlos Liard-Muriente, *Central Connecticut State University, USA*

Suzanne Maniss, *University of Tennessee at Martin, USA*

Anna Gemra, *University of Wroclaw, Poland*

Josephine Etowa, *University of Ottawa, Canada*

Vida Davoudi, *Lonestar College, USA*

Brian Phillips, *Grand Valley State University, USA*

Kavita Daiya, *George Washington University, USA*

H. Dean Buttram, III, *Jacksonville State University, USA*

S. Serhat Serter, *Anadolu University, Turkey*

Caroline Brandt, *The Petroleum Institute, Abu Dhabi, UAE*

Danielle Twigg, *Griffith University, Australia*

A. Helene Robinson, *St. John's University, USA*

Shannon Melideo, *Marymount University, USA*

Irina Moreland, *University of Colorado at Denver, USA*

Tao Zeng, *Wilfrid Laurier University, Canada*

Igor Pustynick, *Humber College, Canada*

Larry Riggs, *Butler University, USA*

Shehla Burney, *Queens University, Canada*

Maria Assif, *University of Toronto, Canada*

Lyndon B. Carew, *University of Vermont, USA*

María Rosalía Vicente, *University of Oviedo, Spain*

Radka Wildova, *Charles University, Czech Republic*

Gurmak Singh, *University of Wolverhampton, UK*

Monika Raesch, *Suffolk University, USA*

Ephie Konidaris, *McGill University, Canada*

Bulent Tarman, *Selcuk University, Turkey*

Shoji Ohga, *Kyushu University, Japan*
Ardian Greca, *Georgia Southern University, USA*
Hasan Ozdemir, *Istanbul University, Turkey*
Ruxandra Serbanescu, *University of Toronto, Canada*
Reema Khurana, *Institute of Management Technology, India*
Rina Devnita, *Padjadjaran University, Indonesia*
Pattabhi Sitaram, *Purdue University Calumet, USA*
Rich Snow, *Embry-Riddle Aeronautical University, USA*
Michael Quinn, *Bentley University, USA*
Juan C. Barrera, *Elmhurst College, USA*
Kevin E. Dow, *University of Alaska Anchorage, USA*
Marita Naudé, *Curtin University, Australia*
Christopher Kubik, *Colby-Sawyer College, USA*
Sisira R.N.Colombage, *Monash University, Australia*
Daniel E. May, *Harper Adams University College, UK*
Sofia Daskou, *Hellenic American University, Greece*
Chrysost Bangaké, *University of Orleans, France*
Adugna Lemi, *University of Massachusetts Boston, USA*
Azzat Mohd. Nasurdin, *Universiti Sains Malaysia, Malaysia*
David S. Kung, *University of La Verne, USA*
Rima Aboudan, *United Arab Emirates University, UAE*

¹This list does not include the ad hoc reviewers. Given the diversity of papers in multidisciplinary publishing, it is common practice for the review process in such journals to rely on ad hoc reviewers whose research interest is in line with the research topic of a submitted manuscript. The expertise of these reviewers is invaluable to the review process.

Table of Contents

No.	TITLES AND AUTHEORS	Page No.
1	CULTURAL COMPETENCY AND PLURALISM IN EDUCATION Gail Beier	1
2	UNDERGRADUATE CREATIVITY AT A CHINESE UNIVERSITY: A U.S. FULBRIGHT STUDY IN PEDAGOGY Carol A. Mullen	6
3	SAFETY AND PROFITS IN THE AIRLINE INDUSTRY Ryan Broaderick, Lori Emmel, Krzysztof Gierczak, Ramon- Osvaldo Gonzalez	12
4	SHOULD AMERICA PHASE OUT CASH TO CURTAIL UNLAWFUL TRANSACTIONS? Reza Varjavand	19
5	PART-TIME TEACHERS DEVELOPING THEIR COORDINATORS Brad Deacon	26
6	A REVIEW OF SECLUSIVE PROTECTION OF CLOUD STORAGE RELATED TO STEGANOGRAPHY TECHNIQUES Pramneet Kaur, Shailendra Kulkarni	31
7	ISLAMIC FINANCE AND MORAL RESPONSIBILITY Abdulazeem Abozaid	38
8	TEACHERS' PERCEPTION OF EFFECTIVENESS ON SUBMISSION RATE OF DIGITAL VERSUS PAPER SUBMISSION OF HOMEWORK Adel Al-Bataineh, David Hallatt, Megan A. Huss, Catherine Unsbee	45
9	E-TRACKING SYSTEM FOR PUBLISHING COMPANY Kunyanuth Kularbphettong	51
10	CORPORATE GOVERNANCE AND EARNINGS MANAGEMENT PRACTICES IN PAKISTANI FIRMS Talat Afza, Mian Sajid Nazir	59

