

# Mashaal Musleh

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## ABOUT

I am a Ph.D. candidate at the Department of Computer Science and Engineering at the University of Minnesota, advised by Dr. Mohamed Mokbel. My current research focuses on providing accurate map services mainly by improving the quality of the map itself using machine learning and other similar approaches. Such map services include routing, ETAs, range and KNN queries, etc. My prior work includes spatial knowledge bases (spatial MLN) and spatial data management.

## EDUCATION

### University of Minnesota, Minneapolis, MN, USA

- Doctor of Philosophy (Ph.D.) Student in Computer Science and Engineering Sep 2016 – Dec 2023
  - Adviser: Prof. Mohamed Mokbel.
  - Research areas: Spatial Data, GIS, Big Data Management, Databases.
- Master of Science (M.S.) in Computer Science and Engineering May 2018

### Umm Al-Qura University, Makkah, Saudi Arabia

- Bachelor's degree in Computer Engineering Sep 2009 – Dec 2014
  - Graduated with First Class Honours.
  - Cumulative GPA: 4.00 / 4.00

## ACADEMIC AND PROFESSIONAL EXPERIENCE

### Dept. of Computer Science and Engineering, University of Minnesota

#### Research and Teaching Assistant

Sep 2016 – Aug 2018, Sep 2019 – Present

- I contributed to ST-Hadoop: a distributed framework for Spatio-temporal data, TurboReg and RegRocket: spatial knowledge base systems. I also worked in QARTA: a system for accurate map services using machine learning. Teaching responsibilities include preparing and grading coursework, exams, and programming assignments in addition to delivering lab tutorials.
- Research areas: Big Data Management, Spatial Databases, Knowledge Base Construction, Spatial Data Science.
- Courses: Practice of Database Systems. Architecture and Implementation of Database Management Systems.

### Qatar Computing Research Institute (QCRI), Hamad Bin Khalifa University

#### Research Associate

Aug 2018 – Aug 2019

- I worked with the Data Analytics group on data cleaning and preparation topics. I investigated the explainability of entity resolution models that are based on machine learning. I also created CoClean, a collaborative data science platform that allows multiple data scientists to collaboratively curate and prepares their datasets.
- Research areas: Data Analytics, Data Science, Data Cleaning, Machine Learning for Data Cleaning.

### KACST GIS Technology Innovation Center, Umm Al-Qura University

#### Research Software Engineer

Jan 2014 – Aug 2016

- Project: *Taghreed: A System for Querying, Analyzing, and Visualizing Geotagged Microblogs*. I implemented the API Layer, Recovery Manager, Logger, Dashboards, and Twitter Emulator for stress tests.
- Project: *Taqreer: A System for Spatio-temporal Analysis on Microblogs*.
- Research areas: Spatial Data Management, Data analytics and Visualization.

## PUBLICATIONS

- **Mashaal Musleh**, Sofiane Abbar, Rade Stanojevic, Mohamed Mokbel. *QARTA: An ML-based System for Accurate Map Services*. VLDB 2021.
- Sofiane Abbar, Rade Stanojevic, **Mashaal Musleh**, Mohamed Mokbel. *A Demonstration of QARTA: An ML-based System for Accurate Map Services*. VLDB 2021.
- **Mashaal Musleh**, Mourad Ouzzani, Nan Tang, AnHai Doan. *CoClean: Collaborative Data Cleaning*. SIGMOD 2020.
- Ibrahim Sabek, **Mashaal Musleh**, Mohamed Mokbel. *RegRocket: Scalable Multinomial Autologistic Regression with Unordered Categorical Variables Using Markov Logic Networks*. ACM Transactions on Spatial Algorithms and Systems, TSAS 2019.
- Ibrahim Sabek, **Mashaal Musleh**, Mohamed Mokbel. *Flash in Action: Scalable Spatial Data Analysis Using Markov Logic Networks*. VLDB 2019.
- Ibrahim Sabek, **Mashaal Musleh**, Mohamed Mokbel. *TurboReg: A Framework for Scaling Up Spatial Logistic Regression Models*. SIGSPATIAL 2018.
- Ibrahim Sabek, **Mashaal Musleh**, Mohamed Mokbel. *A Demonstration of Sya: A Spatial Probabilistic Knowledge Base Construction System*. SIGMOD 2018.
- Louai Alarabi, Mohamed Mokbel, **Mashaal Musleh**. *ST-Hadoop: A Mapreduce Framework for Spatio-Temporal Data*. GeoInformatica 2018.
- Louai Alarabi, Mohamed Mokbel, **Mashaal Musleh**. *ST-Hadoop: A MapReduce Framework for Spatio-Temporal Data*. SSTD 2017.

