# Table of Contents

Committees

Organizing Committee ........................................................................................................... 1

Program Committee members ................................................................................................. 2

Scientific Committee members ................................................................................................. 3

Technical Committee ................................................................................................................ 3

List of Reviewers ....................................................................................................................... 4

Conference Program .................................................................................................................. 6

PICICT 2017 General Chair's Message ..................................................................................... 8

PICICT 2017 Organizing Committee Chair's Message ............................................................. 9

Distinguished Keynote Speakers .............................................................................................. 11

  Keynote Speech 1: Building A Strong Data Science Community as Backbone for Economic Expansion ............................................................................................................... 11

  Keynote Speech 2: Creativity, Training, Innovation, and Change: Let’s Making History Together ........................................................................................................................................... 12

Pre-conference Tutorial & Talks ............................................................................................... 14

Tutorial: Apache Spark: Big Data Analytics Made Fast and Easy expansion ......................... 14

Talk 1: Project /Training Opportunity Platform (P/TOP) .......................................................... 15

Talk 2: enhancing the academic teaching courses to be in line with market wanted skills ....... 17

Post-conference Talks ............................................................................................................... 18

Talk 1: Content & Technology: The Hidden Line .................................................................. 18

Talk 2: Introduction of Learning Technologies in Primary and Secondary Schools - Experiences from Greece .............................................................................................................................................. 19

Talk 3: Let's stack up your interviews! ..................................................................................... 22

A New Set of Features for Detecting Router Advertisement Flooding Attacks ................. 24

Generated Un-detectability Covert Channel Algorithm for Dynamic Secure Communication Using Encryption and Authentication ................................................................. 25

Review on Detection Techniques against DDoS Attacks on a Software-Defined Networking Controller ............................................................................................................................................ 26

Effect of People Around User to WLAN Indoor Positioning System Accuracy ................. 27

Feature Selection with $\beta$-Hill climbing Search for Text Clustering Application ............... 28
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabic Opinion Mining Using Distributed Representations of Documents</td>
<td>29</td>
</tr>
<tr>
<td>WikiDocsAligner: an off-the-shelf Wikipedia Documents Alignment Tool</td>
<td>30</td>
</tr>
<tr>
<td>Automatic Arabic Text Summarization for Large Scale Multiple Documents Using Genetic Algorithm and MapReduce</td>
<td>31</td>
</tr>
<tr>
<td>Arabic Opinion Mining Using Parallel Decision Trees</td>
<td>32</td>
</tr>
<tr>
<td>An Automated System for Monitoring Horses Vital Signs Using Heart Beat Sensors</td>
<td>33</td>
</tr>
<tr>
<td>Absolute Exponential Companding to Reduced PAPR for FBMC/OQAM</td>
<td>34</td>
</tr>
<tr>
<td>Modified Square Rooting Companding Technique to Reduced PAPR for FBMC/OQAM</td>
<td>35</td>
</tr>
<tr>
<td>Near Field Communication Interactive Learning System (NILES) for Blended Learning: A Pervasive Social Networking Services</td>
<td>36</td>
</tr>
<tr>
<td>Precision Agriculture for Greenhouses Using a Wireless Sensor Network</td>
<td>37</td>
</tr>
<tr>
<td>β-Hill Climbing algorithm for sudoku game</td>
<td>38</td>
</tr>
<tr>
<td>Designing Adaptive Control Based on Bacteria Foraging Optimization</td>
<td>39</td>
</tr>
<tr>
<td>Arabic Automatic Speech Recognition Enhancement</td>
<td>40</td>
</tr>
<tr>
<td>An Adaptive Active Contour Model for Building Extraction from Aerial Images</td>
<td>41</td>
</tr>
<tr>
<td>Predicting User Entries by Using Data Mining Algorithms</td>
<td>42</td>
</tr>
<tr>
<td>Recommender Model for Messaging System at MOODLE</td>
<td>43</td>
</tr>
<tr>
<td>Detecting Subjectivity in Staff Performance Appraisals by Using Text Mining</td>
<td>44</td>
</tr>
<tr>
<td>Systematic Approach Based on Best Practices to Develop Requirements Engineering (RE) Guideline in an Organization</td>
<td>45</td>
</tr>
</tbody>
</table>
Committees

Organizing Committee

General Chair
   Dr. Rebhi Baraka, Dean Faculty of IT, Islamic University of Gaza, Palestine.

Program Committee Chair
   Dr. Basem O Alijla, Faculty of IT, Islamic University of Gaza, Palestine.

Scientific committee Chair
   Prof. Alaa Alhalees, Faculty of IT, Islamic University of Gaza, Palestine.

Publicity & Public Relations Chair
   Dr. Tawfiq Barhoom, Faculty of IT, Islamic University of Gaza, Palestine.

Publication Chair
   Dr. Rawia F. Awadallah, Faculty of IT, Islamic University of Gaza, Palestine.

Technical support Chair
   Mr. Raed Saeed Rasheed, Faculty of IT, Islamic University of Gaza, Palestine.

Workshops Chair
   Dr. Iyad H. Al Shamy, Faculty of IT, Islamic University of Gaza, Palestine.

Posters and Demo Chair:
   Dr. Ashraf Y. Maghari, Faculty of IT, Islamic University of Gaza, Palestine.
Program Committee members

**Dr. Adel Khelifi**, College of Computer and Information Technology, the American University of the Emirates, UAE.

**Dr. Manar Abu Talib**, Computer science, University of Sharjah, UAE.

**Dr. Wesam Ashour**, Faculty of Engineering, Islamic University of Gaza, Palestine.

**Dr. Yousif Abu Shaaban**, Faculty of Engineering & IT, Department of Software Engineering, Al-Azhar University, Gaza, Palestine.

**Dr. Mohammed Awadallah**, Faculty of Applied Science, Department of Computer Science, Al-Aqsa University, Gaza, Palestine.

**Dr. Salman Talahmeh**, Planning & Development, Ahliya University, Palestine.

**Dr. Mohammed Azmi Al-Betar**, Department of Information Technology, Al-Huson University College, Al-Balqa Applied University, Irbid, Jordan

**Dr. Khalid Mohammad Jaber**, Basic Sciences Department, Faculty of Science and Information Technology, Al-Zaytoonah University of Jordan

**Dr. Mohamed Ghazal**, University College of Science and Technology, Khan Yonis, Gaza, Palestine.

**Mr. Ramzi Abed**, Faculty of IT, Islamic University of Gaza, Palestine.

**Eng. Ehab Mortaja**, Faculty of IT, Islamic University of Gaza, Palestine.

**Dr. Iyad M. Alagha**, Faculty of IT, Islamic University of Gaza, Palestine.

**Dr. Ashraf Alattar**, Faculty of IT, Islamic University of Gaza, Palestine.

**Dr. Motaz Saad**, Faculty of IT, Islamic University of Gaza, Palestine.

**Dr. Wael F. Al Sarraj**, Faculty of IT, Islamic University of Gaza, Palestine.

**Mr. Abdelkareem M. Alashgar**, Faculty of IT, Islamic University of Gaza, Palestine.

**Mr. Salem G. El-Yazgy**, Faculty of IT, Islamic University of Gaza, Palestine.

**Ms. Lamiya Alsaedi**, Faculty of IT, Islamic University of Gaza, Palestine.
Scientific Committee members

Prof. Dr. Alaa Alhalees, Faculty of IT, Islamic University of Gaza, Palestine.
Prof. Dr. Nabil Hewahi, Faculty of IT, Islamic University of Gaza, Palestine.
Prof. Dr. Hatem M. Hamad, Faculty of engineering, Islamic University of Gaza, Palestine.
Prof. Dr. Mustafa Jarrar, Faculty of Engineering and Technology, Birzeit University, Palestine.
Prof. Dr. Samy Abu Naser, Faculty of Engineering and IT, Alazhar University, Palestine.
Prof. Dr. Habib Hamam, Université de Moncton, Canada.
Dr. Abdalghani Mushtaha, Vrije Universiteit Brussel, Belgium.
Dr. Rebhi Baraka, Faculty of IT, Islamic University of Gaza, Palestine.
Dr. Tawfiq Barhoom, Faculty of IT, Islamic University of Gaza, Palestine.
Dr. Rawia Radi, Faculty of IT, Islamic University of Gaza, Palestine.
Dr. Motaz Saad, Faculty of IT, Islamic University of Gaza, Palestine.