No.	TITLES AND AUTHEORS	Page No.
11	TECHNOLOGY DRIVEN FACULTY DEVELOPMENT-LESSONS FROM A CARIBBEAN UNIVERSITY (WITH SPECIFIC FOCUS ON JAMAICA) Alicia Palmer	66
12	FACTORS INFLUENCING THE OUTSOURCING OF CORE BUSINESS DELIVERABLES IN A SELECTED STATE OWNED ENTERPRISE IN SOUTH AFRICA Marcia Magagula, Robert Walter Dumisani Zondo	72
13	THE NEXT MOBILE REVOLUTION: NEAR FIELD COMMUNICATION Rajinder Gupta ,Shabnam Kaur, Manav Saini	79
14	A SYTEMS MODEL OF SUBJECTIVE CREATIVE WELLBEING: IMPLICATIONS FOR THE INDUSTRIALIZATION OF CREATIVITY Bob Shields	84
15	THE DRIVERS OF UNIVERSITY KNOWLEDGE TRANSFER TO FIRMS IN GHANA: A STRUCTURAL EQUATION MODELLING APPROACH Abdul-Fatahi Abdulai, Lyndon Murphy, Brychan Thomas	92
16	DEVELOPING AND SUSTAINING VOCATIONAL EDUCATIONAL TRAINING IN AFRICA: THE CORE ELEMENT John Olotewo	99
17	DO YEARS OF TEACHING EXPERIENCE REALLY MATTER IN FACULTY CONCEPTIONS AND MISCONCEPTIONS OF IMPLEMENTING HYBRID COURSES? Ramón-Osvaldo González,Elsa-Sofia Morote, Jeanne Radigan, Helen C. Wittman	107
18	DETERMINANTS OF MONETARY POLICY DYNAMICS IN SUB-SAHARA AFRICA: AN EMPIRICAL INVESTIGATION Andrew Maredza, Ebenezer Gbenga Olamide	114
19	EVALUATION OF DIFFERENTIATION AND ORIENTATION ABILITIES OF BASKETBALL PLAYERS AT DIFFERENT LEVELS OF COMPETITION Navdeep Singh Grewal	120

No.	TITLES AND AUTHEORS	Page No.
20	AN ASSESSMENT OF THE IMPACT OF YOUTHZONES (A COMMUNITY PROJECT) ON THE LIVES OF YOUTHS IN IMPOVERISHED COMMUNITES IN SOUTH AFRICA Michelle Ovens, Johan Prinsloo	128
21	CROSS TABULATION ANALYSIS OF DEMOGRAPHIC DETERMINANTS ON CREDIT ACCESSIBILITY FOR SMALL AND MEDIUM ENTERPRISES IN SOUTH AFRICA CONSTRUCTION INDUSTRY Olanrewaju Abdul Balogun , Ansary Nazeem	134
22	COOPERATIVE DRIVING THROUGH SOCIAL NETWORKS OF CARS Li-Mei Chen ,Chunlei Liu ,Jun Zhang	142
23	PERCEPTION OF PARENTAL INFLUENCE IN MARITAL CHOICE BY UNDERGRADUATES AT POINT OF GRADUATING Abolanle Olukemi Lasode ,Nike Elizabeth Tobi	149
24	GREEN HUMAN RESOURCE MANAGEMENT TOWARDS SUSTAINABLE ORGANIZATIONS: A CASE OF HIGHER EDUCATION INSTITUTIONS Muhammad Hoque, Vuyokazi Mtembu	155
25	TOURISM AND TOURISM AT HOME Anita Eves, Seo Yeon Jang	164
26	SIGNIFICANCE OF CANADA AS A SHELTER IN A PRAYER FOR OWEN MEANY Onur Kaya	171
27	BEROM LANGUAGE, CULTURAL BELIEFS AND MENTAL WELL-BEING: A QUALITATIVE STUDY Dung Ezekiel Jidong, Poul Rohleder, Rachel Tribe, Aneta Tunariu	179
28	EVALUATION OF THE PERFORMANCE FROM THE PERSPECTIVE OF THE TQM IN THE PUBLIC AND PRIVATE HOSPITAL Nada Hassan Abdelgadir Ahmed, Mutaz Elsayed, Mohamed Hafiz	189

No.	TITLES AND AUTHEORS	Page No.
29	THE USE OF RANDOM AMPLIFIED POLYMORPHIC DNA (RAPD) TO STUDY THE GENETIC VARIATION OF BIOSURFACTANT PRODUCING BACTERIA Okwujiakor, Nwaehiri Linda, Oge Mbanefo, Toochukwu Ogbulie, Chioma Okore	197
30	WOMEN, RELATIONS AND LOVE: NARRATIVES BY AMRITA PRITAM Mini Gill	206
31	INTERNET USAGE ON MOBILE PHONES OF UNIVERSITY STUDENTS Siriporn Poolsuwan	212
32	COMMUNITY-ENGAGED LEARNING AND CULTURAL DIVERSITY: TEACHING AND ASSESSING INTERCULTURAL COMPETENCE AND ADVANCED LANGUAGE SKILLS IN ONLINE FRENCH Marie-Anne Visoi	219
33	WOMEN'S PARTICIPATION IN AGRICULTURE ENTREPRENEURSHIP IN DEVELOPING COUNTRIES: WHAT A PITY! Evelyn Derera, Charles O'Neill, Maxwell Phiri	227
34	AN INVESTIGATION OF ERROR FEEDBACK WITH IMPROVEMENT STRATEGIES AND REFLECTION ON INTERNATIONAL STUDENTS' ACADEMIC WRITING Li-Mei Chen, Chunlei Liu	236
35	COLLABORATIVE WRITERS' PERFORMANCE, THEIR PERCEPTIONS OF THE TOOL-MEDIATED WRITING, AND COMMUNICATION RELATIONSHIPS Meng-Ying Daphne Lin	244
36	DIALOGIC LEARNING IN ONLINE ENVIRONMENTS: A CASE STUDY OF BRITISH A-LEVEL PHILOSOPHY STUDENTS Daniel Dennis	252

