

# **2013 Taibah University International Conference on Advances in Information Technology for the Holy Quran and Its Sciences (NOORIC 2013)**

**Al-Madinah, Saudi Arabia  
22-25 December 2013**



**IEEE Catalog Number: CFP1317V-POD  
ISBN: 978-1-4799-2824-8**

# **2013 Taibah University International Conference on Advances in Information Technology for the Holy Quran and Its Sciences**

## **NOORIC 2013**

### **Table of Contents**

Preface.....	xiv
Message from President of Taibah University.....	xv
Message from Vice-President	
for Postgraduate Studies and Research.....	xvi
Message from Organizing Committee Chair.....	xvii
Message from Scientific Committee Chair.....	xviii
Conference Organization.....	xix
Reviewers.....	xxiv
Keynotes.....	xxv

---

### **Quran Security and Authentication**

Protection Enhancement for Data in Quran Applications from Unauthorized Modifications .....	1
<i>Omer Mohammad Ahmad Abu Shqeer and Mohammad Ali Moh'd Bani Younes</i>	
A Framework for Quranic Verses Authenticity Detection in Online Forum .....	6
<i>Thabit Sabbah and Ali Selamat</i>	
Real-Time Interactive Verification of Quran Words in the Web Contents .....	12
<i>T.M. El-Sakka</i>	
Information System Security Management for the Holy Quran: An Approach Towards Reliability of the Holy Quran Online Applications .....	18
<i>Azah Anir Norman and Norizan Mohd Yasin</i>	

Localization Watermarking for Authentication of Text Images in Quran with Spiral Manner Numbering .....	24
<i>Syifak Izhar Hisham, Afifah Nailah Muhammad, Jasni Mohamad Zain, and Gran Badshah</i>	
Exploiting Digital Watermarking to Preserve Integrity of the Digital Holy Quran Images .....	30
<i>Fajri Kurniawan, Mohammed S. Khalil, Muhammad Khurram Khan, and Yasser M. Alginahi</i>	
A Watermarking Application for Authentication of Holy Quran .....	37
<i>T. Tuncer, F. Ertam, and E. Avcı</i>	
A Zero-Watermarking Verification Approach for Quranic Verses in Online Text Documents .....	42
<i>Yasser M. Alginahi, Omar Tayan, and Muhammad N. Kabir</i>	
Secure Data Transmission of Holy Quran Using Controlled Chaotic Dynamics .....	47
<i>Abdelkrim Boukabou and Mohamed Amine Khelifa</i>	
Techniques to Preserve the Integrity of the Electronic Versions of the Nobel Quran .....	52
<i>Izzat M. Alsmadi</i>	
Securing the Digital Script of the Holy Quran on the Internet .....	57
<i>Mostafa G.M. Mostafa and Ibrahim M. Ibrahim</i>	
Authentication of Electronic Version of the Holy Quran: An Information Security Perspective .....	61
<i>Mohd Faiz Hilmi, Mohammed Fadzil Haron, Omar Majid, and Yanti Mustapha</i>	

## **Learning Technologies for the Holy Quran and Its Sciences I**

MOQEU: A Moodle-Based Quran E-University .....	66
<i>El-Shaimaa Nada, Ahmed A. Ahmed, and Mahmoud Abd-Allah</i>	
Offering a Guided Learning of Quranic Knowledge to the Seekers through the Internet .....	72
<i>Shamim Ahmad and Tameem Ahmad</i>	
Collaborative Learning Environment with Think-Pair-Share Method and Learning Tools for Learning Arabic Online .....	77
<i>Omar Bin Majid, Mohd Faiz Hilmi, Nuraini Abdul Rashid, Sharifah Mashita Syed-Mohammad, Nurul Malim, and Zurinahni Zainol</i>	
A Model for Implementing E-Teaching Objects for the Holy Quran and Related Sciences Using Animations .....	83
<i>Abdullah Ahmad Basuhail</i>	