Technical Committee

Mr. Raed Rasheed, Faculty of IT, Islamic University of Gaza, State of Palestine.
Mr. Ramzi Abed, Faculty of IT, Islamic University of Gaza, State of Palestine.
Mr. Arafat Abu-jrai, Faculty of IT, Islamic University of Gaza, State of Palestine.
Mr. Khaled Jaber, Faculty of IT, Islamic University of Gaza, State of Palestine.
List of Reviewers

Nabil M. Hewahi, Professor, College of IT, University of Bahrain, Bahrain
Alaa M. El-Halees, Professor, Faculty of IT, Islamic University of Gaza, Palestine
Samy S. Abu Naser, Professor, Faculty of Engineering and IT Al Azhar University-Gaza, Palestine
Ahmad T. Al-Taani, Professor of Computer Science, Yarmouk University, Jordan
Abualsoud Hanani, Professor of computer systems engineering, Birzeit University, Palestine
Mohammed A. Mikki, Professor, Faculty of Engineering, Islamic University of Gaza, Palestine
Basil M. Hamed, Professor, Faculty of Engineering, Islamic University of Gaza, Palestine
Hala J. El-Khozondar, Professor, Faculty of Engineering, Islamic University of Gaza, Palestine
Rebhi S. Baraka, Associate Professor, Faculty of IT, Islamic University of Gaza, Palestine
Tawfiq S. Barhoom, Associate Professor, Faculty of IT, Islamic University of Gaza, Palestine
Aiman A. Abu Samra, Associate Professor, Faculty of Engineering, Islamic University of Gaza, Palestine
Adel Khelifi, Associate Professor, College of Computer Information Technology, American University in the Emirates, United Arab Emirates
Ihab S. Zaqout, Associate Professor, Faculty of Engineering and IT, Al Azhar University-Gaza, Palestine
Mohammed A. Alhanjouri, Associate Professor, Faculty of Engineering, Islamic University- Gaza, Palestine
Wesam M. Ashour, Associate Professor, Faculty of Engineering, Islamic University of Gaza, Palestine
Ammar M. Abu-Hdrouss, Associate Professor, Faculty of Engineering, Islamic University-Gaza, Palestine
Iyad H Alshami, Assistant Professor, Faculty of IT, Islamic University of Gaza, Palestine
Basem O. Alijla, Assistant Professor, Faculty of IT, Islamic University of Gaza, Palestine
Tamer S. Fatayer, Assistant Professor at Department of Computer Science, Al-Aqsa University, Palestine
Mohammed A. Awadalla, Assistant Professor at Department of Computer Science, Al-Aqsa University, Palestine
Hazem A. Elbaz, Assistant Professor at Department of Computer Science, Al-Aqsa University, Palestine
Motaz KH. Saad, Assistant Professor, Faculty of IT, Islamic University of Gaza, Palestine
Ashraf Y. Maghari, Assistant Professor, Faculty of IT, Islamic University of Gaza, Palestine
Mohammed A. Radi, Assistant Professor at Department of Computer Science, Al-Aqsa University, Palestine
Ashraf M. Alattar, Assistant Professor, Faculty of IT, Islamic University of Gaza, Palestine
Iyad M. Alagha, Assistant Professor, Faculty of IT, Islamic University of Gaza, Palestine
Mohammed A. Ghazal, Assistant Professor, University College of Science and Technology, Palestine
Ahmed Y. Mahmoud, Assistant Professor, Faculty of Engineering and Information Technology Al Azhar University-Gaza, Palestine
Naji Sh. Alzaza, Assistant Professor, Faculty of IT, University of Palestine, Palestine
Alaa Al-Mabhouh, Assistant Professor, Faculty of IT, University of Palestine, Palestine
Yousef A. Hamouda, Assistant Professor at Department of Computer Science, Al-Aqsa University, Palestine.
## Conference Program

### Sunday May 7, 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
</table>
| 09:00 – 12:00 | Apache Spark: Big Data Analytics Made Fast and Easy  
Dr. Iyad Al agha | Room I616, IT Building                                             |
| 12:00 – 12:30 | Short Break                                                           |                        |
| 12:30 – 13:30 | Project /Training Opportunity Platform (P/TOP)  
Dr. Abdalghani Mushtaha & Dr. Mohmmed Ghazal | Al-Quds Conference Hall                                           |
| 13:30 – 14:30 | Break                                                                |                        |
| 14:30 – 15:00 | Enhancing the Academic Teaching Courses to be in Line with Market Wanted Skills  
Dr. Eketerina Tsaranok | Al-Quds Conference Hall                                             |

### Monday May 8, 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 – 09:00</td>
<td>Registration</td>
<td>Main Conference Hall</td>
</tr>
<tr>
<td>09:00 – 09:45</td>
<td>Opening Session</td>
<td>Main Conference Hall</td>
</tr>
</tbody>
</table>
| 09:45 – 10:30 | Keynote Speech 1  
Building A Strong Data Science Community As Backbone For Economic Expansion  
Dr. Philippe Van Impe | Main Conference Hall                                             |
| 10:30 – 10:45 | Exhibition opening (Ribbon Cutting )                                |                        |
| 10:45 – 12:25 | Session 1: Security  
Chair: Dr. Aiman Abu Samra.  
- Elejla, Belaton, Anbar, & Smadi, A New Set of Features for Detecting Router Advertisement Flooding Attacks.  
- Tamer Fatayer, Generated Un-detectability Covert Channel Algorithm for Dynamic Secure communication Using Encryption and Authentication.  
- Zubaydi, Anbar, & Yung Wey, Review on Detection Techniques against DDoS Attacks on a Software-Defined Networking Controller.  
- Firdaus, Ahmad, & Sahibuddin, Effect of People Around User to WLAN Indoor Positioning System Accuracy. | Teba Conference Hall                                             |
| 12:25 – 13:25 | Break                                                                |                        |
| 13:25 – 15:00 | Session 2: Text Mining  
Chair: Dr. Mohammed Ghazal.  
- Alaa El-Halees, Arabic Opinion Mining Using Distributed Representations of Documents.  
- Breem, & Baraka, Automatic Arabic Text Summarization for Large Scale Multiple Documents Using Genetic Algorithm and MapReduce.  
- Ahmed, & El-Halees, Arabic Opinion Mining Using Parallel Decision Trees. | Teba Conference Hall                                             |