No.	TITLES AND AUTHEORS	Page No.
37	FOOD CONSUMPTION OF NIGERIANS AND HOW TO IMPROVE LIFE EXPECTANCY THROUGH WELL REVIEWED COOKING HABITS O.F. Mike-Rowland	260
38	PROFESSIONAL PREPARATION THROUGH INTERDISCIPLINARY COLLABORATIVE PROJECTS Lorrie Frear	270
39	TEACHING COMPETENCIES OF THE SECONDARY STUDENT-TEACHERS OF DMMMSU Remedios Neroza, Nona Rivera	279
40	THE EFFECTIVENESS OF MOTHERS-TRAINING PROGRAM ON CHILDREN WITH LEARNING DISABILITIES Nadia Tazi	287
41	COMPARATIVE EVALUATION OF ANTI-ALZHEIMER POTENTIAL OF SOME COMMONLY USED PLANTS AND MUSHROOM SPECIES Ravinder Kaur, Richa Shri	295
42	COMPARATIVE STUDY OF SOIL WASHING OF LEAD, ZINC AND COPPER USING BIOSURFACTANT AND SOME SOIL WASHING AGENTS Okwujiakor, Agunna Ejele, Nwaehiri Linda, Oge Mbanefo, Toochukwu Ogbulie, Chioma Okore	302
43	EFFECTS OF CORN COB FIBER ADDITION ON NOODLE PROPERTIES Nuntaporn Aukkanit , Supawan Pantong , Phikunthong Sawatwong, Jannapa Yeela	310
44	ENERGY MANAGEMENT OF REAL-TIME WIRELESS POWER TRANSMISSION PROTOTYPING A MICROSCOPIC TO MACROSCOPIC APPROACH Imtiaz Hakeem, Salimu Rehman, Abdul Waseem	318

No.	TITLES AND AUTHEORS	Page No.
45	KNOWLEDGE ACQUISITION BY SELF-LEARNING METHODS WITH STRUCTURED CLINICAL DATA Joachim Baumeister , Sebastian Furth ,Daniel Knöll , Klaus Peter Scherer	327
46	RECOMMENDATION SYSTEM FOR VISITING WEBSITES Assem A. Alsawy ,Ahmed M. Omran	334
47	CHILD IS MEANT TO LEARN NOT TO EARN: LITERATURE REVIEW ON CONTENDING CHILD LABOUR ISSUES AND CHALLENGES Aswin George , Sarmistha Nandy	341
78	FEMALE BODY AS A NARRATIVE: A CRITICAL STUDY OF JAMAICA KINCAID'S LUCY Maham Latif	350
49	FEMALE BODY AS A NARRATIVE: A CRITICAL STUDY OF JAMAICA KINCAID'S LUCY Maham Latif	359
50	THE CONFLICT BETWEEN IDEOLOGICAL CONSTRAINTS AND UTOPIAN IMPULSES IN GO TELL THE SPARTANS Tajaddin Salahaddin Noori	369
51	STORYTELLING IN MULTIDISCIPLINARY CONFERENCES J. Bonnici, Henry Greene	377
52	GROUP PROCESS SOLVES THE PROBLEMS IN LEARNING THE CONCEPT OF HAZARD ANALYSIS Jaruwan Chutrtong	386
53	CONVERSION OF THE EARTH/CONSTRUCTION OF THE TECHNOSPHERE: AN ENVIRONMENTAL ISSUE TO RIVAL GLOBAL WARMING, LOSS OF BIODIVERSITY, RESOURCE DEPLETION, ETC. Barry Wood	391
54	DEVELOPMENT OF PAMAM DENDRIMER COMPOSITE ANTI- BIOFOULING NANOFIBER MATS FOR WATER FILTRATION Ekonkar Singh Johal	399