	<ul style="list-style-type: none"> <li>Amr Magdy, Thanaa M. Ghanem, <b>Mashaal Musleh</b>, Mohamed Mokbel. <i>Understanding Language Diversity in Local Twitter Communities</i>. ACM Conference on Hypertext and Social Media 2016.</li> <li>Amr Magdy, <b>Mashaal Musleh</b>, Kareem Tarek, Louai Alarabi, Saif Al-Harhi, Hicham G Elmongui, Thanaa M Ghanem, Sohaib Ghani, Mohamed Mokbel. <i>Taqreer: A System for Spatio-temporal Analysis on Microblogs</i>. In IEEE Data Engineering Bulletin, June 2015.</li> <li>Amr Magdy, Louai Alarabi, Saif Al-Harhi, <b>Mashaal Musleh</b>, Thanaa M. Ghanem, Sohaib Ghani, Mohamed Mokbel. <i>Demonstration of Taghreed: A System for Querying, Analyzing, and Visualizing Geotagged Microblogs</i>. ICDE 2015.</li> <li>Amr Magdy, Louai Alarabi, Saif Al-Harhi, <b>Mashaal Musleh</b>, Thanaa M. Ghanem, Sohaib Ghani, Mohamed Mokbel. <i>Taghreed: A System for Querying, Analyzing, and Visualizing Geotagged Microblogs</i>. SIGSPATIAL 2014.</li> <li>Amr Magdy, Thanaa M. Ghanem, <b>Mashaal Musleh</b>, Mohamed Mokbel. <i>Exploiting Geo-tagged Tweets to Understand Localized Language Diversity</i>. GeoRich 2014, in conjunction with SIGMOD 2014.</li> <li>Thanaa M. Ghanem, Amr Magdy, <b>Mashaal Musleh</b>, Sohaib Ghani, Mohamed Mokbel. <i>VisCAT: Spatio-Temporal Visualization and Aggregation of Categorical Attributes in Twitter Data</i>. SIGSPATIAL 2014.</li> <li><b>Mashaal Musleh</b>. <i>Spatio-Temporal Visual Analysis for Event-Specific Tweets</i>. SIGMOD 2014.</li> </ul>	
<b>ACADEMIC AWARDS</b>	<ul style="list-style-type: none"> <li>2-years Fellowship and Graduate Assistantship Support. Sep 2016 Ph.D. Graduate Program, Department of Computer Science and Engineering, University of Minnesota</li> <li>Best Undergraduate Poster Jan 2015 Computer Engineering Dept., Umm Al-Qura University, Makkah, Saudi Arabia.</li> <li>GISTIC Travel Award Nov 2014 To attend SIGSPATIAL 2014, held in Dallas, TX, USA.</li> <li>ACM Travel Award (US \$800) Jun 2014 selected as one of the Top-5 Best Undergraduate Posters worldwide in ACM SIGMOD 2014, Snowbird, Utah, USA.</li> <li>IEEE Travel Award (US \$3000) Mar 2014 To attend ICDE 2014, held in Chicago, IL, USA.</li> <li>Umm Al-Qura First Rank Student Award (USD \$2600) Feb 2014 Achieved the highest GPA across all university students for 5 years, Umm Al-Qura University, Makkah, Saudi Arabia.</li> <li>Undergraduate Exchange Program Scholarship, Ministry of Higher Education, KSA Oct 2009 5-year undergraduate scholarship for a B.S. degree in Comp. Eng., Umm Al-Qura University, Makkah, Saudi Arabia.</li> </ul>	
<b>OTHER WORK EXPERIENCE</b>	<p><b>Makkah Youth (Shbabmakkah)</b>, Makkah, Saudi Arabia.</p> <p><b>Software Developer</b> Jul 2010 – Aug 2014 Makkah Youth is a nonprofit organization. I was responsible for developing and maintaining the organization database, designing and developing a variety of software to fit needs in online recruitment, operations management, and administration affairs.</p> <p><b>Al Wefag Trading &amp; Manufacturing Co. Ltd.</b>, Jeddah, Saudi Arabia.</p> <p><b>Human Resources Officer</b> Nov 2008 – Oct 2009 I was responsible for several H.R. tasks, including attendance reports, payrolls, medical insurances and employee benefits for more than 400 employees spread on ten branches and one factory.</p> <p><b>Smart Methods Co.</b>, Makkah, Saudi Arabia</p> <p><b>Summer Intern</b> Jun 2013 – Jul 2013 Implementing micro-controllers (hardware) and analyzing embedded systems and customer requirements.</p>	
<b>TECHNICAL SKILLS</b>	<ul style="list-style-type: none"> <li>Programming Languages: Java, Python, Ruby, C#, VB.net.</li> <li>Web development: HTML, XML, JavaScript, CSS, ASP.NET, Ruby on Rails, AJAX.</li> <li>Data &amp; Data Science: Sci-Kit Learn, Pandas, PostgreSQL, MS SQL Server, MongoDB.</li> <li>Other: Linux, Docker, Cloud (AWS, Azure, GC), git.</li> </ul>	
<b>REFERENCES</b>	Available upon request.	

[CV updated on 2021-10-17]