### Tuesday May 9, 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
</table>
| 09:30 – 10:15 | Keynote Speech 2  
Creativity, Training, Innovation, and Change: Let’s Making History Together  
Dr. Abdalghani Mushtaha | Teba Conference Hall                                             |
<table>
<thead>
<tr>
<th>Time</th>
<th>Session 1: Wireless Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:15 – 11:55</td>
<td><em>Teba Conference Hall</em>  &lt;br&gt;Chair: Dr. Tamer Fatayer.</td>
</tr>
<tr>
<td></td>
<td>Shaheen, Zekry, Newagy, &amp; Ibrahim, Absolute Exponential Companding to Reduced PAPR for FBMC/OQAM.</td>
</tr>
<tr>
<td></td>
<td>Shaheen, Zekry, Newagy, &amp; Ibrahim, Modified Square Rooting Companding Technique to Reduced PAPR for FBMC/OQAM.</td>
</tr>
<tr>
<td></td>
<td>Singh, &amp; Wai Kam, Near Field Communication Interactive Learning System (NILES) for Blended Learning: A Pervasive Social Services.</td>
</tr>
<tr>
<td></td>
<td>Hamouda, &amp; Elhabil, Precision Agriculture for Greenhouses Using a Wireless Sensor Network.</td>
</tr>
<tr>
<td>11:55 – 12:10</td>
<td>Short Break</td>
</tr>
<tr>
<td>12:10 – 13:30</td>
<td>Session 2: Optimization, Image Processing and Speech Recognition  &lt;br&gt;<em>Teba Conference Hall</em>  &lt;br&gt;Chair: Prof. Alaa El-Halees.</td>
</tr>
<tr>
<td></td>
<td>Al-Betar, Awadallah, Bolaji, &amp; Aljila, B-Hill Climbing algorithm for sudoku game.</td>
</tr>
<tr>
<td></td>
<td>Elaydi, &amp; Al Ghamri, Designing Adaptive Control Based on Bacteria Foraging Optimization.</td>
</tr>
<tr>
<td></td>
<td>Ahmed, &amp; Ghabayen, Arabic Automatic Speech Recognition Enhancement.</td>
</tr>
<tr>
<td></td>
<td>Alattar, &amp; Oudah, An Adaptive Active Contour Model for Building Extraction from Aerial Images.</td>
</tr>
<tr>
<td>13:30 – 14:40</td>
<td>Break</td>
</tr>
<tr>
<td>14:30 – 15:50</td>
<td>Session 3: Recommendation Systems and Software Engineering  &lt;br&gt;<em>Teba Conference Hall</em>  &lt;br&gt;Chair: Prof. Samy Abu Naser.</td>
</tr>
<tr>
<td></td>
<td>Alhaj, &amp; Maghari, Predicting User Entries by Using Data Mining Algorithms.</td>
</tr>
<tr>
<td></td>
<td>Atallah, Barhoom, &amp; Elejla, Recommender Model for Messaging System at MOODLE.</td>
</tr>
<tr>
<td></td>
<td>Abed, &amp; El-Halees, Detecting Subjectivity in Staff Performance Appraisals by Using Text Mining: Teachers’ Appraisals of Palestinian Government Case Study.</td>
</tr>
<tr>
<td></td>
<td>Haron, Yusoff, Sahibuddin, &amp; Osman, Systematic Approach Based on Best Practices to Develop Requirements Engineering (RE) Guideline in an Organization.</td>
</tr>
<tr>
<td>16:00 – 16:30</td>
<td>Closing Session</td>
</tr>
</tbody>
</table>

Wednesday May 10, 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:30 – 10:00</td>
<td>Registration  &lt;br&gt;<em>Main Conference Hall</em></td>
</tr>
<tr>
<td>10:00 – 12:30</td>
<td>Content &amp; Technology: The Hidden Line  &lt;br&gt;Ms. Rawan Damen</td>
</tr>
<tr>
<td>12:30 – 13:00</td>
<td>Short Break</td>
</tr>
<tr>
<td>13:00 – 13:30</td>
<td>Introduction of Learning Technologies in Primary and Secondary Schools - Experiences from Greece  &lt;br&gt;Prof. Dr. Anastasios Koutoumanos (Taso)</td>
</tr>
<tr>
<td>13:30 – 14:00</td>
<td>Let’s Stack Up Your Interviews  &lt;br&gt;Mr. Sven Rymenans  &lt;br&gt;<em>Teba Conference Hall</em></td>
</tr>
</tbody>
</table>
PICICT 2017 General Chair's Message

I am very pleased to welcome you all to the second version of the Palestinian International Conference on Information and Communication Technology (PICICT 2017). We hold our conference in a very hard situation related to the continued siege on Gaza Strip and the travel restrictions preventing the entrance of foreign participants from coming to Gaza Strip and therefore leading to few submissions from outside.

PICICT 2017 is an attempt to bring together interested researchers and technologists to exchange and discuss recent updates and advancements on the various areas of information and communication technology stemmed from their research efforts. The version includes, in addition to the regular paper sessions, two keynote speeches, two workshops, two tutorials, and a software exhibition.

I would like to thank all colleagues who have contributed to the success of the conference including the organizing committee, the scientific committee including the reviewers, and technical support committee. I would like also to thank all authors especially those who submitted papers from abroad and were not able to enter Gaza Strip due to the travel siege. Thanks also to the keynote speakers for their valuable keynote speeches.

Finally, I would like to acknowledge the financial support and the sponsorship of the European Institute for Training and Development (EUTD) who also supported in organizing the Keynote speeches and the workshops, and AlmajdAd for Information Technology for supporting the conference publicity.

Finally, I wish you a maximum benefit attending the conference.

Dr. Rebhi S. Baraka
Associate professor of Computer Science
General Chair of PICICT 2017
Dean Faculty of Information Technology
Islamic University of Gaza
http://site.iugaza.edu.ps/rbaraka
PICICT 2017 Organizing Committee Chair's Message

On behalf of the organizing committee, it is my great pleasure to welcome you all to the 2017 Palestinian International Conference on Information and Communication Technology (PICICT 2017). The Faculty of Information Technology, at the Islamic University of Gaza, Palestine, organizes it. PICICT 2017 aims at providing a dedicated forum gather researchers, academicians, practitioners, students, capacity builders and development professionals to discuss their views on the current trends, challenges, and state-of-the-art solutions related to various issues of Information and Communication Technology (ICT) within the world and Palestine in particular.

I am extremely grateful to our two distinguished keynote speakers: Dr. Philippe Van Impe, Founder - European Data Innovation Hub & Brussels Data Science, and Dr. Abdalghani Mushtaha, Founder & ECO of European Institute for Training and Development - EUTD for accepting our invitation to address the latest research and developments related to Data Science and Bridge the gap between businesses and academia.

This year, the program of PICICT 2017 spans two days from May 8th to 9th, 2017. A total of 24 research papers by authors from several different countries considered to be presented at the PICICT 2017 in 5 interactive sessions. The conference proceeding is indexed by IEEE Xplore. On the sidelines of the conference, two days, pre and post, conference workshop and talks are organized. They are delivered by a range of local and European experts. Also, an exhibition is organized as an opportunity for students to present posters and graduation project's demos at the event. Events aim to serve the community especially students by enhancing their business and technical skills and linking education with industries.

To encourage participation of student authors, we will award the best student poster and demo as well as the best paper award.
I acknowledge the financial support and sponsorship from the EUTD and AlmajdAd. Also, I acknowledge the media sponsorship from the Alkitab TV channel, Alquds TV channel and Felesteen newspaper. Last but not least, I would like to express our appreciation to all authors of submitted papers, program committee members, and reviewers for their valuable efforts and contribution toward the success of this conference.

I hope that you will enjoy a fruitful conference and have a pleasant stay in Gaza, Palestine.

Dr. Basem O. Alijla
Assistant professor of Computer Science
Program Committee Chair of PICICT 2017
Faculty of Information Technology
Islamic University of Gaza
http://site.iugaza.edu.ps/balijla
Keynote Speech 1: Building A Strong Data Science Community as Backbone for Economic Expansion.