No.	TITLES AND AUTHEORS	Page No.
55	EVALUATION OF THERMAL PROCESSES FOR REDUCTION OF SALMONELLA SPP. AND ESCHERICHIA COLI IN PORK SAUSAGES WRAPPED IN BANANA LEAVES Naruemon Prapasuwannakul, Mantana Panbualuang	406
56	ENSEMBLE DEA AND ITS COMPARISON WITH VARIABLE REDUCTION MODELS BASED ON ENTROPY MAXIMIZATION CRITERION Parag Pendharkar	412
57	IMPACTS OF FOREIGN RELIGION ON AFRICAN TRADITIONAL WORSHIP: THE IGBO EXAMPLE Egesi Jonathan	422
58	PLANT-FRUGIVORE MUTUALISM: SEED'S GREAT ESCAPE Inderdeep Kaur	430
59	DEVELOPMENT OF GLUTEN-FREE BISCUITS WITH RICEBERRY FLOUR Supatchalee Sirichokworrakit, Thanchanok Aungsirirak, Siwaporn Butmee	441
60	MAPPING THE COLONIAL CONQUER OF NATIVE MINDS: A SOCIO-HISTORIC CRITIQUE OF TURQUOISE BY AMIR HUSAIN Fauzia Janjua	449
61	TRAINING: A PANACEA OF CUSTOMER SERVICE INEFFICIENCY AND IMPOVING HOTEL PERFORMANCE AT OSOGBO, OSUN STATE, NIGERIA O.F. Mike-Rowland ,C.E. Ogunlade	458
62	CAN A MANAGEMENT AND INFORMATION SYSTEM BE AN ALTERNATIVE APPROACH TO UPSURGE EFFICIENCY FOR LOCAL ECONOMIC DEVELOPMENT PRACTICE IN KWAZULU-NATAL? Xoliswa Majola	466
63	MOTIVATIONAL FACTORS WHY STUDENTS ENROL AT DMMMSU CGS? Art Accredito Neroza , Remedios Neroza	473

No.	TITLES AND AUTHEORS	Page No.
64	THE ROLE OF LAW AND THE CHANGING FACE OF TERRORISM: A CASE STUDY OF BOKO HARAM IN NIGERIA Tarela Juliet Ike, Kofi Kufuor, John Morrison, Anthony Richards	481
65	GENDER ROLES REPRODUCED: ONLINE SHOWCASES OF NEW BRIDES' HOMES Zeynep Isil Isik Dursun	490
66	POPULATION DENSITY OF INSECT PEST ON CORN BIOMASS YIELD INTERCROP WITH LEGUMES Ferdinand S. Corpuz , Myleen Corpuz	497
67	ECOLOGICAL AWARENESS IN ALAMGIR HASHMI'S POEMS Mubina Talaat	506
68	COMPONENTS OF ETHICAL LEADERSHIP AND THEIR IMPORTANCE IN SUSTAINING ORGANIZATIONS OVER THE LONG TERM Niall Hegarty, Salvatore Moccia	513
69	DESIRE OF SHOWING VS. FEAR OF SURVEILLANCE: A QUANTITATIVE RESEARCH OVER SURVEILLANCE ATTITUDES OF FACEBOOK USERS AND NON-USERS IN TURKEY Demet Firat, Feyyaz Firat	521
70	FACTORS INFLUENCING ENTREPRENERSHIP START-UPS AMONG GRADUATE STUDENTS IN GHANA Felicity Asiedu-Appiah, Bylon Abeeku Bamfo , Courage Simon Kofi Dogbe	530
71	MAGNITUDE OF DYNAMIC PRESSURE OF SUBSONIC AIRFLOW AROUND SYMMETRIC OBJECTS Vsevolod Koryanov ,Erwin Martinez ,Shehret Tilvaldyev	539
72	THE RISE OF ISLAMIC FEMINISM: A COMPARATIVE ANALYSIS BETWEEN THE REPUBLIC OF IRAN AND SAUDI ARABIA Dalia Elsayed	546

No.	TITLES AND AUTHEORS	Page No.
73	OF 'LOVE LAWS' AND THE DYNAMICS OF POWER PLAY: GENDER AS A SUBTEXT IN ARUNDHATI ROY'S THE GOD OF SMALL THINGS Pushpinder Walia	556
74	INCREASING STUDENT MOTIVATION AND LEARNER AUTONOMY THROUGH EXTENSIVE LISTENING PORTFOLIOS Jaime Morrish	568
75	THE NEW SACRED ART MOVEMENT AND DEVELOPMENT OF NIGERIAN ART: THE OSUN OSOGBO EXPERIMENT Egunjobi Felix Babatunde	576
76	CHILD TRAFFICKING AND ITS HUMAN IMPLICATION IN ETHIOPIA: THE CASE SNNPR STATE Alemshet Adugna Addisalem	586
77	CHILD TRAFFICKING AND ITS HUMAN IMPLICATION IN ETHIOPIA: THE CASE SNNPR STATE Alemshet Adugna Addisalem	594
78	INFLUENCE OF EXERCISE ON PERSONAL HEALTH PROFILE ON THE PEOPLE OF KABBA-BUNU LGA OF KOGI STATE NIGERIA Toluse Caroline Modupe	603
79	CONSUMERS' WILLINGNESS TO CONTRIBUTE TO THE IMPLEMENTATION OF A WORKPLACE SAFETY LABEL Marjia Khanom ,Mashiur Rahman	612
80	MEDICATION SAFETY STRATEGIES: A REVIEW AND SUGGESTIONS Hoppin Shari	621
81	THE ATTITUDES OF THE COLLEGE STUDENTS TOWARD THE UTILIZATION OF BRITISH RESTORATIVE JUSTICE TECHNIQUES IN EVERYDAY POLICING Jennifer Dawe, Margaret Duda, Rebekah Gonzales, Aqeel Saeid	630

