

# Fatima A. Boujarwah

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## EDUCATION

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| <b>Georgia Institute of Technology (GT)</b><br>Doctor of Philosophy in Computer Science, Area of Specialization: Human Computer Interaction<br><b>PHD Dissertation:</b> Facilitating the Authoring of Multimedia Social Problem Skills Instructional Modules<br><b>Dissertation Advisors:</b> Prof. Gregory D. Abowd and Dr. Rosa I. Arriaga<br>GPA 4.0 | Atlanta, GA<br><br><br><br><br>2012      |
| <b>University of Pennsylvania (Penn)</b><br>Masters of Computer and Information Technology<br>GPA 3.91  | Philadelphia, PA<br><br><br><br><br>2008 |
| <b>Carnegie Mellon University (CMU)</b><br>BS in Electrical and Computer Engineering with an additional major in Spanish.<br>GPA: 3.57 Graduation with University Honors  | Pittsburgh, PA<br><br><br><br><br>2005   |

## EMPLOYMENT

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| <b>Kuwait University – College of Computing Sciences and Engineering</b><br><i>Assistant Professor</i>  | Adeliyah, Kuwait<br>2012 – present                            |
| <b>Gulf Bank</b><br><i>Intern,</i><br>Aided the Human Resources Department in the implementation of an analytical framework within which existing job descriptions are updated, and new job descriptions can be generated for the purpose of determining appropriate compensation levels for employees. Gained an understanding of banking systems from an Information Technology perspective.                                | Kuwait City, Kuwait<br><br><br><br><br>May 2007 – July 2007   |
| <b>Kuwait University – College for Women (CFW)</b><br><i>Engineer,</i><br>Designed the academic advising portion of the college's website. This involved creating web pages that act as a scheduling system for room reservations and web pages that allow students to manage their accounts including major declaration and eligibility, tracking progress towards graduation, and performing a variety of GPA calculations. | Adeliyah, Kuwait<br><br><br><br><br>August 2005 – August 2006 |

**LANGUAGES**                      Fluent in English, Arabic, and Spanish

**COMPUTER SKILLS**            Proficient in user interface design, and software development and evaluation

## THESIS ADVISING

“*Systematic Analysis of the Barriers Faced by Arab Women in STEM*” (Masters Thesis, Co-Supervisor)  
“*The Academic Impact of Using Social Technology in Kuwait University Faculty of Medicine*” (Masters Thesis, Committee Member)  
“*Citizens’ Perspective on the Impact of Social Media on Politics in Kuwait*” (Masters Thesis, Committee Member)  
“*Towards Developing a Tool to Support Individuals with Alzheimer’s Disease*” (Masters Thesis Co-Supervisor)  
“*Evaluating Hospital Websites in Kuwait: User Perceptions and Expectations*” (Masters Thesis Co-Supervisor)  
“*The Use of Instagram as a Social Commerce App*” (Masters Thesis Co-Supervisor)  
“*Investigation of The Use of ICT in Kuwaiti Girl Primary Schools – The Case Of ESL*” (Masters Thesis Co-Supervisor)  
“*Investigation of the Impact of Electronic Media on the Physical Activity of Children*” (Masters Project Supervisor)

## FELLOWSHIPS

**Kuwait Programme, London School of Economics-Middle East Center/KFAS**                      KFAS, LSE  
*May-August 2019*

This fellowship enabled me to pursue research to understand the work that community-based maternity health workers in Kuwait perform, and to explore ways in which technology can support these efforts. Working in collaboration with researchers from LSE Health and the Middle East Center helped me to develop this research. The goal is to use it to inspire policy change in Kuwait, with respect to support and promotion of breastfeeding and other infant and maternal health related matters.

## PROFESSIONAL SERVICE

### Ethics Review Committee

Kuwait University

#### *Founding Member and Vice Chair*

Computing research often involves human subjects and can introduce various tools, technologies, or techniques that can affect the lives of many people. Therefore, it becomes paramount to establish a clear set of guidelines for scholars and researchers to conduct computing research ethically. The role of this committee is to ensure that such ethical guidelines pertaining to research are followed, reviewed, and monitored. In this role my duties include:

- Reviewing proposed studies and research involving human participant to ensure that they conform to internationally and locally accepted ethical guidelines.
- Creating relevant processes and developing appropriate forms to accompany committee processes.
- Monitoring studies once they have begun and, where relevant, taking part in follow-up action and surveillance after the end of the research.
- Setting policies or offering opinions on ongoing ethical issues in research.

