

Louai Alarabi

PhD and MSc University of Minnesota Twin Cities

CONTACT & INFORMATION

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LOUAI ALARABI IN A NUTSHELL (DETAILS IN THE COMING SECTIONS)

- Significant Achievements
 - Louai enjoys building Big Data-driven systems for different clients.
 - Main stakeholder in **Data Lake for General Authority of Statistics (GSTAT)**
 - Invented and developed several System ST-Hadoop, TAREEG, MNTG, SHAREK, GeoKnit, Crisis Management System , Crowd Sourcing System, and TAGHREED.
 - TAGHREED is the core system of the well-known company **Lucydia**
 - Received first place and a gold medal award in student research competition at ACM SIGSPATIAL/GIS 2018
 - Best paper award at SSTD 2017
 - Finalist of student research competition at ACM SIGMOD 2017
 - Best demonstration award at U-Spatial Symposium 2014
- System Position
 - **Chief Data Analytic** at Saudi Information Technology.
 - **Senior Director of Data** at SEERA Holding Group.
 - **Director of Statistical Database and Data Warehouse** at General Authority of Statistics.
 - **Big Data Consultant** at General Authority of Statistics.
 - **PhD** from University of Minnesota Twin Cities (ranked one of the top 30 for the best graduate program in **Data Management and Analytics**), USA.
 - Research Assistant at the KACST GIS Innovation Center, KSA.
 - Software Engineer at Advanced Electronics Company in Riyadh, KSA.
- Skills and Interests
 - Data Management, Spatial and Spatio-temporal Data Computing, GIS Systems.
 - Data science and advanced Analytics.
 - Big Data (NoSQL, Cloud, Transactional, Distributed, In-memory, Fabric, Grid, Key-Value, Object, Graph) and Data Lake Management (MinIO, Airbyte, Airflow, Apache Hadoop, MapReduce, Cloudera, Informatica, Apache Ignite, Apache Hive, Apache PigLatin, Apache Mahout, Apache Lucene, Apache Spark, Node4J, Apache Giraph, SpatialHadoop, ST-Hadoop, Elasticsearch)
 - Team Management and Leadership.

BUSINESS INTELLIGENCE | BUSINESS ANALYTICS | DATA MONETIZATION | DATA INTEGRATION | BIG DATA MANAGEMENT

- **10+ years of experience** exploring and generating measurable economic benefits from heterogeneous data sources of structured, semi-structured, and unstructured.
- Utilizing enterprise and open-source big data operational systems, including Databases, Data warehouses, Data Lake, and Data Fabric in order to apply modern decentralized data management architecture, such as **Data Mesh**, **Delta-Lake-house**, etc...
- Experienced in building and maintaining technical infrastructure that collects, store, manage, analyze, and deliver dashboards for performance benchmarking and descriptive analytics.

EMPLOYMENT EXPERIENCE

FEB 2023
Current

Chief Data Analytic, Engineering
Saudi Information Technology Company

Leadership & Leadership/Supervisory Responsibility:

- Responsible for developing and governing client data to drive business decisions.
- Ensuring that the SITE delivers best-in-class client experience by achieving operational excellence and maintaining effective governance.
- Recommend solutions that maximize customer profitability and are able to articulate impacts on governance, business processes, and security.
- Other duties will include leading interdisciplinary teams, improving big data systems within the company, and driving innovation.
- Help hire, develop, and retain top-tier talented Data Scientists, Data Engineers, and Solution Architects.
- Play a key role in **deciding technologies and related road-map** for development, testing, deployment of business analytics and data governance.
- Prepare the plan and oversee the implementation of **data quality** in relation to model testing with different stakeholders.

Strategic Duties :

- Establish Data governance model to ensure data business accuracy, security, usability, and trustworthiness for data business continuity.
- Assist and determine potential trends and implications for business environments.

Leadership & Leadership/Supervisory Responsibility:

- Responsible for developing and governing corporate data and information strategy in order to drive business decisions and growth in Travel, Car Rental, cargo, Hospitality, and Corporate Venture.
- Develop data procedures and policies and work closely with various departments to collect, prepare, organize, protect, and analyze data assets.
- Ensuring that the company delivers best-in-class customer experience and travel products, achieves operational excellence, and maintains effective governance.
- Other duties will include leading inter-disciplinary teams, improving and streamlining data systems within the company and driving innovation.
- Help hire, develop, and retain top-tier talented Data Scientists, Data Engineers, and Solution Architects.
- Play a key role in **deciding technologies and related road-map** for development, testing, deployment of business analytic and data governance.

