AMIRA GHENAI

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RESEARCH INTEREST

Computational Social Sciences, Social Media Analysis, Online Misinformation/Disinformation, Information Retrieval, Machine Learning, Human Computer Interaction

TEACHING INTEREST

Programming, Data Analytics, Statistics, Human Computer Interaction, Data Structure, Information Retrieval, and Databases

SUMMARY OF QUALIFICATIONS

Publications Well-established research track record with notable conference publications
Teaching taught two computer science introductory course, hold the "Fundamentals of University Teaching" certificate
Awards & Fellowships AGE-WELL Graduate Student and Postoctoral Award in Technology and Aging (15% acceptance rate), Qatar Research Leadership Program Doctoral Fellowship 2012-2018
Service Served as program committee member and reviewer for top-tier conferences and journals
Spoken Languages English (Bilingual), French (Proficient)

EDUCATION

PhD in Computer Science   *Dec 2019*
Department of Mathematics, University of Waterloo - Waterloo, ON
PhD thesis: *Health Misinformation in Search and Social Media*
URL: https://uwspace.uwaterloo.ca/handle/10012/15268
Supervisors: Dr. Charles L. A. Clarke, Dr. Mark D. Smucker
Relevant Courses: Applied Machine Learning, Search and Recommendation, Challenges in Big Data Quality, Data Structures and Standards in Health Informatics

Summer School Series on Methods for Computational Social Science   *Jul 2017*
Topic: *Methods for capturing, analyzing and modeling digital trace data*
Learned about using digital trace data to answer social sciences research questions (e.g., pro-social behavior, consensus or mobility)
Conducted projects under lecturers' supervision to apply the newly learned methods

Masters of Science in Computing (Software Engineering) with *Merit*   *Nov 2013*
Department of Computing, Imperial College London - London, UK
Disertation title: *Exploring Trust-Aware Neighbourhood in Trust-based Recommendation*
URL: https://arxiv.org/abs/1608.05380
Supervisor: Dr. Moustafa M.Ghanem
Relevant Courses: Distributed and Parallel Algorithms, Advanced Databases, Software Engineering

Bachelor of Science in Computer Engineering with *Honors*   *Jan 2011*
Department of Computer Science and Engineering, Qatar University - Qatar
Disertation title: *Data Analysis Using MapReduce Programming Model on the Cloud*
URL: https://cs.uwaterloo.ca/~aghenai/assets/publications/design_project.pdf
Supervisor: Dr. Qutaibah M. Malluhi
Relevant Courses: AI, Cloud Computing, Computer Networks, Computer Interfacing
Member of Vice President list, Member of the dean's list

HONORS & AWARDS

Scholarships and Fellowships [1]

• AGE-WELL Graduate Student and Postdoctoral Award in Technology and Aging, $20,000 over 1 year (Acceptance rate **15%**)	2020 – 2021
• Waterloo University Graduate Research Studentship, $13,000 over two terms	2019
• Qatar Research Leadership Doctoral Fellowship, Qatar Foundation, $200,000 over 4 yrs	2014 – 2018
• Qatar Research Leadership Program Scholarship, Qatar Foundation, $50,000 over 1 yr	2012 – 2013
• High School Excellence Scholarship, Algerian Embassy in Qatar, $40,000 over 5 yrs	2006 – 2011

Travel Awards

• ACM SIGIR Travel Award, ACM	2017
• Travel Awards, Department of Computer Science, Waterloo University	2017
• Travel Awards, Qatar Computing Research Institute, Qatar	2017
• Computational Social Science Summer School Travel Award, Waterloo University	2017
• Travel Award for Grace Hopper Celebration, WiCS, Waterloo University	2016
• MLDA Symposium Travel Award, Qatar Foundation	2015

RESEARCH EXPERIENCE

Postdoctoral Fellow   *Feb 2020 – present*
Accessible Computing Technologies Research Group, McGill University - Montreal, QC
Supervisor: Dr. Karyn Moffatt
Using qualitative methods to study older adults' challenges with online misinformation, to measure older adults' exposure to COVID-19 misinformation, and to design a platform that helps Canadian older adults deal with misinformation