Designing Instructional Materials for Teaching Surahs and Duas for Elementary School Students in Turkey .....	89
<i>Yalin Kilic Turel, Cigdem Gulmez, and Rahime Kavak</i>	
Intelligent Systems for Qur'anic Learning Environment: A Pedagogical Framework for Futuristic Qur'anic Classroom .....	95
<i>Raja-Jamilah Raja-Yusof and Zulkifli Mohd Yusoff</i>	
Learning System for the Holy Quran and Its Sciences for Blind, Illiterate and Manual-Disabled People .....	101
<i>Samir A. Elsagheer Mohamed, Allam Shehata Hassanin, and Mohamed Tahar Ben Othman</i>	
Virtual Learning System (Miqra'ah) for Quran Recitations Targeting Blind, Illiterate, and Manual-Disabled Students .....	107
<i>Samir A. Elsagheer Mohamed, Allam Shehata Hassanin, and Mohamed Tahar Ben Othman</i>	
Enhancing Computer Accessibility for Disabled Users: A Kinect-Based Approach for Users with Motor Skills Disorder .....	113
<i>Loay Alzubaidi, Ammar Elhassan, and Jaafar Alghazo</i>	
Quran Player Based on Brain Computer Interface .....	118
<i>Mohammed J. Alhaddad, Mahmoud I. Kamel, and Dalal M. Bakheet</i>	
Spoken Arabic Digits Recognition Based on (GMM) for E-Quran Voice Browsing: Application for Blind Category .....	123
<i>Nacereddine Hammami, Mouldi Bedda, Nadir Farah, and Raouf Ouanis Lakehal-Ayat</i>	
Towards Improving Quran Memorization Using Mind Maps .....	128
<i>Entesar A. Al-Mosallam</i>	
Video Replacement with Audio Plus Kinect-Based Gestures for Qur'an E-Learning to Reduce Network Traffic .....	133
<i>Saqib Rasool, Muhammad Suhail Amir, Usman Asghar, Hafiz Tariq, Mudassar Iqbal, and Arooj Ejaz</i>	

## **Web, Mobile, and Game Applications for Quran I**

Towards a Comprehensive Online Portal and Mobile Friendly Qur'an Application .....	138
<i>Zameer Ahmed Adhoni, Husam Al Hamad, Abdul Ahad Siddiqi, and Latifa El Mortaji</i>	
Tajweed Race Online Game via Facebook Platform .....	144
<i>Syarilla Iryani A. Saany, M. Nordin, A. Rahman, Norkhairani Abd Rawi, and A. Izzuddin Yusof</i>	

A Framework for Motivating Children to Learn Reading Al-Quran Using Persuasive Mobile Game Technology .....	149
<i>Amirah Mohamed Shahiri and Wahidah Husain</i>	
Easy Learning of Quran Using Mobile Devices for Blind and Visually Impaired .....	155
<i>Wafa Basit and Nuzhat Sultan</i>	
A Study of Users' Perceptions Toward Mobile Dua and Zikr for Hajj (MDZ4H)	
Usability .....	159
<i>Ahmed Sheikh Al-Aidaroos, Abdul Nasir Zulkifli, and Ariffin Abdul Mutalib</i>	
Role of 3D as a Tool for the Holy Quran Education .....	165
<i>Manswr Alasmari, Sarah Ali, and Nor Rofeah Bt. Abdullah</i>	
A Serious Game for Inculcating Islamic Values in Children .....	172
<i>Samiullah Paracha, Sania Jehanzeb, and Osamu Yoshie</i>	
Random Animated Transition Using Quranic Verses .....	178
<i>Fakhrul Hazman Yusoff, Marina Ismail, and Mohd Yunus Mohad Yussof</i>	
Digital Game-Based Learning for Low Functioning Autism Children in Learning Al-Quran .....	184
<i>Nurul Nadhrah Kamaruzaman and Nazean Jomhari</i>	
NOOR eMashaf Application for Android-Based Tablets: Concept and Design .....	190
<i>Mohamed Menacer, Amar Arbaoui, and Billel Arbaoui</i>	
Feature Analysis of Android-Based Holy Quran Applications .....	194
<i>Kamal Z. Zamli, Rozlina Mohamed, Rohani Abu Bakar, and Abdulrahman Al-Sewari</i>	