Strategic Duties :

- Establishes actionable KPIs and success metrics and ensures that there is timely and accurate reporting.
- Establish a Data governance model to ensure data business accuracy, security, usability, and trustworthiness for business continuity.
- Assist and determine potential implications for business environments.
- Layout the **AI projects/products implementation processes (ML model development lifecycle)** including project inception, exploration phase, model building phase, model deployment, and model retraining. Ensure the project implementation governance on an ongoing basis.

MAR 2021 | Director of Statistical Database and Data Warehouse
MAR 2022 | Consultant - Big Data Expert
General Authority for Statistics, Kingdom of Saudi Arabia

- Develop and implement detailed and accurate data pipelines and analytic tools for different statistical departments, providing visibility into performance against key business objectives.
- Design and develop enterprise data Lakehouse to serve as a self-service BI and data analysis for an economic platform.
- Drive continuous improvement in processes across the different business units.
- Design and build distributed processes by increasing profitability coverage and enhancing statistical department satisfaction based on data-driven acquisition and analytics solutions.
- Identify opportunities for cost and efficiency improvement and take necessary actions.
- Lead master data management team to meet business rules for data quality (completeness, validity, consistency, timeliness and accuracy).
- Ensure a data-centric approach is taken in projects and issues resolution, ensuring that data governance best practices are incorporated into each and every effort.
- Team member of the data governance community responsible for the standards, policies, and processes.
- Develop data integration processes using Informatica and Cloud-era.
- Develop tools to measure forecast accuracy using Informatica Data Quality.
- Maintain source and target mappings, transformation logic and processes to reflect the changing business environment over time.
- Design, implement and maintain ETL and ELT models using Informatica.
- Apply query optimization techniques to enhance overall data extraction and data acquisition processes.
- Identify opportunities and propose solutions for effective use of data lakehouse, data warehouse, applications, and platforms.
- Develop and Design Business to Business Partner Portal for Data Exchange.
- Led a technical team of Data Linkage between authority and external entities, including governmental and private sectors.

DEC 2019 Mar 2021	<p>Chairman of Computer Science department <i>College of Computer and Information Systems , UMM AL-QURA University</i> As the department's chief administrative and academic officer, the Chair has authority and responsibility for the delivery of academic programs in accordance with departmental, college, and university strategic plans; hiring and evaluation of department personnel, including faculty and staff; and budgeting and resource management. This authority is subject to approval by the Dean and the Provost. As a member of the College administration, the Chair coordinates departmental activity with the activities of other units in the College and the University and, in collaboration with other members of the administration, assists in developing and implementing College initiatives. This position will report to the Dean of the respective college or the Dean's determined designee.</p>
NOV 2019 Aug 2022	<p>Assistant Professor <i>College of Computer and Information Systems, UMM AL-QURA University</i> Courses: Parallel Processing, Introduction to Computers, Cloud Computing and Big Data Analysis, Geographical Information System and Analytic, supervise undergraduate projects, and supervise graduates thesis projects.</p>
JAN 2017 May 2019	<p>Teaching Assistance <i>Department of Computer Science and Engineering , University of Minnesota</i> Responsibilities included: Preparing and discussing homework exercises and programming assignments, delivering lab tutorials and recitations, and grading exams and quizzes. Courses: CSCI-4061:Operating System, CSCI-4707:Practice of Database Systems, and CSCI-1133 Introduction to Programming</p>
FEB 2014 AUG 2014	<p>Research Assistant <i>KACST GIS Technology Innovation Center</i> Member of the Data Management group doing research in microblog data management and big spatio-temporal data processing, building these systems as a proof of concept using and extending SpatialHadoop to support processing and indexing the temporal dimension, document the outputs as research papers, and giving demonstrations for business purposes.</p>
SEP 2010 Aug 2011	<p>Teaching Assistance <i>College of Computer and Information Systems , UMM-ALQURA University</i> Responsibilities included: Preparing and discussing homework exercises and programming assignments, delivering lab tutorials and recitations, and grading exams and quizzes, finally publishing a free online tutorial of <i>Clips an artificial intelligent language for students</i>. Courses: Computer Graphics, Advanced Programming Languages, Structured Programming Languages, Expert System, and Software Engineering</p>
APR 2010 SEP 2010	<p>Software Engineer <i>Advanced Electronics Company</i> Member of a research and development team mainly working on implementing a DLMS protocol on ARM Processor. Also, developed Electronic Gateway desktop application called Parameterization Software PS, where it has designed and developed as a second generation of Digital Meters for Saudi Electrical Company under the Authority of AEC.</p>

DEC 2008	Associate Software Engineer
APR 2010	<i>Advanced Electronics Company</i> Member of a research and development team working on several projects. Generally, involved with a complete software development life cycle for implementing a DLMS protocol for digital meters. Also, developed a Digital Meter desktop application called Parameterization Software PS, which it has multiple software and libraries designed and developed for Saudi Electrical Company under the Authority of AEC. This project was implemented with the aim of reading and configuring the digital meters using various media, such as GPRS, Optical infrared, and PLC. In addition, worked in the testing team to individually develop a "Monitoring software", which evaluates and tests the efficiency and the correctness of the PS in the scope of reading and configuring the data from/to meters.