No.	TITLES AND AUTHEORS	Page No.
82	REFUGEE INFLUX AND LIVELIHOOD OF THE HOST COMMUNITIES: A CASE STUDY OF NAKIVAALE REFUGEE SETTLEMENT, UGANDA Brendah Nakuya	639
83	TOURISM DEVELOPMENT IN EU REGIONS: AN ANALYSIS OF MONITORING STRATEGIES FOR FAST GROWING VISITORS COUNTRIES Renee Yi-Mond Yuan	648
84	STUDENTS' PERFORMANCE CHALLENGES AT INTERNSHIP IN KANO STATE, NIGERIA Attamah Chukwunwike Emmanuel	656
85	THE RAMAKIEN AND THE BIBLICAL ACCOUNT OF THE COSMIC CONTROVERSY Bienvisa Ladion Nebres	665
86	EFFECT OF GROUP COUNSELLING ON YOUTHS' ATTITUDE TOWARDS EXAMINATION MALPRACTICES IN LAGOS STATE, NIGERIA Ayodeji Olawole, Mopelola Olusakin	679
87	DETERRITORIALIZATION' IN THE WASTED VIGIL BY NADEEM ASLAM Sobia Kiran	690
88	EFL TEACHING IN UNIVERSITY CLASSROOMS IN SAUDI ARABIA: A CASE STUDY OF INSTRUCTORS AND CURRICULUM AND IMPLEMENTATION FOR LANGUAGE LEARNING Dalia Jamal Alghamdi	699
89	DAUGHTERS' NARRATIVES : THE DIALECTICS OF SILENCE AND MEMORY D. Laura Dameris Chellajothi	708
90	DEVELOPMENT AND ACCEPTABILITY OF THE FRUIT KAMIAS (AVERRHOA BILIMBI) Lilia M. Pingol , Gloria T. Tariga	716

No.	TITLES AND AUTHEORS	Page No.
91	RELIGIOUS VIOLENCE AND HERDSMEN AND TERRORIST PHENOMENA IN NIGERIA: A RHETORIC OR A REALITY Mary Taiye Daniel	725
92	ADVANCING ACADEMIC LEADER IDENTITY DEVELOPMENT: USING KAUPAPA TO BRIDGE THE DIVISION BETWEEN CONFLICTING ORGANISATIONAL CULTURES Steven Marshall	734
93	MANIFEST DESTINY AND NATIVE AMERICANS Serdar Ornek	743
94	A LESSINGIAN SOLUTION TO APOCALYPTIC DOOM IN WINTERSON'S THE STONE GODS: A SUFI APPROACH Neşe Yildirim	752
95	SYKES-PICOT AND THE FAILURE OF THE MODERN ARAB STATE SYSTEM Jawaher Abdel-Hamid	761
96	THE FUNCTION OF MUSIC IN FILM: THE RELATIONSHIP BETWEEN THE IMAGE AND THE MUSIC Rengin Iskeçe	771
97	THIS TIME SING FOR FREEDOM: THE ROLE OF PROTEST SONGS IN LIBERATION MOVEMENT OF SOUTH AFRICANS Seher Gündüz	779
98	EFFECTS OF SELECTED YOGIC ASNAS AND PRANAYAMAS ON LIPOPROTEIN CHOLESTEROL ABNORMALITIES AND DIABETIC POST MENOPAUSAL WOMEN Avtar Singh Kalsi ,Prabhjot Kaur, Satpal Kaur	785
99	PALIMPSEST AND REWRITING THE CANADIAN FEMINISM IN THE HAND MAID'S TALE Onur Kaya	792

No.	TITLES AND AUTHEORS	Page No.
100	ELECTROCHEMISTRY OF PYRROLOQUINOLINE QUINONE (PQQ) ON MULTI-WALLED CARBON NANOTUBE-MODIFIED GLASSY CARBON ELECTRODES IN BIOLOGICAL BUFFERS D. A. Baum , I. Emahi , M. P. Mitchell	800
101	DEVELOPMENT OF IOT-BASED CAR PARKING MANAGEMENT SYSTEM: THE DEPLOYMENT OF MOBILE TECHNOLOGY AND INTERNET OF THINGS FRAMEWORK Shutchapol Chopvitayakun	807



Development of IOT-based Car Parking Management System: The Deployment of Mobile Technology and The Internet of Things Framework

Shutchapol Chopvitayakun, Narudol Phuangrod, Suwitz Kaethaw,
Thana Srisombat and Siam Kaewchay
Suan Sunandha Rajabhat University, Thailand
shutchapol.ch@ssru.ac.th

ABSTRACT

Finding a car parking lot is such a never ending problem for most buildings and car drivers. Most of the time, drivers waste their time and fuel to find a right spot for parking car due to most parking systems do not provide the real time transaction and information for drivers. Even though, most systems operated by electronic signs and indicators but they handle real-time transaction only the main signs available at the main entrances or gates. Almost every driver has only partial correct information while they are passing those signs and approaching the desired slot ending up with none. This work applied Internet of Things framework and mobile technology to cope with this problem and also enhance some interesting features of the system such as navigation map and provide some efficient statistics; e.g. idle time and waiting time for management purposes. The result of this research shows that this developed system provides much more on efficient front-end and back-end features than most normal car parking systems in most buildings. Moreover, it very satisfied a lot of beta users according the survey with statistically significance.