### Second International Conference on Computing Science and Engineering (ICCSE 2018)

Kuwait University

#### *Social and Hospitality Committee Chair* -In this role my duties included:

- Planning the executive council and presidents receptions
- Planning and coordinating meals, including devising mechanisms for predicting mean attendance and securing meal counts
- Working with the sponsorship/fundraising committee to determine sponsored meals
- Coordinating space requirements for social events
- Planning field trips to local sites for conference attendees
- Obtaining information and developing various guides for conference attendees regarding local shopping, entertainment and restaurants.

### Graduate Program Committee

Kuwait University

#### *Member*- The tasks of this committee include:

- Making admissions criteria and decisions
- Scheduling and overseeing the administration of the comprehensive exam
- Overseeing the program curriculum
- All issues and concerns related to the graduate students in the program including thesis advising, scheduling, graduation etc

### *Additional Professional Service Activities*

- Scholarship Committee (KU)
- Student Advising Committee (KU)
- Scheduling Committee (KU)
- W@CC-Women in the College of Computing(GT)
- CISTers- Women in Computer and Information Science(Penn)
- Society of Women Engineers(SWE)
- Society of Hispanic Professional Engineers (SHPE)

## ACADEMIC SERVICE

- International Conference on Interactive, Mobile, Wearable, and Ubiquitous Technologies 2017
- Pervasive Health 2012, 2017, 2018, 2019
- Latin American Conference in HCI 2015, 2017
- International Conference on Computing Sciences and Engineering 2015, 2017, 2018
- International ACM SIGCHI Conference on Human Factors in Computing Systems 2013, 2015
- World Autism Congress 2014
- MexIHC 2012, 2014, 2016
- International Conference on Ubiquitous Computing & Ambient Intelligence 2014, 2015, 2016, 2017
- International Work-Conference on Ambient Assisted Living 2014, 2015
- Journal of Medical Internet Research 2018

## RESEARCH PROJECTS

### **Towards Technology Solutions to Support Community-Based Maternity Health Workers, KU, BK, KFAS, LSE**

Telemedicine has become very popular as tool to overcome distance barriers, and improve access to health services. Through this research we seek to understand the work that community-based maternity health workers in Kuwait perform, specifically in the form of remote breastfeeding counseling (over the phone via text messages). Further we wish to use these insights to explore ways in which new and custom-built technology can support these efforts. The goal is to streamline the process these users currently employ, thereby enabling them to work more efficiently and effectively, to help more families. *2019-present*

### **Accessibility and Usability of Websites of Higher Education Institutions in Kuwait, KU**

Adeliya, KWT

According to the World Health Organization (WHO) there are more than one billion people all over the world facing different kind of disabilities. Everyone should have support to access online digital resources and services. In this time an age it is being treated more and more as a basic right. This applies to individuals at all age levels, including university students. Many higher educational institutes website development team members lack the awareness about accessibility and how it can help visitors to their pages. The purpose of this study is to evaluate the accessibility of university websites in Kuwait, and offer recommendations for how their development teams can approach improving and maintaining their accessibility. *2018-present*