## **Natural Language Processing for Quran and Its Sciences I**

Word Sense Disambiguation for English Quranic IR System .....	199
<i>Sabrina Tiun, Hamed Zakr, Masnizah Mohd, Norazlinda Zainal Abidin, and Ahmad Irfan Ikmal Hisham</i>	
Quranic Computation: A Review of Research and Application .....	203
<i>Rahmath Safeena and Abdullah Kammani</i>	
Using Active Learning in Text Classification of Quranic Sciences .....	209
<i>Mohamed Goudjil, Mouldi Bedda, Mouloud Koudil, and Noureddine Ghoggali</i>	
A Standard Model of Sciences around Koran .....	214
<i>Benaissa Khireddine and Balla Amar</i>	
Data Set Generation for the Attributes of the Words of the Holy Quran:	
Information Retrieval System for E-Learning .....	224
<i>Haq Nawaz and Yasir Saleem</i>	
Similarity Evaluation of English Translations of the Holy Quran .....	228
<i>Mohd Zamri Murah</i>	

Discovering the Thematic Structure of the Quran using Probabilistic Topic Model .....	234
<i>Muazzam Ahmed Siddiqui, Syed Muhammad Faraz, and Sohail Abdul Sattar</i>	
Ontology Development for Zikr and Doa Al-Ma'thur at Wisdom Level .....	240
<i>Roslina Othman and Siti Fatimah Mohd Tawil</i>	
Using Ontology for Associating Web Multimedia Resources with the Holy Quran .....	246
<i>Yasser Abdelhamid, Mostafa Mahmoud, and Tarek M. El-Sakka</i>	
A Topical Classification of Quranic Arabic Text .....	252
<i>Mohammed N. Al-Kabi, Belal M. Abu Ata, Heider A. Wahsgeh, and Izzat M. Alsmadi</i>	
Context-Sensitive Arabic Spell Checker Using Context Words and N-Gram Language Models .....	258
<i>Majed M. Al-Jefri and Sabri A. Mahmoud</i>	
Keyword and Chapter Relationship Analysis in the Tafseer of Al-Quran .....	264
<i>Puteri N.E. Nohuddin, Stephanie Chua, and Siti Rohaidah Ahmad</i>	
Mining Topical Clusters and Topical Associations from the Holy Qur'an .....	270
<i>Tariq Mahmood, Nauman Atique, Aimen Razzaq, Mina Kazmi, and Rida Akhtar</i>	
Mapping of Biological Sciences with Quran and Ahadith: An Ontology Approach .....	276
<i>Mohammed Mahmood Ali, Mohammed Abdul Rasheed, and Khaja Moizuddin Mohammed</i>	
A Rule-Based Annotation System to Extract Tajweed Rules from Quran .....	281
<i>Auhood Alfaries, Manal Albahlal, Manal Almazrua, and Amal Almazrua</i>	
Building Standard Dataset for Quran Tafseer .....	287
<i>Mohammed Bakri Bashir, Muhammad Shafie A. Latiff, and Amin Mohammed Salih</i>	
Artificial Intelligence Techniques for Extracting Individuals Recitation of the Holy Quran from Its Combinations .....	292
<i>Mostafa Mahmoud and Iman Hassan</i>	
Referencing Qur'an Verses and Ahadith on World Wide Web Using Microdata .....	298
<i>Saqib Rasool, Fatima Iqbal, and Attia Ali Malik</i>	
A Qur'anic Code for Representing the Holy Qur'an (Rasm Al-'Uthmani) .....	304
<i>Khaled M.S. Foda, Ahmed Fahmy, Khaled Shehata, and Hanady Saleh</i>	
Approaches to Retrieve Verses of the Holy Quran Based on Full Meaning .....	310
<i>Fadi A. O. Najadat and Ghassan G. Kanaan</i>	
Harmony of Words of Allah in the Holy Qur'an .....	316
<i>Musa Atas and Ahmet Emre Tekeli</i>	

A Framework for Unit of Interest Meta Data Analysis for Understanding the Message of Quran .....	321
<i>Syed Marghoob Alam, Muhammed Ali, Atif Khan, Javed Khan, and Faisal Khan</i>	