**Dr. Philippe Van Impe**, Brussels Data Science Community.

**Biography**

**Philippe Van Impe** is a Founding Partner of the Brussels Data Science Community, a large open community of specialists in data and business. The community's activities aim to bridge the gap between businesses and academia, through regular meetups, training and ‘Data for Good’ projects, where members contribute their skills to work on projects with NGO’s, public institutions and start-ups.

Philippe is also the Founder of the European Data Innovation Hub, which connects and supports data professionals throughout Europe to share and discuss best practices in open data, big data and data innovation.

Philippe is a Social Entrepreneur simultaneously pursuing both a financial & a social return on investment.

**Abstract:**
Every economic expansion is build on innovation and a fast transformation of these breakthroughs into real economic value. In his presentation Philippe will explain how to be innovative by bringing the right groups of people together and make them learn and share by doing real hands-on experiences in workshops and hackathons.

Dr. Abdalghani Mushtaha, European Institute for Training and Development (EUTD).
Tuesday May 9, 2017, 09:30 – 10:15.

Biography

Abdalghani Mushtaha, born on 1980 in Gaza, is a European digital leader and the founder of the European Institute for Training and Development (EUTD), the goal of which is to create a bridge between universities and the ICT industry in Europe. Abdalghani earned his B.Sc. from the Islamic University of Gaza and his Masters and PhD from the University of Brussels.

With over fifteen years of experience both as a web professional, an academic researcher and a lecturer, Abdalghani has worked with many of the industry’s leading organizations. When he is not lecturing or researching at University or working as a consultant for Sony and Sodexo, Abdalghani is investing his time in being a proud father to Dema and Najy and husband to Amani.

Abstract:

Everybody knows that Information Technology is evolving rapidly, so, all of us have to be aware about changes, to plan correctly for the future. Nowadays, innovation is everyone's business. Whether you are a student at university, university lecturer, in a government role, or a teacher in school, everyone is expected to get lean and to be aware about what’s happening in the digital world and to be innovative.

Industry nowadays, to some extent, goes very fast in technological innovation; so, the current jobs in the market require skills, which are not taught to university graduates. According to a European Commission report, 900,000 jobs will go unfilled by 2020 because of this skills' gap. Therefore, University educational system should adapt gradually to align with rapidly evolves in the IT market, to be more involved in the world of industrial
market. Furthermore, universities should integrate and involve their students with the market before graduation by performing some practical and research projects for industrial companies. Accordingly, there are substantial needs for providing continuous training of students by organizing workshops in order to keep up with the market and innovation.

Universities and industries have collaborated for over a century, but the rise of a global fast knowledge has intensified the need for new partnerships that go beyond the traditional funding of discrete projects. Thus, at European Institute for Training & Development (EUTD), we are working very hard to build bridge between industry and university to accelerate the technology innovation, skills development (education and training), adoption of knowledge (innovation and technology transfer), and link good profiles to market through Project / Training Opportunity Platform (P/TOP).

EUTD calls stakeholders (i.e., students and universities) to collaborate towards providing them more projects and opportunities which brought from our current and potential partners from industrial market such as (Sony, Sedeox, canon, Idara, Dell, and others). Let us working together towards the new world of innovation to build history together.
Pre-conference Tutorial & Talks

Tutorial: Apache Spark: Big Data Analytics Made Fast and Easy

Dr. Iyad M. AlAgha, Faculty of IT, Islamic University of Gaza, Palestine.
Sunday May 7, 2017, 9:00 – 12:00.

Biography

Iyad M. AlAgha received his MSc and a PhD in computer science in 2009 from the University of Durham, the UK. He worked for two years as a research associate in the Center of Technology Enhanced Learning at the University of Durham, investigating the use of multi-touch devices for learning and teaching. He is currently working as an assistant professor at the Faculty of Information technology at the Islamic University of Gaza, Palestine. His research interests include semantic web technology, big data analytics, adaptive hypermedia, human-computer interaction and technology enhanced learning.

Abstract:

This tutorial will introduce, over the course of 3 hours, Apache Spark, a lightning-fast cluster computing engine for large-scale data processing. Apache Spark is currently used for data processing and machine learning by many companies and organizations around the globe such as Amazon, Alibaba Taobao, eBay and SK Telecom.

An introduction to Apache Spark and its strengths and applications will be given. Afterwards, the MapReduce model will be briefly explained, focusing on how Apache Spark extends this model to efficiently handle more types of computations. Components of Apache Spark, including Spark SQL, Spark Streaming, MLlib and GraphX will be introduced. Simple applications in Java will be also implemented to demonstrate data processing in Apache Spark in practice. In addition, the tutorial will introduce machine learning algorithms in Spark MLlib.

This tutorial is intended for data analysts and software developers who are interested in data mining and big data applications that require scalable and high-performance processing.
Talk 1: Project /Training Opportunity Platform (P/TOP)

**Dr. Abdalghani Mushtaha**, European Institute for Training and Development (EUTD).

**Dr. Mohamed Ghazal**, European Institute for Training and Development (EUTD).


### Biography

**Mohammed Ghazal** holds a Bachelor in Computer Science from IUG; and a Master from the Web & Information Systems Engineering (WISE) Laboratory of the University of Brussels; and PhD in information science Where he was granted a research assistant grant and Zamalla of UKM from 2010-2013 at National University of Malaysia (UKM). Ghazal works as Lecturer in several universities at Gaza from 2004 until present. After gaining PhD 2015, Ghazal has promoted to Assistant Professor at University of Science and Technology (UCST) which is a permanent employer. Recently, Ghazal works as head of scientific research department at the same place UCST.

Ghazal is a region manager for EUTD, which leads Ghazal to start building good networks and relations with different universities and colleges and their academic staff to adopt the principles of EUTD toward professionalism.
Abstract:
Graduation project in undergraduate and postgraduate study is very important for the next work style once student graduated from college. It offers student the opportunity to combine different disciplines and ideas that he or she has learned during academic life, and learns new skills. It proves to what extent student has gotten talent and abilities that he or she have acquired and refined during presence as an undergraduate or postgraduate student. Therefore, choosing a graduation project is not an easy task, it has to be carefully chosen.

However, students face difficulties in selecting a proper topic which may lead them to propose an international contribution. Where in top current IT jobs, certain skills are required which are not taught to university graduates. According to a European Commission report, 900,000 jobs will go unfilled by 2020 because of this skills' gap. Therefore, it is important to carry out some projects for industry as student graduation projects, to acquire new skills and prepare students to the market.

We at the European Institute for Training and Development (EUTD) have a pioneering initiative which leads to propose solutions for those students who cannot find ideas derived from research gap or practical problems. A Project Training Opportunity Platform (PTOP) is developed by EUTD to be used as a tool to help in overcoming students' problem. The proposed solution aims to build a bridge between international companies (which have research gaps from hot topics) on one side, and both undergraduate and graduate students who are studying IT on the other side.

Therefore, this workshop is about to discuss the aforementioned issues with the stakeholders (who are concerned with the research projects and scientific research). The ultimate goal of this step is to adopt the PTOP as scientific platform from all parties to facilitate the communication between EUTD and potential partners on one side or between EUTD and students or supervisors on the other side.
Talk 2: enhancing the academic teaching courses to be in line with market wanted skills

Dr. Ekaterina Tsaranok, Modern Education & Research Institute-Brussels. Sunday May 7, 2017, 14:30-15:00

Biography

Ekaterina Tsaranok - founder of the goal of which is to foster internationalization through studying modern approaches to higher education in a global context, the challenges of the labor market and thus aiding universities in early recognition and timely adaptation to changes in the global social and academic environment. Ekaterina is accredited at the European Parliament and cooperates with several television and print media as an expert.