DATA-DRIVEN SYSTEMS DEVELOPED

DATA LAKE	<i>Strategic Data Lake Project</i> General Authority for Statistics (GASTAT) is keen on embarking on a Big Data Analytics journey and becoming one of the leading modern statistical institutes worldwide in terms of innovation, time to market, user delight, and service cost, despite its vast size and scale. The current GASTAT model of data processing focuses on reporting needs and captures data provided from external entities and surveys. GASTAT needs to conduct periodic censuses on population, housing, agriculture, fisheries, poultry, business, industry, and other sectors of the economy, creating massive amounts of data. Such data must be collected, compiled, analyzed, and published on statistical platforms. The ability to handle complex data from semi-structured and unstructured data sources and conventional structural data processing maximizes the value potential and quality of services in operational efficiency in the digital age. Managing terabytes of data efficiently, GASTAT has the potential to be a trend-setter for smart statistical data empowering representatives of GASTAT at every level with analytics, thus standardizing and speeding up the decision-making process.
ST-HADOOP	<i>MapReduce Framework for Big spatio-temporal data</i> ST-Hadoop is a MapReduce framework that acknowledges the fact that space and time play a crucial role in query processing. ST-Hadoop is an open-source extension of a Hadoop framework that injects spatio-temporal awareness in the codebase of four layers inside SpatialHadoop, namely, language, indexing, MapReduce, and operations layers. The spatio-temporal indexing techniques inside ST-Hadoop primarily tuned to provide the accommodation of new updated dataset efficiently without the need to rebuild its index. The key point behind the performance gain of ST-Hadoop is the idea of indexing, where data are temporally loaded and divided across computation nodes.
TAREEG	<i>TAREEG Map-Reduce Extraction System</i> TAREEG; a web-service that makes real spatial data, from anywhere in the world, available at the fingertips of every researcher or individual. TAREEG gets all its data by leveraging the richness of OpenStreetMap dataset; the most comprehensive available spatial data of the world. Yet, it is still challenging to obtain OpenStreetMap data due to the size limitations, special data format, and the noisy nature of spatial data. TAREEG employs MapReduce-based techniques to make it efficient and easy to extract OpenStreetMap data in a standard form with minimal effort.

MNTG	<p><i>Minnesota Traffic Generator</i></p> <p>MinnesotaTG is a project developed at the University of Minnesota. MinnesotaTG is built based on two existing traffic generators: (1) BerlinMod and (2) Thomas-Brinkhoff. The purpose of MinnesotaTG is to take an arbitrary region in the United States and generate traffic data from that region. Without this tool, generating this traffic is a complicated and drawn out process because of the number of configuration steps necessary to get either Thomas-Brinkhoff or BerlinMod both up and running, and able to work on a user specified region. The generation of the traffic is not done by the tool itself, but rather it is performed by these two different traffic generators.</p>
SHAREK	<p><i>SHAREK Dynamic Ride Sharing Framework</i></p> <p>Many ride sharing systems have been commercially introduced (e.g., Uber, Flinc, and Lyft) forming a multi-billion dollars industry. The main idea is to match people requesting a certain ride to other people who are acting as drivers on their own spare time. The matching algorithm run by these services is very simple and ignores a wide sector of users who can be exploited to maximize the benefits of these services. In this framework, we propose and demonstrate SHAREK; a driver-rider matching algorithm that can be embedded inside existing ride sharing services to enhance the quality of their matching. SHAREK has the potential to boost the performance and widen the user base and applicability of existing ride sharing services. This is mainly because within its matching technique, SHAREK takes into account user preferences in terms of maximum waiting time the rider is willing to have before being picked up as well as the maximum cost that the rider is willing to pay. Then, within its course of execution, SHAREK applies a set of smart filters that enable it to do the matching so efficiently without the need to many expensive shortest path computations.</p>
TAGHREED	<p><i>TAGHREED Microblogs System</i></p> <p>TAGHREED; a full-fledged system implemented from scratch to efficiently scale querying, analyzing, and visualizing geotagged microblogs, e.g., tweets. Taghreed supports arbitrary queries on a large number millions of microblogs that go up to several years in the past. Taghreed consists of four main components: (1) Indexer, (2) query engine, (3) recovery manager, and (4) visualizer. Taghreed indexer efficiently digests incoming microblogs with high arrival rates in light memory-resident indexes. When the memory becomes full, a flushing policy manager transfers the memory contents to disk into a spatio-temporal logical structure.</p>
ADDAD	<p><i>Power Management System</i></p> <p>ADDAD4DLMS Parameterization Software; Desktop application runs under Windows OS allows user to read and configure most of ADDAD4DLMS setting like thresholds, relays, screens, tariffs. The ADDAD-4 Smart Meters are designed to meet the needs of residential, commercial and industrial energy consumers. AECL's IEC-Standard Multi Tariff Digital Energy Meters set a new standard for revenue-grade energy meters. It provides a highly accurate energy and demand metering system with a comprehensive information display on an extended temperature large LCD. It is capable of remote access via a various types of communication ports in meters. The ADDAD-4 poly phase smart meter series comprises of 10(100) A, 20(160) A, 1.5(6) A, 3-Phase-4-Wires, 3-Phase-3-Wires, Direct (Whole current) connection, Transformer operated CT and CT-VT through connection meters. The emerging AMR technologies in the metering industry call for smart meters that have enormous communication capabilities.</p>