## **Hardware and Protocols for Quran**

Financing IT Tools for Protecting Islamic Literature .....	325
<i>Mohammed Altaf Ahmed and Mohammed Abdul Samad</i>	
QrnPro: New Processor Architecture for Accelerating Quran Applications .....	331
<i>Mostafa I. Soliman</i>	
HQTP: Holy Quran Transfer Protocol .....	339
<i>Heider A. Wahsheh, Yarub A. Wahsheh, and Reem A. Wahsheh</i>	
Adaptive Switching of Traffic between WebRTC and WebSocket Based on Battery Status of Portable Devices .....	345
<i>Saqib Rasool and Hamid Mukhtar</i>	
Quran-on-Chip (QoC): An Embedded System Framework and Design for Electronic Quran Dissemination for Internet-Enabled Devices .....	352
<i>Omar Tayan, Muhammad N. Kabir, and Yasser M. Alginahie</i>	

## **Cloud Computing for Quran Sciences Resources**

Grid-Based Information Retrieval Architecture for Quran Tafseer Sources .....	356
<i>Muhammad Shafie A. Latiff, Mohammed Bakri Bashir, and Yahaya Coulibaly</i>	
Concepts and Architecture of a Dedicated Virtual Learning Environment for Quran and Its Sciences .....	362
<i>Mohamed Menacer, Amar Arbaoui, and Ali Al Mogbel</i>	
Arabic Islamic Manuscripts Digitization Based on Hybrid K-NN/SVM Approach and Cloud Computing Technologies .....	366
<i>Hamdi Hassen and Maher Khemakhem</i>	
Resource Management Based on Agent Technology in Cloud Computing .....	372
<i>Taha Chaabouni and Maher Khemakhem</i>	

## **Knowledge Base for Quran Sciences**

Towards a Knowledge-Based Quran Translation: A Conceptual Model .....	376
<i>Abdullah Kammani and Rahmath Safeena</i>	
Rules and Natural Language Pattern in Extracting Quranic Knowledge .....	381
<i>Saidah Saad, S. Azman Mohd Noah, Naomie Salim, and Hakim Zainal</i>	
Design Concepts of a KnowledgeBase System for Research and Studies in Quran and Its Science .....	387
<i>Amar Arbaoui and Mohamed Menacer</i>	

Quranic Knowledge Extraction: A Statistical Approach .....	391
<i>Razieh Haghighi, Adnan Hassan, Nahid Abbasi, and Ola Maali</i>	

## **Quality and Standards of the Holy Quran Sciences Resources**

---

Cyber Issues with Respect to Quran and Sunnah .....	396
<i>Mohammad Ahsan Chishti, Shaima Qureshi, and Ajaz Hussain Mir</i>	
Requirements Assessment for Organizations, Users, Software Developers, and Funders for the Propagation of the Holy Quran and Its Sciences .....	402
<i>Hafidh Alsamarrai, Omar Tayan, Maysam Abbold, and Yasser M. Alginahi</i>	

## **Voice Recognition I**

Arabic Phonemes Transcription Using Learning Vector Quantization: “Towards the Development of Fast Quranic Text Transcription” .....	407
<i>Khalid M.O. Nahar, Wasfi G. Al-Khatib, Moustafa Elshafei, Husni Al-Muhtaseb, and Mansour M. Alghamdi</i>	
Voice Search in the Holy Quran .....	413
<i>Guezouli Larbi</i>	
Towards the Identification of Quran Reciters .....	419
<i>Mohammad Alshayeb, Albara Hakami, Abdullah Altokhais, Abdulrahman Almousa, Mohammed Albarak, and Omar Alessa</i>	
Towards Automating the Evaluation of Holy Quran Recitations: A Pattern Recognition Perspective .....	424
<i>Nur Ramizah Ramino Rashid, Ibrahim Venkat, Faten Damanhoori, Norlia Mustaffa, Wahidah Husain, and Ahmad Tajudin Khader</i>	

## **Learning Technologies for the Holy Quran and Its Sciences II**

The Role of e-Learning Software in Teaching Quran Recitation .....	429
<i>Ahmed Ragheb Ahmed Mahmoud</i>	
Virtual Learning Environment in the Service of the Holy Quran and Its Sciences .....	441
<i>Sultan Musfer Mubark Saadi</i>	
The Use of e-Learning Methods in Teaching Tajweed of Holy Quran .....	448
<i>Yasir Mohammed Saeed Abdul-Majid</i>	
Proposal for Developing a Virtual Environment for Teaching and Learning the Holy Quran and Its Sciences .....	459
<i>Ali Najem</i>	