Abstract

Fifteen years ago, big data revolutionised the health care world and challenged the longstanding assumptions of shared policies, best practices and funding. Higher education is also now experiencing a shift with data and innovation in practice and policy. We are entering a new era where the possibility to help more students to reach great outcomes - learning well and finishing strong - is greater than ever before. All those changes are going to present many possible alternatives for leadership and for the development of new and powerful modes of learning.
Ms Rawan Damen, Media consultant and filmmaker, Al Jazeera Media Network.
Wednesday May 10, 2017, 10:00 – 12:30

Biography

Ms Rawan Damen, filmmaker and Media consultant – As a trainer she comes from fifteen years of practical and academic experience in documentaries, TV programs and digital storytelling. Holds an MA (with Distinction) in Communications Studies from Leeds University, UK. She as a one-woman-show researched, produced, edited and directed more than 30 hours of TV documentaries, translated to multiple languages, including the internationally renowned award-winning documentary series Al-Nakba. She worked as a senior commissioning producer at Al Jazeera Media Network for ten years supervising over 250 documentaries. Founded and led teams on multiple digital platforms, notably the internationally award-winning project, Palestine Remix, the largest visual interactive website on Palestine. Invited speaker at more than 100 conferences and symposiums, jury member in a number of Arab and international film festivals, and invited specialized trainer in more than 10 countries. Recently, Rawan received the Media Creativity Award by the Arab Thought Foundation in Beirut (Dec 2015).

Abstract

This lecture tackles the role of the rapid change in the information technology in shaping the Palestinian narrative through various media platforms, interactive online and social media. This lecture argues that content and technology has a lot to share and the hidden lines are getting thinner, as Palestinians stories in the past and in the present are shaped with the new techniques those stories are formatted within to reach individuals and communities around the world. The potential of programming and design combined with content will shape the storytelling of Palestine and the future of Palestine in a different way.
Talk 2: Introduction of Learning Technologies in Primary and Secondary Schools - Experiences from Greece

Prof. Dr. Anastasios Koutoumanos (Taso).
Wednesday May 10, 2017, 13:00-13:30

Biography

Dr Anastasios Koutoumanos is the managing Director of Eummena and responsible for the technical coordination of Eummena’s R&D actions to advance, open up, and exchange research outcomes and best practices in the field of learning technologies, professional development, and digital media. He holds a PhD in Software Engineering from the National Technical University of Athens, Greece (1999). His research and scientific expertise is focused on the design, development, utilization, management, and evaluation of processes and resources for learning and personal development. He has been the technical leader for the implementation of the software platforms of the “Digital School” large scale initiative of the Greek Ministry of Education, including the digital educational platform for Greek schools (e-me.edu.gr), the portal of interactive e-books (e-books.edu.gr), and the infrastructure for the national educational repositories of learning resources (photodentro.edu.gr). He is involved in various standardisation activities related to educational technology and has participated as an expert in the European Standardization Committee (CEN) Workshop on Learning Technologies. He has participated in several European funded projects as a primary researcher and team leader. He has guided and consulted organisations from the private and the public sector, including banks, vocational training institutes, and the defense industry to employ ICT-based innovation and technologies for the design and implementation of e-learning solutions, as well as for utilising software engineering methods and processes towards successful deployment of large-scale, open information systems.
Abstract

During the last 5 years, the “Digital School” large scale national initiative of the Greek Ministry of Education (MoE) has been effectively focusing on the modernization of school education in Greece. The “Digital School Platform, Interactive Books, and Learning Object Repository” has been a flagship project within the Digital School initiative for digital educational content for schools. Since its beginning in 2011 it has involved more than 200 teachers, pedagogical and domain experts, and academic professors, and around 80 engineers and technical personnel. Key actions of the project have included:

Action 1: The Greek Digital Educational Platform (e-me):

Design, development and operation of the Greek Digital Educational Platform for all schools, pupils and teachers in primary and secondary education: The e-me platform currently under development- aims at providing a safe working space for pupils and teachers, with a modern and intuitive environment, to share their content, connect, communicate and collaborate with mates, publish their work, download useful apps, and access and exploit efficiently learning resources.

Action 2: Interactive e-textbooks & learning resources

Creation of interactive e-textbooks for all school disciplines in primary and secondary education: All school textbooks are made available online in digital editable format (html), and are being enriched with click-and-play interactive learning resources. Development of a large number of open, reusable learning objects covering a wide spectrum of areas and educational objectives of primary and secondary education; these are initially designed and developed for the purpose of enriching the online versions of e-textbooks. Design, development and operation of the Interactive Books portal, serving as the official portal of the Greek MoE for hosting and distributing the digital school textbooks (ebooks.edu.gr)
**Action 3: The National Digital Repository Infrastructure for Learning**

Resources for schools (Photodentro) Design, development and operation of the Greek National Digital Learning Repositories for hosting, organizing, and distributing learning resources for schools: Photodentro LOR is the cornerstone of the infrastructure, hosting learning objects (photodentro.edu.gr/lor). The Photodentro Repository ecosystem also includes the Photodentro EduVideo (photodentro.edu.gr/video), hosting short length educational videos suitable for in-class use, the Photodentro EduSoft (photodentro.edu.gr/edusoft), hosting learning resources hosting educational software for download, the Photodentro UGC (photodentro.edu.gr/ugc), hosting learning resources developed by teachers, thus representing the user-generated branch of the ecosystem, and the Photodentro OEP (photodentro.edu.gr/oep), hosting Open Educational Practices.

Design, development and operation of the Greek National Aggregator for Educational Content Photodentro (photodentro.edu.gr) a national e-service for harvesting and accumulating educational metadata from various repositories and collections (museums, libraries, audiovisual archives, etc.), thus serving as the central access point to learning resources for schools in Greece.
Talk 3: Let's stack up your interviews!

Mr. Sven Rymenans, Volt's new big data & analytics business unit-Brussels.
Wednesday May 10, 2017, 13:30-14:00

Biography

Sven has 2.5 years of recruitment experience for IT recruitment agencies. He co-founded Volt's new big data & analytics business unit in Brussels, where they help companies hire data scientists, data engineers, machine learning engineers, ... Most of the companies he works for are start-ups who have started booming or larger companies who're investing a lot in R&D.

With a strong interest in junior recruitment, Sven has given presentations at several universities in Belgium, helping graduates in their first job search.

Abstract

In this presentation, Sven will give you an overview of what the value of your CV & motivational letter are and give you valuable insights into how you can increase your visibility to companies. Next to that he'll give more information about how recruiters hire new talent and how you can be found more easily.
Abstracts
Abstract— ICMPv6 is vulnerable to a set of attacks that contributes to preventing IPv6 from being trusted for full implementations on today’s networks. One of these attacks is Router Advertisement (RA) flooding attack by sending a huge traffic toward a victim to consume its resources and stop its services. To detect these attacks, classification processes are applied based on a set of features used to represent the network traffic. This paper proposes a set of representative features depends on a suitable formation of data using a flow representation of the traffic. The proposed features and representation have achieved an acceptable detection ability of the RA flooding attacks using several classification techniques. Moreover, the achieved detection ability might be further improved by extracting more representative features or selecting a subset of them to represent the traffic.
Generated Un-detectability Covert Channel Algorithm for Dynamic Secure Communication Using Encryption and Authentication.