Researcher (Part-time/Remote)   *May 2020 – Dec 2020*
Ryerson University Social Media Lab - Toronto, ON
Supervisors: Dr. Anatoliy Gruzd & Dr. Philip Mai
Identifying COVID-19 vaccine-related misinformation messages on Twitter and building the retweet prorogation patterns to explore the misinformation spread on Twitter

Doctoral Researcher   *Sep 2014 – Dec 2019*
Department of Mathematics, University of Waterloo - ON
Supervisors: Dr. Charlie L. A. Clarke, Dr. Mark D. Smucker
Employed large-scale social media data analysis tools to understand how health misinformation spreads in Twitter, designed controlled user-centered studies to study the effect of health misinformation on people's decisions during online search.

Research Associate   Jan 2013 – Jul, 2013
Qatar Computing Research Institute, Qatar Foundation - Qatar
Supervisor: Dr. Carlos Castillo
Collected news related tweets using Twitter API and tracked tweets news propagation on Twitter

Research Assistant   Sep 2011 – Jun 2012
Qatar Computing Research Institute, Qatar Foundation - Qatar
Supervisor: Dr. Sihem Amer-Yahia
Clustered Al-Jazeera news articles based on topics using LDA and Open-Calais tool, used Mechanical-Turk for evaluating the clusters, and built a dashboard to visualize the articles dynamics which helps journalists gather insights about topics

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[1]Scholarship values are approximated

Undergraduate Research Assistant   Oct 2009 – Aug 2011
Department of Computer Science and Engineering, Qatar University - Qatar
Supervisor: Dr. Qutaibah Malluhi
Used map reduce programming model to build an inverted index of text documents and built a interactive
Java user interface to search for specific keywords

TEACHING AND ADVISING

Guest Lecturer
School of Information Studies, McGill University - Montreal, QC   Nov 2020
- Title: The think-aloud method for system usability analysis
- Course: Usability Analysis and Assessment (graduate course)

Department of Mathematics, University of Waterloo - Waterloo, ON   Oct 2018
- Title: Fake Cures: User-centric Modeling of Health Misinformation in Social Media
- Course: Topics in AI/Trust and Online Social Networks (graduate course)

Undergraduate Student Supervisor   Mar – Jul 2020
Xueguang Ma, Undergraduate research assistant of Dr. Robin Cohen

- Supervised research tasks, set goals, monitored productivity, and provided constructive feedback

Lab Instructor (Instructional Apprentice - IA)   Fall 2017/Winter 2017
Department of Mathematics, University of Waterloo - Waterloo, ON

- Conducted tutorials for the basic concepts in computer science course using Python. Among the topics covered: strings and lists, recursion, searching, sorting and graph theory
- Taught labs for the foundational concepts in computer science course using Racket. Among the topics covered: design recipe, compound data structures, lists, recursion, binary and general trees
- Assisted students with assignments and grade and proctor mid-term and final exams
- Received an excellent course evaluation as lab instructor

Fundamentals of University Teaching program   Mar 2017
Centre For Teaching Excellence (CTE), University of Waterloo - Waterloo, ON

- Received the *Fundamentals of University Teaching* certificate accredited by the *Canadian Educational Developers Caucus*
- Participated in 6 university teaching workshops offered by CTE including: teaching methods, classroom delivery skills, effective lesson plans, and giving quality feedback to enhance teaching skills
- Conducted three microteaching sessions aimed to practice different teaching skills
- Delivered three mini lessons to practice giving and receiving feedback on teaching methods

Teaching Assistant - TA   Spring 2017/Fall 2016
Department of Mathematics, University of Waterloo - Waterloo, ON

- Graded ten assignments and two exams per term for the undergraduate course "propositional logic"
- Among the topics covered in this course are: syntax and semantics of propositional logic, natural deduction, soundness and completeness, analysis of functional programs and program verification
- Received an excellent course evaluation as teaching assistant

Peer Tutor   Sep 2008 - Jun 2009
Student Support Learning Centre, Qatar University - Qatar

- Tutored basic and advanced Math and Calculus subjects
- Tutored basic data structure courses using Java and C++ as programming languages
- Presented the Student Support Learning Centre in the National Tutoring Association conference