Interactive Program for the Quran Science Course at the Open University of Sudan .....	470
---	-----

*Abed Elbasit Mohammed Sharif Mohammed, Abu Elhaytham Elshaik,  
and Mohamed Hamadn Alla Ramli*

Employing Modern Technology in Teaching the Holy Quran to Deaf Students .....	489
---	-----

*Zakaria Ibrahim Saleh Azzamilli and Hasan N. K.Bazazoo*

## **Web, Mobile, and Game Applications for Quran II**

Web Based Multimedia Adaptive e-Learning System for Teach Miracles of the Holy Quran .....	525
---	-----

*Abdul Hamid M Ragab, Amin Youssef Noaman, and Hassan Samir Al-Najjar*

Using Mobile Application in Teaching Correct Recitation of the Holy Quran .....	535
---	-----

*Mahmoud Elsayess and Salwa Elsayed Hamada*

A Comprehensive Electronic Encyclopaedia Prototype for the Holy Quran and Its Sciences .....	552
---	-----

*Mohamed Ben Jemaa*

## **Role of IT for the Service of the Holy Quran**

Use of Information Technology in the Teaching of Quran Recitation (Qira'at) - Electronic Miqrah as a Model .....	593
---	-----

*Ahmad Adnan Yassin AlZoubi*

Quality of Video and Translation of Quranic Stories and Their Technical Applications between Dawa'a Values and Risk of Belief Violations .....	622
---	-----

*Mohamed Abdeddayam Ali Sulaiman Algendy*

The Duration of Madd and Ghonna in Recitation of Quran .....	634
--	-----

*Basem Hamdan H Allehyani*

The Role of Computers in the Language of Qur'an: A Case Study of Maqsurah Ibn Duraid Book .....	639
--	-----

*Atotileto Aminu Abdussalam, Mohammed Najib Jafar, and AlHajj Ahmed Algazali*

## **Natural Language Processing for Quran and Its Sciences II**

KSUCCA the Corner Stone for Studying the Meanings of the Holy Quran Words in the Light of Distributional Semantic Models .....	652
---	-----

*Maha Sulaiman Alrabiah, AbdulMalik Al-Salman, and Eric Atwell*

Design and Optimization of an XML-based Grammatical Structure of the Holy Quran .....	660
--	-----

*Ayoub Kadim, Azzeddine Lazrek, and Ould Mohamed Elhadj Yahya*

Capturing the Common Syntactical Rules for the Holy Quran: A Data Mining Approach .....	670
<i>Dia Eddin Mohammad Asad AbuZeina and Mahmoud Hasan Alsaheb</i>	
Advanced Search Feature in Noble Quran .....	681
<i>Assem Chelli, Amar Balla, and Taha Zerrouki</i>	

## **Quality and Standards of the Holy Quran Sciences ResourcesII**

Electronic Management of Quran Sites .....	700
<i>Rokeia Boussenan</i>	
The Use of Indexing Information and Virtual Online Reading in the Digitization of the Holy Quran 's Manuscripts – Case Study Moroccan National Library .....	724
<i>Lahcen Taouchikht B. Youssef</i>	
A Proposed Quality Measure Standards for IT Based Systems Serving the Holy Quran Domain .....	774
<i>Khaled Mostafa ELsayed Elsayed</i>	
The Evaluation of Educational and Technical Standards for Quran Teaching and Learning Sites .....	780
<i>Aisha Blehsh Mohamed Alomary and Fayza Abu Bakr Mohammed Fallata</i>	
Exploiting Computing Technologies in the Follow-Up of Quran Projects .....	799
<i>Abdelali Haouati</i>	
Matrix Quality Standards and Accreditation Methodology for Software Tools Related to Quranic Sciences Studies .....	809
<i>Mohammed Sulaiman Elhassan</i>	
Correcting the Translations of the Holy Qur'an and its Needs of Information Technology: A Case Study .....	847
<i>Zubaidah M. Kheir Hasan Ereksoussi</i>	

## **Voice Recognition II**

Electronic Memorizer .....	863
<i>Halya Saleh Hussein Al Hanash and Sameha Ahmed Ali Alshagsy</i>	
<b>Author Index .....</b>	<b>871</b>