Tamer S. A. Fatayer
Al-Aqsa University, Computer Science Department, Gaza, Palestine
ts.fatayer@alaqsa.edu.ps

Abstract— The keys generated by (symmetric or asymmetric) have been still compromised by attackers. Cryptography algorithms need extra efforts to enhance the security of keys that are transferring between parities. Also, using cryptography algorithms increase time consumption and overhead cost through communication. Encryption is very important issue for protecting information from stealing. Unfortunately encryption can achieve confidentiality not integrity. Covert channel allows two parties to indirectly send information, where the main drawbacks of covert channel are detectability and the security of pre-agreement knowledge. In this paper, I merge between encryption, authentication and covert channel to achieve undetectability covert channel. This channel guarantee integrity and confidentiality of covert data and sending data dynamically. I propose and implement undetectability a covert channel using AES (Advanced Encryption Standard) algorithm and HMAC (Hashed Message Authentication Code). Where this channel is undetectability with integrity and confidentiality agreement process between the sender and the receiver. Instead of sending fake key directly through channel, encryption and HMAC function used to hide fake key. After that investigations techniques for improving undetectability of channel is proposed.

Keywords— Encryption; Authentication; Dynamically; Covert Channel, Confidentiality; Algorithm; Un-Detectability; Fake Key.
Review on Detection Techniques against DDoS Attacks on a Software-Defined Networking Controller

Haider Dhia Zubaydi¹, Mohammed Anbar¹, Chong Yung Wey¹
¹National Advanced IPv6 Centre Universiti Sains Malaysia, Penang, Malaysia
haidardhia@yahoo.com, anbar@nav6.usm.my, chong@usm.my

Abstract—The evolution of information and communication technologies has brought new challenges in managing the Internet. Software-Defined Networking (SDN) aims to provide easily configured and remotely controlled networks based on centralized control. Since SDN will be the next disruption in networking, SDN security has become a hot research topic because of its importance in communication systems. A centralized controller can become a focal point of attack, thus preventing attack in controller will be a priority. The whole network will be affected if attacker gain access to the controller. One of the attacks that affect SDN controller is DDoS attacks. This paper reviews different detection techniques that are available to prevent DDoS attacks, characteristics of these techniques and issues that may arise using these techniques.

Keywords—Software Defined Networking; SDN; DDoS Attacks; DDoS Detection; SDN Controller
Abstract—The ability to check the location of people or mobile devices (MD) in indoor environment has a large number of application. Indoor Positioning System (IPS) utilizes many existing technologies such as radio frequencies, magnetic fields, acoustic signals, thermal, optical or other sensors. WLAN IPS become one of the most favorite solutions because it is already widely exist and provide good accuracy. Fingerprint is one of the methods in WLAN IPS. The performance of this method is greatly affected by received signal strength indicator (RSSI). In fact RSSI value is very dynamic and influenced by environmental conditions inside the room such as walls, ceiling and also human presence. This paper presented an experiment to explore the effect of many people around MD to the RSSI and position error of IPS. People around MD at certain distance and position will be barrier for WLAN signal, therefore the RSSI will decrease. The average of position error because of that effect is 11.34 meter.

Keywords—Fingerprint; Indoor Positioning; Wlan; Rssi; Accuracy; People Presence
Feature Selection with β-Hill climbing Search for Text Clustering Application

Laith Mohammad Abualigah¹, Ahamad Tajudin Khader¹, Mohammed Azmi Al-Betar², Zaid Abdi Alkareem Alyasserí¹,³, Osama Ahmad Alomari¹ and Essam Said Hanandeh⁴,

¹School of Computer Sciences, Universiti Sains Malaysia (USM), Pulau Pinang, Malaysia 11800.
²Department of Information Technology, Al-Balqa Applied University, Jordan.
³ECE/ Faculty of Engineering, University of Kufa, Najaf, Iraq.
⁴Department of Computer Information System, Zarqa University, Zarqa-Jordan.
lmqal5 com072@student.usm.my

Abstract—In the bases of increasing the volume of text information, the dealing with text information has become incredibly complicated. The text clustering is a suitable technique used in dealing with a tremendous amount of text documents by classifying these set of text documents into clusters. Ultimately, text documents hold sparse, non-uniform distribution and uninformative features are difficult to cluster. The text feature selection is a primary unsupervised learning method that is utilized to choose a new subset of informational text features. In this paper, a new algorithm is proposed based on β-hill climbing technique for text feature selection problem to improve the text clustering (B-FSTC). The results of the proposed method for β-hill climbing and original Hill climbing (i.e., H-FSTC) are examined using the k-mean text clustering and compared with each other. Experiments were conducted on four standard text datasets with varying characteristics. Interestingly, the proposed β-hill climbing algorithm obtains superior results in comparison with the other well-regard techniques by producing a new subset of informational text features. Lastly, the β-hill climbing based feature selection method supports the k-mean clustering algorithm to achieve more precise clusters.

Keywords—Unsupervised Feature Selection, β-hill Climbing, K-mean Text document Clustering, Informative features.
Abstract — Nowadays, many people express their opinions using user generated contains such as social media, forums and reviews. Opinion mining is a field of study that extracts sentiments from user generated contents. Because of the complexity of the Arabic language, extracting those opinions are challenging. Better representation of reviews can help to improve extraction of opinions. The traditional way of representing opinion documents is using Bag-of-Words where the word is presented in fixed-length. The problem of this presentation is that it loses the order of the word and it ignores grammatical structure and lexicon-dependent. To overcome these limitations, distributed representations can be employed. It is based on learning vector representations of words, which also called "word embeddings". It can make the performance of natural language processing tasks have better performance with the help of learning algorithms. This representation uses neural networks and makes the learned vectors explicitly encode many linguistic patterns. In this study, we used distributed representations for Arabic opinion mining and compare it with Bag of Words (BOW) representation. We applied them on four benchmark datasets. Then, we used four machine learning methods which are Support Vector Machine, Logistic Regression and Random Forest. Using f-measure metric, we found that, in all datasets and all methods we used in our experiment, the distributed representations have better performance than bag-of- words representation.

Keywords—Opinion mining, Arabic language, Distributed representations, Bag-of-words
Abstract—Wikipedia encyclopedia is an attractive source for comparable corpora in many languages. Most researchers develop their own script to perform document alignment task, which requires efforts and time. In this paper, we present WikiDocsAligner, an off-the-shelf Wikipedia Articles alignment handy tool. The implementation of WikiDocsAligner does not require the researchers to import/export of interlanguage links databases. The user just need to download Wikipedia dumps (interlanguage links and articles), then provide them to the tool, which performs the alignment. This software can be used easily to align Wikipedia documents in any language pair. Finally, we use WikiDocsAligner to align comparable documents from Arabic Wikipedia and Egyptian Wikipedia. So we shed the light on Wikipedia as a source of Arabic dialects language resources. The produced resources is interesting and useful as the demand on Arabic/dialects language resources increased in the last decade.

Keywords—Comparable Corpus, Documents Alignment, Arabic Wikipedia Corpus, Egyptian Wikipedia Corpus
Automatic Arabic Text Summarization for Large Scale Multiple Documents Using Genetic Algorithm and MapReduce

Sulaiman N. Al Breem, Rebhi S. Baraka
Information Technology Department Islamic University of Gaza Gaza, Palestine
snbreem@yahoo.com, rbaraka@iugaza.edu.ps

Abstract—Multi document summarization focuses on extracting the most significant information from a collection of textual documents. Most summarization techniques require the data to be centralized, which may not be feasible in many cases due to computational and storage limitations. The huge increase of data emerging by the progress of technology and the various sources makes automatic text summarization of large scale of data a challenging task. We propose an approach for automatic text summarization of large scale Arabic multiple documents using Genetic algorithm and MapReduce parallel programming model. The approach insures scalability, speed and accuracy in summary generation. It eliminates sentence redundancy and increases readability and cohesion factors between the sentences of summaries. The experiments resulted in acceptable precision and recall scores. This indicates that the system successfully identifies the most important sentences. In Addition to all to that, the approach provided up to 10x speedup score, which is faster than on a single machine. Therefore, it can deal with large-scale datasets successfully. Finally, the efficiency score of the proposed approach indicates that the large data set utilizes the available resources up to 62%.