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| <p><b>Evaluation Hospital Websites in Kuwait: A Cross-sectional Analytical Study, KU</b><br/> The demand for technological innovations is rising for hospitals around the world. Prospective patients expect and often depend in web and social media communication when choosing a hospital. They are key channels of communication with patients and their families. It is important for hospitals to have up to date websites that present them and their services effectively. The purpose of this study is to evaluate the websites of all the hospitals in Kuwait, and offering guidelines for how they can be improved.</p>   | <p>Adeliyah, KWT<br/><br/>2016-present</p> |
| <p><b>SMS for Symptom Awareness and Diabetes Knowledge in Adolescents With Type 1 Diabetes, KU</b><br/> Adolescents with type 1 diabetes typically receive clinical care every 3 months. Between visits, diabetes-related issues may not be frequently reflected, learned, and documented by the patients, limiting their self-awareness and knowledge about their condition. In this study, in collaboration with GT in the US and the Dasman Diabetes Institute and Amiri Hospital in Kuwait, I updated and extended a text-messaging system developed to help resolve this problem. The system will be evaluated in a randomized controlled trial with 30 adolescents, to examine the effect of SMS about symptom awareness and diabetes knowledge on glucose control and quality of life.</p>                                | <p>Adeliyah, KWT<br/><br/>2015-2018</p>    |
| <p><b>Leveraging Instagram as a Social Commerce Tool In Kuwait, KU</b><br/> Social Commerce has been expanding at a phenomenal rate in recent years. Social media constructs that exist in social commerce such as comments, reviews and ratings are a key factors that contribute to its success. In Kuwait, the use of Instagram as a social commerce platform, is a strong trend. A series of online surveys were conducted with Instagram business account owners and shoppers. The results reveal what drove these individuals to leverage Instagram and why it has been successful. One of the key contributions to the field of social commerce is the creation of a framework within which to study this phenomenon and guidelines to help new businesses effectively adopt Instagram as a social commerce platform.</p> | <p>Adeliya, KWT<br/><br/>2013-2018</p>     |
| <p><b>The Application of ICT in the Teaching of ESL to Students in Primary Girls Schools in Kuwait, KU</b><br/> This study presents the methodology and the results obtained through research conducted in 50 girls' primary schools in Kuwait (GPSK). The objective of the study was to gauge the impact of using ICT in teaching ESL in GPSK, by interviewing English teachers. The study highlights the ICT tools used, the difficulties faced, and the advantages gained through the use of ICT from the teachers' and the student's perspective. A recommended set of actions to further enhance the use of ICT in teaching ESL in GPSK was also developed.</p>   | <p>Adeliyah, KWT<br/><br/>2013-2017</p>    |
| <p><b>REACT – Facilitating the Authoring of Social Skills Instructional Modules, GT</b><br/> This authoring tool is designed to help parents, teachers, and other caregivers of individuals with autism to create Refl-ex instructional modules. They will also be able to share these modules. My approach to aiding authors in creating these modules uses crowdsourcing techniques. The authoring tool, will assist authors to create interactive social scenarios personalized to a particular individual with HFA.</p>  | <p>Atlanta, GA<br/><br/>2009-2012</p>      |
| <p><b>Refl-ex - Tool for Social Skills Development in Individuals with HFA, GT and KU</b><br/> This system was designed to help adolescents and young adults with HFASD in the US and Kuwait to rehearse and learn social skills with reduced aid from parents, and other caregivers. The objective is to develop technology to teach effective problem solving by allowing the individual to experience social situations and choose appropriate responses to unexpected events. The technology also assists and supports reflecting on those experiences, providing the individual with an opportunity to process information that can be recalled for later use.</p>  | <p>USA &amp; KWT<br/><br/>2009-2014</p>    |
| <p><b>iExpress - System to Detect and Contextualize Stereotypical Behaviors, GT</b><br/> Individuals with Autism Spectrum Disorder (ASD) frequently engage in stereotypical behavior. In some individuals this behavior can occur with very high frequency and can be very disruptive and at times self-injurious. Along with 4 other students I developed <i>iExpress</i>, a prototype system that contextualizes stereotypical behavior by automatically mapping occurrences of stereotypes to heart-rate data and audio-visual information obtained from the environment. To assess its feasibility, utility, and usability, we conducted a study with parents, caregivers, and children with ASD.</p>  | <p>Atlanta, GA<br/><br/>2009 - 2010</p>    |