Keywords: IOT-based, Car Parking Management System, Mobile Technology, Internet of Things Framework

I. INTRODUCTION

Car park management is a big city or high volume of vehicles and motorists is a crucial concern and problem for most building owners. In the prime area such as metropolitan and business center, it is only 30% for drivers to find the available parking lot accurately not randomly. However, many cities have provided guiding system and information for drivers to park their car efficiently via digital signs and internet information [1]. Most drivers must find their parking spaces by manual, chance, cumulative experience, and hard effort. Hence, cost reduction in term of saving fuel, man power and time is the best solution for all stakeholders; customers, drivers, building managements. Then, the smart parking system has been developed and implemented. There are 2 approaches vehicle-to-vehicle and vehicle-to infrastructure have been adopted widely throughout the application of wireless fidelity or wireless local area networking, radio frequency identification (RFID), and ZigBee; wireless ad hoc network based on IEEE 802.15.4 deploys low-power digital radios. These technologies are integrated with the Internet can provide guidance, information, direction and solution for drivers who need car spaces and building managements who need cost effective and customer satisfaction for their services [2].

The integration of wireless sensors, wireless network, mobile phone network, and mobile phone operating systems has been called Internet of Things (IOT). Nowadays, IOT has been applied and widely accepted in many applications, businesses and industries. Especially in car park management system, there are many projects and study and even, real implementation for drivers and car park management teams. However, the accuracy of the system is still not reliable due to some interference of wireless sensors communication and vehicle specification limits. Hence, some research teams try to focus on system accuracy and get rid of unreliable parameters that might affect the system performance. This research focuses on the investigation IOT technology application to improve the car park management system. It developed a system for drivers and car park management to provide real-time information via mobile phones and car park reservation for drivers with special requirements [3].

II. LITERATURE REVIEWED

Bagula and team developed a smart parking model based on the real outdoor parking lot at the CERIST research center in Algiers, Algeria. This model is a prototype, sensor-based method and designed based on a multi-layer framework. This model can enhance its module and scale to serve different parking system and various users. It has four layers: a sensing layer, networking layer, middleware layer and application layer [4].

Sensing Layer

This layer defines sensor device platform. Each hardware sensor is embedded into the system for detecting vehicles the parking lot. It deployed RFID to identify all vehicles at the parking entrance gate.

Networking Layer

This layer has various communication mode to help support all sensors in the parking lot. It also deploys IEEE 802.15.4 standard, ZigBee communication and TCP/IP protocol over Ethernet network and connects the gateway to the web server and database. Additionally, remote access feature via the Internet.

Middleware Layer

This layer uses algorithms and image processing techniques to recognize different circumstances happen in the parking it. It handles different databases, servers. It can manipulate software intelligence and smart services for users in the situation when they are trying to find parking lots.

Application Layer

The application layer is the layer where the different services are defined and provided to different users. Client devices have been connected via the TCP/IP protocol to a parking database. The latter is updated in real time with the status of the parking lots. Two kinds of client applications have been considered for parking lot monitoring: (1) a mobile device application for phones and tablets; and (2) a desktop application for laptops and desktop computers.

S R designed a parking system in such a way that it is applicable for covered parks, open parks and street side parking. It deploys the cloud based IOT architecture for smart parking system which contains cloud service provider which provides cloud storage to store information about status of parking slots in a parking area and etc. [10]. The centralized server which manages to store entire smart parking systems information such as number of slots, availability of vehicles etc. And these information will be accessed through some secured gateways through network. This smart parking system which consists of several components. And their functionality includes:

- Centralized server: maintains databases which contain information about parking spaces present in the city.
- Raspberry pi: the microcontroller which is used to implement our parking system and it is attached with raspberry pi camera.
- Image capture: Pi-camera is used to capture the picture of parking area continuously to validate the slots which either filled or empty.
- Navigation system: signals the availability of parking slots to the users and navigates to the exact location of nearest parking area from current location.
- Display device: a monitor or tab is used to display the admin side interface and he is capable of modifying the parking lots by observing the device.
- User device: user can connect with the smart parking system with their smart phones or with some browsers. Architecture of proposed System The SPS which incorporates the features of raspberry pi 2 and which is attached with pi camera. Where pi camera is mounted on the top of street light lamp posts or at the ceiling of indoor parks. Thus camera is capable of

making survey on each parking slots in parking lots continuously to check whether the particular slot is filled or empty. The structure of smart parking system and it contains some control points on each parking slots which will be used as reference points for the camera. The central server presents information about multiple slots in a single parking area and multiple parking areas in a single city and it is accessed through some protocols such as HTTP, CoAP, etc. from any browsers, by which the website is built with basic JSON interface [5].