Keywords—Text Summarization; Parallel Genetic Algorithm; MapReduce; Hadoop; Text Mining
Abstract— Opinion mining is an interested area of research, which epitomize the customer reviews of a product or service and express whether the opinions are positive or negative. Various methods have been proposed as classifiers for opinion mining such as Naïve Bayesian, and Support vector machine, these methods classify opinion without giving us the reasons about why the instance opinion is classified to certain class. Therefore, in our work, we investigate opinion mining of Arabic text at the document level, by applying decision trees classification classifier to have clear, understandable rule, also we apply parallel decision trees classifiers to have efficient results. We applied parallel decision trees on two Arabic corpus of text documents by using parallel implementation of RapidMiner tools. In case of applying parallel decision tree family on OCA we get the best results of accuracy (93.83%), f-measure (93.22) and consumed time 42 Sec at thread 4, one of the resulted rule is الفيلم ضعيف لمجرد احداثه إضافة تمثيل المصري. In case of applying parallel decision tree family on BHA we get the best results of accuracy (90.63%), f-measure (82.29) and consumed time 219 Sec at thread 4, one of the resulted rule is الغرف جميلة والممرات واسعة والنزل مميز.

Keywords— Opinion mining, Decision tree, Classification, Arabic text, Parallel Decision Tree, Machine learning, Sentiment Analysis, Sentiment Classification, Opinion Extraction
An Automated System for Monitoring Horses Vital Signs Using Heart Beat Sensors

Adel Khelifi, Rashid Al Hamli, Saeed Al Tamimi, Rashid Al Ali
College of Computer Information Technology, the American University in the Emirates
Dubai, UAE
adel.khelifi@aue.ae

Abstract— A dire need of an affordable and accessible technology in order to maintain horses’ health can be seen in the animals’ care sector. Technology integration at this level will not only enable users to have access to a reliable tool to measure the heartbeat of the horses but also helps to eliminate the need of costly sensors that are expensive and seldom portable. The main objective of the proposed solution is to monitor vital signs of the horses in the form of maintaining their health by an effective instrument that would help any kind of user with a little knowledge of technology to be able to take care of their horses. The sensors of the proposed system allow transmitting horses’ heartbeat to a Mobile App through Bluetooth. Then, the Mobile App generates instantly statistics and required information about the horse’s heartbeat rate. In addition, the Mobile App sends the horse’s heartbeat to the client’s servers for more analysis to give the owner of the horses a genuine competitive advantage. The results show that any kind of training program that needs to be conducted for the horse can be customized according to the horse’s heart beat and the vital signs that the heartbeat of the horse denotes.

Keywords— Automated System; Mobile and Wireless Communication; Horse Vital Signs; Heart Beat Sensors; Bluetooth
Abstract— Filter Bank Multicarrier with Offset Quadrature Amplitude Modulation (FBMC/OQAM) may be one of the best waveform used in the next generation wireless communication system (5G system). Moreover, The FBMC/OQAM system supports high data rate, low impulse noise and high bandwidth efficiency. However, Similar to Orthogonal frequency-division multiplexing OFDM system, the FBMC/OQAM system are the type of multicarrier modulation system (MCM) which suffers from high peak to average power ratio (PAPR) problem cases reduced power efficiency. In this paper, We propose a nonlinear companding scheme called ‘Absolute Exponential Companding’ (AEXC) to reduced PAPR in FBMC/OQAM system. However, the FBMC/OQAM system is employed with prototype filter bank using square root raised cosine (SRRC) filter. The simulation results show that, The proposed schemes highly effectively reduces the PAPR in the system by compressing the peak signals and expanding the small signals.

Keywords— FBMC/OQAM, PAPR, 5G, MCM, Absolute exponential Companding
Abstract— Multicarrier modulation (MCM) have become a fast developing area in wireless communication system. The filter bank multicarrier with offset quadrature amplitude modulation (FBMC/OQAM) system may be the most popular multicarrier modulation technique used for next generation wireless communication technology 5G. It has several advantages such as supporting high data rate, low impulse noise and eliminating inter symbol interference (ISI), inter-carrier interference. However, the main challenging problems of FBMC/OQAM system is the high peak to average power ratio (PAPR). In this paper, we used Square Rooting Companding Technique (SQRT) to reduce the PAPR in the FBMC system, then we modified the SQRT scheme to new scheme which namely by Rooting Companding Technique (RCT). Moreover, new techniques are analyzed with CCDF characteristics and BER Performances. However, the simulation result shows the proposed RCT schemes given significant improvement in the PAPR reduction and increasing BER performance.

Keywords — FBMC/OQAM, PAPR, 5G, SQRT, RCT, MCM.
Near Field Communication Interactive Learning System (NILES) for Blended Learning: A Pervasive Social Networking Services

Manmeet Mahinderjit Singh, Chiang Wai Kam
School of Computer Sciences, Universiti Sains Malaysia (USM), Pulau Pinang, Malaysia 11800.
manmeet@cs.usm.my, maxsidhu@gmail.com

Abstract— Nowadays, e-learning has emerged as a prospective solution to the learning process. E-learning is known as a learning tool which based on technology to deliver learning material electronically through computer network. The involvement of the students and the lecturers in the existing learning system is not interactive as they use it as a medium to deliver notes and receive notes only. The traditional attendance system which passes the attendance sheet around the class or by calling names is also not productive and time consuming to process the data into attendance statistics. Therefore, an interactive learning system embedded with NFC attendance system using NFC enabled smartphone known as NFC Interactive LEarning System (NILES) is proposed to take attendances and lecturers can conduct their classes in a more interactive way in school, college or university through the usage of social media and blended learning tools. The proposed solution can provide a convenient and portable classroom learning system to the universities and colleges to improve the interaction learning process among students and reduce the workload of lecturers in processing the attendance statistics. This becomes the characteristics of Pervasive Social Networking (PSN).

Keywords — Near Field Communication (NFC); Sensor-Attendance System; Pervasive Social Networking (PSN); Blended Learning; Cloud Services; Ubiquitous
Abstract— Agriculture is one of the most crucial needs of the life since it supports human and animals with food supplies and benefits the human employment and the national economy. Wireless Sensor Network (WSN) has recently applied in precision agriculture to improve the crop yields and apply the agricultural resources at right time and place. In this paper, Greenhouse Smart Management System (GSMS) using WSNs is designed and developed to automatically control, manage and monitor the agricultural parameters and activities inside the greenhouses. The ambient relative humidity and temperature of the greenhouse are measured using sensor nodes. When the sensed parameters exceed threshold values, the irrigation and cooling activities are triggered by activating the fan and water pump devices. GSMS includes also an algorithm to compute the period of irrigation and cooling according to the measured agricultural parameters. Hardware and software for the proposed GSMS are developed in this paper. The results show that the GSMS can save the agricultural resources and improve the crop yields, compared with other traditional schemes.