## PUBLICATIONS:

- Fatima A. Boujarwah, Maryam Al-Rahmani, Mariam Boujarwah, Maha Al-Gilani, Hafsa Qureshey, Abdulla Al-Ibrahim. Case Study of BirthKuwait's Mobile Messaging Service Based Breastfeeding Support Line. *Presented at the First Conference on Fostering A Babyfriendly Community*. 25-27 November 2019, Jeddah, Saudi Arabia.
- Dari AlHuwait, Zainab Al-Meraj , and Fatima A. Boujarwah. What do Users Want? Evaluating hospital websites in Kuwait to improve consumer engagement and access to health information: a cross-sectional analytical study. *BMC Medical Informatics and Decision Making* 2018. 24 Sept. 2018
- Fatima A. Boujarwah, Zainab Al-Meraj and Dari AlHuwait. What do Users Want? Preliminary Evaluation of Hospital Websites in the State of Kuwait. *Proceedings of the International ACM SIGCHI Conference on Human Factors in Computing Systems 2018 (CHI '18)* , 21-26 April, 2018, Montreal, Canada.
- Nazneen, Fatima A. Boujarwah, Agata Rozga, Ron Oberleitner, Suhas Pharkute, Gregory D. Abowd, and Rosa I. Arriaga. Towards In-home Collection of Behavior Specimens - Within the Cultural Context of Autism in Pakistan. *Proceedings of the 6th International Conference on Pervasive Computing Technologies for Healthcare*, 21-24 May 2012, San Diego, CA.
- Fatima A. Boujarwah, Nazneen, Husayn Versee, Gregory Abowd, Rosa Arriaga. Towards A Tool to Support the Authoring of Social Skills Instructional Modules. *Presented at the International Meeting for Autism Research*, 17-19 May 2012, Toronto, Canada.
- Fatima A. Boujarwah, Gregory D. Abowd, Rosa I. Arriaga. Socially Computed Scripts to Support Social Problem Solving Skills *Proceedings of the International ACM SIGCHI Conference on Human Factors in Computing Systems 2012 (CHI '12)* , 5-10 May 2012, Austin, Texas.
- Fatima A. Boujarwah, Nazneen, Hwajung Hong, Gregory D. Abowd, Rosa I. Arriaga. Towards a Framework to Situate Assistive Technology Design in the Context of Culture. *Proceedings the 13th International ACM SIGACCESS Conference on Computers and Accessibility*, 24-26 October 2011, Dundee, Scotland.
- Fatima A. Boujarwah, Jennifer G. Kim, Gregory D. Abowd, Rosa I. Arriaga. Developing Scripts to Teach Social Skills: Can the Crowd Assist the Author? *Presented at the Human Computation Workshop at AAAI 2011*, 8-11 Aug 2011, San Francisco, CA.
- Fatima A. Boujarwah, Nazneen, Hwajung Hong, Gregory D. Abowd, Rosa I. Arriaga. Cross-Cultural Comparisons of Social Expectations of Individuals with Autism. *Presented at the International Meeting for Autism Research*, 12-14 May 2011, San Diego, CA.
- Fatima A. Boujarwah, Jennifer G. Kim, Mark O. Riedl, Rosa I. Arriaga, Gregory D. Abowd. Building a Knowledge Base to Support the Authoring of Social Skills Instructional Modules. *Presented at the International Meeting for Autism Research*, 12-14 May 2011, San Diego, CA.
- Fatima A. Boujarwah, Nazneen, Hwajung Hong, Gregory D. Abowd, Rosa I. Arriaga. Cross-Cultural Comparisons of Social Expectations of Individuals with Autism and Other Intellectual Disabilities. *Presented at the 40<sup>th</sup> Annual Meeting of the Society for Cross-Cultural Research*. 16-19 February 2011, Charleston, SC.
- Fatima A. Boujarwah, Mark O. Riedl, Gregory D. Abowd, Rosa I. Arriaga. REACT: Intelligent Authoring of Social Skills Instructional Modules for Adolescents with High-Functioning Autism. *In the Spring 2011 Issue of the SIGACCESS Newsletter*.
- Nazneen, Fatima A. Boujarwah, Shone Sadler, Amha Mogus, Gregory D. Abowd, Rosa I. Arriaga. Understanding the Challenges and Opportunities for Richer Descriptions of Stereotypical Behaviors of Children with ASD: A Concept Exploration and Validation. *n Proceedings of the 12th International ACM SIGACCESS Conference on Computers and Accessibility*. 25-27 October 2010, Orlando, FL USA.
- Fatima A. Boujarwah, Hwajung Hong, Jackie Isbell, Rosa I. Arriaga, Gregory D. Abowd. Training Social Problem Solving Skills in Adolescents with High-Functioning Autism. *Presented at the International Meeting for Autism Research*. 20-22 May 2010, Philadelphia, PA.
- Fatima A. Boujarwah, Hwajung Hong, Jackie Isbell, Rosa I. Arriaga, Gregory D. Abowd. Training Social Problem Solving Skills in Adolescents with High-Functioning Autism. *Proceedings of the 4th International Conference on Pervasive Computing Technologies for Healthcare*. 22-25 March 2010, Munich, Germany.
- Nazneen, Fatima A. Boujarwah, Amha Mogus, Shone Sadler, Mohammed Habibulla, Gregory D. Abowd, Rosa I. Arriaga. Understanding the Context of Stereotypical Behaviors. *Presented at the International Meeting for Autism Research*. 20-22 May 2010, Philadelphia, PA.
- Jackie Isbell, Fatima A. Boujarwah, and Hwajung Hong. Computer-Assisted Instruction and Social Problem Solving in Adolescents with High-Functioning Autism Spectrum Disorders. *Presented at the 12th Annual Conference on Autism, Intellectual Disabilities, and Other Developmental Disabilities., Maui, HI, 2010*.
- Mark O. Riedl, Rosa Arriaga, Fatima A. Boujarwah, Hwajung Hong, Jackie Isbell, and L. Juane Heflin. Graphical social scenarios: Toward intervention and authoring for adolescents with high functioning autism. *Proceedings of the AAAI Fall Symposium on Virtual Healthcare Interaction*, Arlington, VA, 2009.
- Mark O. Riedl, Rosa Arriaga, Fatima A. Boujarwah, Hwajung Hong, Jackie Isbell, and L. Juane Heflin. Toward Assisted Authoring of Social Skill Scenarios for Young Adults with High Functioning Autism. *Proceedings of the IJCAI 2009 Workshop on Assisted Cognition*, Pasadena, California, 2009. **Distinguished Contribution Award.**

Fatima A. Boujarwah, Amha Mogus, Jennifer Stoll, and Kanan Garg. Dress for Success: Automating the Recycling of School Uniforms. *Proceedings of the 27th Annual Conference Extended Abstracts on Human Factors in Computing Systems*, 4-9 April 2009, Boston, MA.