III. METHODOLOGY

Ultrasonic sensor

Ultrasonic sensors (also known as transceivers when they both send and receive, but more generally called transducers) work on a principle similar to radar or sonar which evaluate attributes of a target by interpreting the echoes from radio or sound waves respectively. Ultrasonic sensors generate high frequency sound waves and evaluate the echo which is received back by the sensor. Sensors calculate the time interval between sending the signal and receiving the echo to determine the distance to an object. This technology can be used for measuring wind speed and direction (anemometer), tank or channel level, and speed through air or water. For measuring speed or direction a device uses multiple detectors and calculates the speed from the relative distances to particulates in the air or water. To measure tank or channel level, the sensor measures the distance to the surface of the fluid. Further applications include: humidifiers, sonar, medical ultrasonography, burglar alarms and non-destructive testing. Systems typically use a transducer which generates sound waves in the ultrasonic range, above 18,000 hertz, by turning electrical energy into sound, then upon receiving the echo turn the sound waves into electrical energy which can be measured and displayed. The technology is limited by the shapes of surfaces and the density or consistency of the material. Foam, in particular, can distort surface level readings



Fig.1 Ultrasonic sensor with box and unbox hardware

RESTful web services

RESTful web services are built to work best on the Web. Representational State Transfer (REST) is an architectural style that specifies constraints, such as the uniform interface, that if applied to a web service induce desirable properties, such as performance, scalability, and

modifiability that enable services to work best on the Web. In the REST architectural style, data and functionality are considered resources and are accessed using Uniform Resource Identifiers (URIs), typically links on the Web. The resources are acted upon by using a set of simple, well-defined operations. The REST architectural style constrains an architecture to a client/server architecture and is designed to use a stateless communication protocol, typically HTTP. In the REST architecture style, clients and servers exchange representations of resources by using a standardized interface and protocol. The following principles encourage RESTful applications to be simple, lightweight, and fast:

Resource identification through URI: A RESTful web service exposes a set of resources that identify the targets of the interaction with its clients. Resources are identified by URIs, which provide a global addressing space for resource and service discovery. See [The @Path Annotation and URI Path Templates](#) for more information. **Uniform interface:** Resources are manipulated using a fixed set of four create, read, update, delete operations: PUT, GET, POST, and DELETE. PUT creates a new resource, which can be then deleted by using DELETE. GET retrieves the current state of a resource in some representation. POST transfers a new state onto a resource. See [Responding to HTTP Methods and Requests](#) for more information.

Self-descriptive messages: Resources are decoupled from their representation so that their content can be accessed in a variety of formats, such as HTML, XML, plain text, PDF, JPEG, JSON, and others. Metadata about the resource is available and used, for example, to control caching, detect transmission errors, negotiate the appropriate representation format, and perform authentication or access control. See [Responding to HTTP Methods and Requests](#) and [Using Entity Providers to Map HTTP Response and Request Entity Bodies](#) for more information. **Stateful interactions through hyperlinks:** Every interaction with a resource is stateless; that is, request messages are self-contained. Stateful interactions are based on the concept of explicit state transfer. Several techniques exist to exchange state, such as URI rewriting, cookies, and hidden form fields. State can be embedded in response messages to point to valid future states of the interaction. See [Using Entity Providers to Map HTTP Response and Request Entity Bodies](#) and “Building URIs” in the JAX-RS Overview document for more information.