Keywords—Wireless Sensor Networks; Precision Agriculture; Irrigation; Microcontroller; Greenhouse; Android
β-Hill Climbing algorithm for sudoku game

Mohammed Azmi Al-Betar¹, Mohammed A. Awadallah², Asaju La’aro Bolaji³, Basem O. Alijla⁴

¹Department of Information Technology, Al-Balqa Applied University, P.O. Box 50, Al-Huson, Irbid, Jordan
²Department of Computer Science, Al-Aqsa University, P.O. Box 4051, Gaza, Palestine
³Department of Computer Science, Federal University Wukari, P. M. B. 1020, Wukari, Taraba State, Nigeria.
⁴Faculty of Information Technology, Islamic, University of Gaza, Gaza, Palestine
mohbetar@bau.edu.jo, ma.awadallah@alaqsa.edu.ps, lbasaju@fuwukari.edu.ng, balijla@iugaza.edu.ps

Abstract— In this paper, β-Hill Climbing algorithm, the recent local search-based meta-heuristic, are tailored for Sudoku puzzle. β-Hill Climbing algorithm is a new extended version of hill climbing algorithm which has the capability to escape the local optima using a stochastic operator called β-operator. The Sudoku puzzle is a popular game formulated as an optimization problem to come up with exact solution. Some Sudoku puzzle examples have been applied for evaluation process. The parameters of the β-Hill Climbing is also studied to show the best configuration used for this game. β-Hill Climbing in its best parameter configuration is able to find solution for Sudoku puzzle in 19 iterations and 2 seconds.

Keywords— β-Hill Climbing; Optimization; Sudoku Puzzle; Artificial Intelligent; Local Search
Abstract— This paper presents a model reference adaptive control (MRAC) based on bacteria foraging optimization algorithm (BFOA) to control maglev model CE152 which is unstable nonlinear system. An adaptive controller is designed to keep the magnetic ball suspended in the air counteracting the weight of the object. A MRAC based on BFOA to control of this system is designed and simulated using Matlab/Simulink. The results are compared with Fuzzy Logic (FL) control, and Fuzzy Logic based Genetic Algorithm (GA) control. The proposed approach outperformed all other approaches in terms of overshoot, rise and settling time and steady state error.

Keywords- MRAC, BFOA, Maglev System CE152
Abstract— In this paper, we propose three approaches for Arabic automatic speech recognition. For pronunciation modeling, we propose a pronunciation variant generation with decision tree. For acoustic modeling, we propose the Hybrid approach to adapt the native acoustic model using another native acoustic model. Regarding the language model, we improve the language model using processed text. The experimental results show that the proposed pronunciation model approach has reduction in WER around 1%. The acoustic modeling reduce the WER by 1.2% and the adapted language modeling show reduction in WER by 1.9%

Keywords— Automatic Speech Recognition, Pronunciation Modeling, Acoustic Modeling, Language Modeling
Abstract—Building extraction from aerial images is one of the recent topics of remote sensing used in many applications such as urban planning, disaster management, military planning, and Geographic Information Systems (GIS). One of the commonly used approaches in building extraction is Active Contour Model (ACM), also called snake model, for its ability to extract contours of structured and unstructured shapes of objects. However, using traditional ACM model in building extraction faces the problem of narrowly concave contour regions. In this research, we propose to solve the deep concavities problem with the use of a concavity index which adaptively determines the rigidity coefficient of the snake points located in the deeply narrow segments of the contour. Our adaptive model was tested on different sets of buildings extracted from aerial images. Results were evaluated using two evaluation approaches. One in terms of accuracy, precision and recall, and the other in terms of the Error Distance Ratio (ER_d) which is the average ratio of distance between each snake point and the true edge map point (by pixels). Result were compared with the GVF snake model in terms of both accuracy and execution time.

Keywords—Building Extraction, ACM Model, Snake Model, GVF Model.
Predicting User Entries by Using Data Mining Algorithms

Basel A. Alhaj, Ashraf Y. A. Maghari
Faculty of Information Technology Islamic University of Gaza Gaza, Palestine
baselhaj@gmail.com, amaghari@iugaza.edu.ps

Abstract—The information systems are widely spread in most official institutions, and become certified in all areas of our life such as education, health and entertainment. Usability is one of the most important factors, which encourages users to deal with these systems or refuse it. Data mining is the process of finding correlations or patterns among dozens of fields in large relational databases. In this paper we analyze the stored data in database of Palestinian Government decisions system in order to study the relationship between some attributes. Accordingly, we can find patterns that help us to make the system more user-friendly by offering suggestions to the users during data entry process. Naive Bayes, Rule Induction, K-NN, and Decision Tree methods are applied to the stored data in order to produce a prediction model that predicts entries to the user during the entry process, which can make the entry system more user-friendly. The experiment result shows the Naïve Bayes is the best model among the other techniques by achieving the highest accuracy of 68.41%. Future efforts can apply this model in the Government decisions system of Palestinian Ministers Council in Gaza.

Keywords—Usability; Data Mining; Recommender Systems; Entry Prediction.
Recommender Model for Messaging System at MOODLE

Rasha R. Atallah¹, Tawfiq S. Barhoom², Omar E. Elejla³
¹Faculty of Computer science and Information Technology, University of Malaya, Malaysia
²Information Technology College, Islamic University of Gaza, Gaza, Palestine
³School of computer science, Universiti Sains Malaysia
rashaatallah@siswa.um.edu.my, tbarhoom@iugaza.edu, ooe14_com063@student.usm.my

Abstract—E-learning systems are powerful way for enriching learning and teaching process. With the spread of this culture, there is a need for Learning management system as MOODLE, aTutor, canvas and Sakai. Modular Object-Oriented Dynamic Learning Environment (MOODLE) allows students and instructors to interact easily and effectively in various ways, especially via private messaging system. In order to make this feature more convenient for both students and instructors, this research proposed a model that integrated within messaging system of MOODLE to filter unwanted messages, recommend a material for students, and to help them finding answers to their questions which are founded on the message. The problem of this research is how to build a model to prevent message which contains taboo words and send recommended material to students according to their questions. This new model will make it easier for students to find information and materials they are looking for, or asking about and at the same time it will keep instructors’ mailbox clean of any unwanted irrelevant messages. The research methodology consists of four stages start from stating the theoretical foundation, then designing the model functions, building the model's functions, and finally evaluating the Model. The model was applied at University of Palestine on six courses with various natural of materials; some of these materials are isolated topics. In this type of courses the accuracy of the system was high. On the other hand, there are some courses in which their topics are integrated with each other, and the accuracy was less than the other type of materials, but in general the whole system’s accuracy is 96.66% and the reliability of the system is 92.55%. Finally, the model is founded to improve using message in the MOODLE, and the model actually solved the problem of this research.

Keywords—E-learning, Message system in MOODLE, Filter message, Information Retrieval.
Abstract— The objective of this work is to propose a text mining based approach that supports Human Resources Management (HRM) in detecting subjectivity in staff performance appraisals. The approach detects three domain-driven clues of subjectivity in reviews, where each clue represents a level of subjectivity. A considerable effort has been directed to detecting subjectivity in opinion reviews. However, to the best of our knowledge, there is no previous work that detects subjectivity in staff appraisals. For proving our approach, we applied it to the teachers’ appraisals of the Palestinian government. According to our experiments, we found that the approach is effective regarding our evaluations; where we used: expert opinion, precision, recall, accuracy and F-measure. In the first level, we reached the F-measure of 88%, in the second level, we used expert staff’s opinion, where they decided the percentage of duplication to be 85% and in the third level, we achieved the best average F-measure of 84%.

Keywords: Staff Appraisal; Subjectivity Detection; Opinion Mining; Text Mining; Human Resources Management.
Abstract—Best practices in developing Requirements Engineering are not new. They are easily comprehended by experts familiar to Requirements Engineering. However, for IT Personnel that are new to this field, understanding the process may pose major challenges. Thus, a Requirements Engineering Best Practices Work Flow was developed as a tool to assist in the development of Requirements Engineering. The work flow consists of four phases: Exploratory, Development, Measurement and Experts panel review. Hopefully, this Requirements Engineering Best Practices Work Flow will be a practical and helpful tool to any IT Personnel in developing Requirements Engineering in the organization.