PUBLICATIONS

Refereed papers[2]

- **Amira Ghenai**, Mark D. Smucker and Charles L. A. Clarke. 2020, March. A Think-Aloud Study about Medical Misinformation in Search Results. The 5th ACM **CHIIR** Conference on Human Information Interaction and Retrieval, Vancouver, Canada. (37%)
- **Amira Ghenai**, Yelena Mejova, 2018, November. Fake Cures: User-centric Modeling of Health Misinformation in Social Media. The 21st ACM **CSCW** Conference on Computer-Supported Cooperative Work and Social Computing, New York City's Hudson River (Jersey City). (27%)
- **Amira Ghenai**, Yelena Mejova, August 23-26, 2017. Catching Zika Fever: Application of Crowdsourcing and Machine Learning for Tracking Health Misinformation on Twitter. The 5th IEEE **ICHI** International Conference on Healthcare Informatics. Park City, Utah. USA. (27%)
- Frances Pogacar, **Amira Ghenai**, Mark D. Smucker, Charles L. A. Clarke, October 1-4, 2017. The Positive and Negative Influence of Search Results on People's Decisions about the Efficacy of Medical Treatments. The 3rd ACM **ICTIR** International Conference on the Theory of Information Retrieval, Amsterdam. Netherlands. (54%)
- Sihem Amer-Yahia, Samreen Anjum, **Amira Ghenai**, Aysha Siddique, Sofiane Abbar, Sam Madden, Adam Marcus and Mohammed El-Haddad, May, 2012. Maqsa: a system for social analytics on news. The 2012 ACM **SIGMOD** International Conference on Management of Data (pp. 653-656), Arizona. USA. (17%)

Paper under review

- Robin Cohen, Karyn Moffatt, **Amira Ghenai**, Andy Yang, Margaret Corwin, Gary Lin, Raymond Zhao, Yipeng Ji, Alexandre Parmentier, Jason PNg, Wil Tan and Lachlan Gray. Addressing Misinformation in Online Social Networks: Diverse Platforms and the Potential of Multiagent Trust Modeling. Information Journal - special issue:"Tackling Misinformation Online"

Doctoral Consortium

- **Amira Ghenai**, Jul 2-5 , 2017. PhD Track: Health misinformation in search and social media, ACM Digital Health, London. UK
- **Amira Ghenai**, August 6-11 , 2017. Doctoral Consortium: Health misinformation in search and social media, SIGIR'17, Tokyo. Japan

Posters/Workshops

- **Amira Ghenai**, Mark D. Smucker and Charles L. A. Clarke. 2019, July. A Think-Aloud Study about Medical Misinformation in Search Results. ACM SIGIR 2019 Workshop on Reducing Online Misinformation Exposure (ROME), Paris, France.
- **Amira Ghenai**, Daniel J. Lizotte , March 2015. What makes a review useful, funny or cool on Yelp.com? Machine Learning and Data Analytics Symposium MLDAS 2015, Doha. Qatar

Unrefereed papers

- **Amira Ghenai**, Moustafa M.Ghanem, August, 2016. Exploring Trust-Aware Neighbourhood in Trust-based Recommendation. arXiv preprint arXiv:1608.05380
- **Amira Ghenai**, Eldar Khalilov, Pavel Valov, Charles L. A. Clarke, November, 2015. WaterlooClarke: TREC 2015 Clinical Decision Support Track. TREC Conference 2015, Maryland, USA
- **Amira Ghenai**, Nabiha Asghar, April, 2015. Automatic Discovery of Functional Dependencies and Conditional Functional Dependencies: A Comparative Study. University of Waterloo

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[2]Where available, acceptance rates are provided in brackets.