Architecture

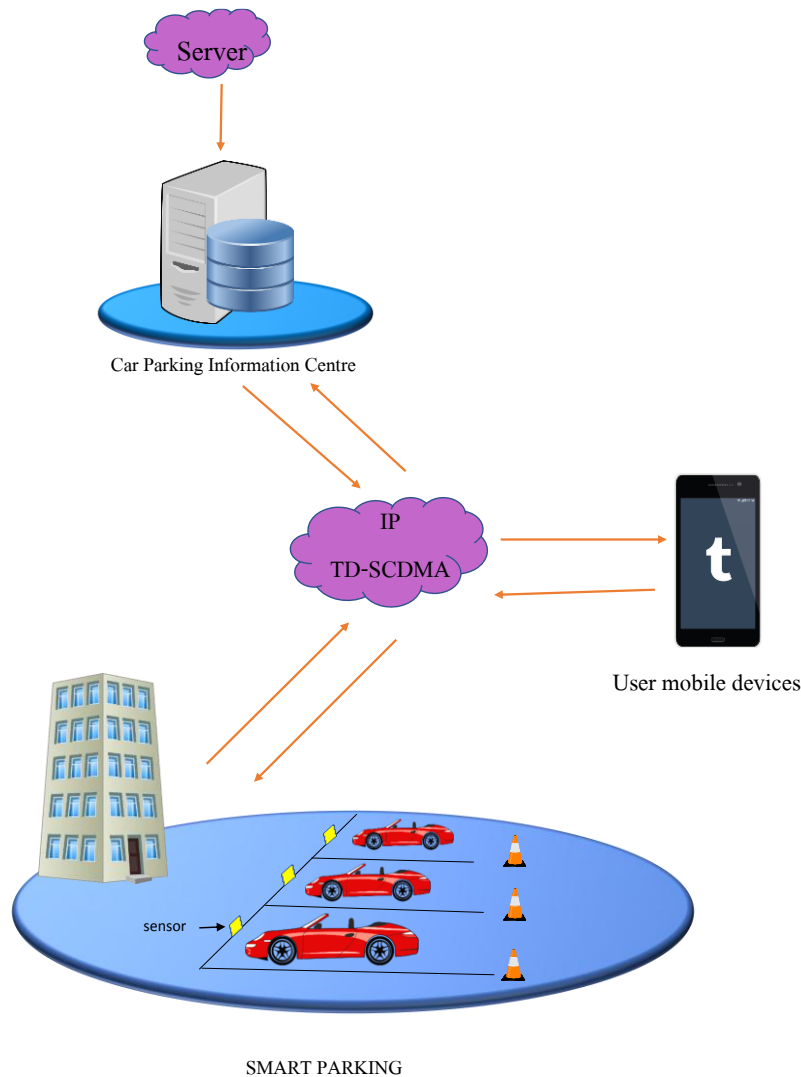


Fig.2 IOT based model for car park management

This research project installed ultrasonic sensors of the parking lot ceiling with the detective range 3-5 meter height complies with the safety design of building. Each sensor was attached to the local area network through cable wire and cable tube to the database and webserver. Each user can access to this information wheatear each parking lot is vacant or not via web service, web browser and mobile application both iOS and Android by using web view. This system provides real-time transaction for each driver and also enhances some features of the system such as a driver can make a reservation for a special parking lot at a special day and special time. This case serves the need of disable person or special guest who comes to visit SSRU occasionally. Once a parking lot was reserved and verified by authority officially. The car parking system will reserve this parking lot and shown to each user via web browser and mobile applications as a priority lane on that specific date and time.

Chopvitayakun applied 3 cross platform or hybrid framework application techniques; IONIC, CORDOVA, and ANGULAR JS to develop a mobile application to serve the internship program management. The developed application can run on all mobile operating platforms.

RESTful web service will be provide data through a mobile service called web view and IONIC, CORDOVA, and ANGULAR JS retrieve that provided data and display it in the mobile application, most popular for iOS and Android [6].

IV. RESULTS



Fig. 3 Mobile application to retrieve car park information via IOT

This research developed a system based on IOT concept and technology for car park management. It retrieves parking information from ultrasonic sensors installed at the ceiling of each parking lot and provides online transaction for drivers and management. Drivers can search and track an available parking lot through smart phone application or web browser on smart phone. It saves driver's time to find a vacant parking lot, vehicle energy and reduces wear rate of vehicle. For car park management, it can manipulate parking lots very efficiently though web server and mobile application. This system can summarize pivotal reports in multi dimensions such as idle time, waiting time, and reservation. From Fig.3 shows the green boxes as vacant parking lots for first floor and second floor. The red boxes indicate that they are unavailable due to taken by some drivers or reserved by authorities. This information is provided through Internet of Things concept, as long as users and management are able to access to the internet, wherever what location on earth, they can send and receive data to this system 24/7.

V. CONCLUSION

This study was aimed to develop an IOT-based Car Parking Management System, manipulated via web server and mobile application. It deploys ultrasonic sensor to detect the presence of the vehicle of each parking lot. Data is sent over local network area via copper wire to the database server and webserver. This system is a prototype but high possibly applicable in the real car park and real situation. According to many expert users in the car management business identified that it has high feasibility to implement in the real life application. Moreover, its cost is not too high as same as other commercial systems on the shelf or customization. However, this work should be up scale, fully equipped and test with large size car park. Because, it might be some unexpected parameter that might affect the efficiency of this system such as real

driver's behavior, blue print or directory of each car park and etc. For further development of this research, the next phase will applied more sophisticated image processing technique for more accuracy of the system.

ACKNOWLEDGMENTS

This research was supported by Research and Development Institute, Suan Sunandha Rajabhat University.

REFERENCES

1. Rhodes, C., Blewitt, W., Sharp, C., Ushaw, G., and Morgan, G. (2014). Smart Routing: A Novel Application of Collaborative Path-Finding to Smart Parking Systems. 2014 IEEE 16th Conference on Business Informatics, vol. 2, 14-17 July 2014.
2. Pham, T. N., Tsai, M., Nguyen, D. B., Dow, C., and Deng, D. (2015). A Cloud-Based Smart-Parking System Based on Internet-of-Things Technologies. *IEEE Access*, 3, 1581 – 1591.
3. Huang, Y., Wu, D., You, C., Yang C., Lau S., Hua, K., Chengq, W., Chen, Y., and Hsu, J. Y. (2015). Poster: Exploring the Need for Sensor Learning and Collaboration in IoT-based Parking Systems. Retrieved May 12, 2016, from dl.acm.org/ft_gateway.cfm?id=2817895&type=pdf.
4. Bagula A., Castelli L., and Zennaro M. (2015). On the Design of Smart Parking Networks in the Smart Cities: An Optimal Sensor Placement Model. *Sensors (Basel)*, 15(7), 15443-67.
5. Basavaraju, S. R. (2015). Automatic Smart Parking System using Internet of Things (IOT). *International Journal of Scientific and Research Publications*, 5 (12), 629-632.
6. Chopvitayakun, S. (2017). Hybrid Framework as a Cross Platform Tool For Designing and Developing a Mobile Application Serving the Internship Program Management. *International Journal of Management and Applied Science*, 5 (1), 35-39.



**International
Journal of
Arts and Sciences**



**ACADEMIC
Journal of Science**



**INTERNATIONAL
JOURNAL**
of Business and Management Studies



**HUMANITIES
AND SOCIAL SCIENCES
REVIEW**



**Journal of
Teaching and
Education**



**International Journal of
MULTIDISCIPLINARY
THOUGHT**