INVITED TALKS

- **Designing Systems to Better Address the Problem of Misinformation** — Mar 2020
  Women in Data Science Conference. Ottawa, ON
- **A Think-Aloud Study to Understand Factors Affecting Online Health Search** — Oct 2019
  School of Information Studies, McGill University. Montreal, QC
- **The Positive and Negative Influence of Search Results on People's Decisions about the Efficacy of Medical Treatments** — Dec 2017
  Research collaboration talk between Waterloo university and Google Inc. Mountain View, CA
- **Health Misinformation in Search and Social Media** — Aug 2017
  ACM SIGIR'17 conference, Tokyo. Japan
- **Health Misinformation in Search and Social Media** — Jul 2017
  ACM Digital Health'17 conference, London. UK
- **Zika Misinformation Tracking in Social Media** — Sep 2016
  Qatar Computing Research Institute, Doha. Qatar
- **What Makes a Review Useful, Funny or Cool on Yelp.com** — Nov 2015
  The Second Machine Learning and Data Analytics (MLDAS) Symposium, Doha. Qatar
- **Discovering Conditional Functional Dependencies** — Mar 2015
  University of Waterloo. ON

REVIEWING

- **Program Committee Member**, TheWebConf 2021 — Oct 2020
- **Reviewer**, The Journal of Medical Internet Research (JMIR) — Sep 2020
- **Reviewer**, ACM CSCW — Jun 2020
- **Reviewer**, The Journal of Medical Internet Research (JMIR) — Jun 2020
- **Program Committee Member**, ACM Conference on Digital Health — Jul 2019
- **Program Committee Member**, ACM Conference on Digital Health — Jul 2018
- **Program Committee Member**, The 27th World Wide Web Conference — Apr 2018
- **Program Committee Member**, ACM Conference on Digital Health — Jul 2017

SERVICE AND LEADERSHIP EXPERIENCE

- **Committee Member**, Women in Computer Science, University of Waterloo — Jan 2015 – Apr 2017
- **Judge** in a programming competition for grade 8 girls, University of Waterloo — Oct 2015
- **Member**, Student Scientific Research Club, Qatar University — Jan 2007 – Dec 2010
- **Volunteer**, The 17th International Conference on Telecommunications 2010 — Apr 2010
- **Volunteer**, The 11th International Conference on Relational Methods in CS — Nov 2009
- **Orientation Volunteer**, Qatar University Orientation Day, Qatar — Aug 2009

MEDIA APPEARANCE

- **Search results influence people's decisions about treatment effectiveness** — Mar 2018
  Article published by Joe Petrik. Cheriton School of Computer Science News
- **Think twice before consulting Dr. Google, researchers say**. — Apr 2018
  Interview with Kelly Crowe. CBC NEWS
- **Is searching for health information online a good idea?**. — Apr 2018
  Interview with Su-Ling Goh. Global News - Edmonton
- **Health misinformation in online search**. — Apr 2018
  Interview with Mike Farwell. 570 News - The Mike Farwell Show

INDUSTRY/INTERNSHIP EXPERIENCE

- **Data Scientist Intern**, Thomson Reuters Labs - ON   Feb – Apr 2018
  Applied entity extraction to legal documents (extract main parties, term duration, etc.).
  Used fuzzy matching techniques to find targeted entities.
  Participated in communicating findings to stakeholders using visualization tools.
- **Service Desk Agent**, Hewlett-Packard - Qatar   Apr – Aug 2011
  Troubleshooted IP Telephony phones & managed web mail server issues and user accounts
  Remotely downloaded desktop software, and troubleshooted Enterprise Resource Planning (ERP) system
- **Intern**, Al-Jazeera Network - Qatar   Jul – Aug 2009
  Configured IP Telephone administration, local area implementation
  Actively participated in cover switching, cabling and server farm migration preparation

TECHNICAL SKILLS

- **Programming**: Java, Python (NumPy, Scikit-learn), Bash, R, PHP, JavaScript
  Database/Distributed Systems: **Hadoop/PIG**, SQL, MySQL, PostgreSQL
- **Data Mining**: machine learning(linear/logistics regression, discriminant analysis, bagging, random forest, SVM), data extraction and cleaning
- **Natural Language Processing**: text parsing, HTML parsing, stemming, POS tagging, phrase extraction, named entity extraction, topic discovery
- **Information Retrieval**: Lemur/Indri (Java), Terrier (Java), query expansion, crowd-sourced evaluation (Mechanical Turk,CrowdFlower)
- **Code/Project Management**: Google Colab, Jupyter, Git
- **APIs**: Twitter, JSON