EDUCATION

- SEP 2015 - Jun 2019 **Ph.D in Computer Science**
Computer Science and Engineering Department, University of Minnesota–Twin Cities, USA.
Advisor: Prof. Mohamed F. Mokbel
Thesis: ST-Hadoop: A MapReduce Framework for Big Spatio-temporal Data Management
GPA: 3.604/4
- SEP 2012 - JUN 2015 **M.S. in Computer Science**
Computer Science and Engineering Department, University of Minnesota–Twin Cities, USA.
Advisor: Prof. Mohamed F. Mokbel
Project: TAREEG, A MapReduce-Based System for Extracting Spatial Data from OpenStreetMap
GPA: 3.515/4
- SEP 2003 - JUN 2008 **B.Sc. in Computer Science**
College of Computer and Information Systems , UMM-ALQURA University, KSA.
Advisor: Khaled Nasser ElSayed
Graduation Project: Multi-Agent Educational Examiner
GPA: 3.56/4, Over all grades : Excellent with Second honor.

RESEARCH IN A NUTSHELL (DETAILS IN THE COMING SECTIONS)

- Journal : 16
- Conference: 16
- Funding and Grant: 11
- Recognition and Awards: 9
- Research Service : 20
- Organizational and Community Service: 10

PUBLICATIONS

Journal

1. Sultan Daud Khan, **Louai Alarabi**, and Saleh Basalamah. Dsmsa-net: Deep spatial and multi-scale attention network for road extraction in high spatial resolution satellite images. *Arabian Journal for Science and Engineering*, 2022a. ISSN 2191-4281. doi: 10.1007/s13369-022-07082-z. URL <https://doi.org/10.1007/s13369-022-07082-z>
2. Sultan Daud Khan, **Louai Alarabi**, and Saleh Basalamah. An encoder–decoder deep learning framework for building footprints extraction from aerial imagery. *Arabian Journal for Science and Engineering*, 2022b. ISSN 2191-4281. doi: 10.1007/s13369-022-06768-8. URL <https://link.springer.com/article/10.1007/s13369-022-06768-8>
3. Rasha Sleem, Nagham Mekky, Shaker El-Sappagh, **Louai Alarabi**, Noha A. Hikal, and Mohammed Elmogy. Enhancing task assignment in crowdsensing systems based on sensing intervals and location. *Computers, Materials & Continua*, 71(3):5619–5638, 2022. ISSN 1546-2226. doi: 10.32604/cmc.2022.023716. URL <http://www.techscience.com/cmc/v71n3/46519>
4. Nora El-Rashidy, Tamer Abuhmed, **Louai Alarabi**, Hazem M. El-Bakry, Samir Abdelrazek, Farman Ali, and Shaker El-Sappagh. Sepsis prediction in intensive care unit based on genetic feature optimization and stacked deep ensemble learning. *Neural Neural Computing and Applications*, pages 1–16, 2021. URL <https://doi.org/10.1007/s00521-021-06631-1>
5. Sultan Daud Khan, **Louai Alarabi**, and Saleh Basalamah. A unified deep learning framework of multi-scale detectors for geo-spatial object detection in high-resolution satellite images. *Ara-*

bian Journal for Science and Engineering, pages 1–16, 2021a. URL <https://doi.org/10.1007/s13369-021-06288-x>

6. Hala Ahmed, **Louai Alarabi**, Shaker El-Sappagh, Hassan Soliman, and Mohammed Elmogy. Genetic variations analysis for complex brain disease diagnosis using machine learning techniques: opportunities and hurdles. *PeerJ Computer Science*, 7:e697, 2021. URL <https://doi.org/10.7717/peerj-cs.697>
7. **Louai Alarabi**, Saleh M. Basalamah, Abdeltawab M. Hendawi, and Mohammed Abdalla. Traceall: A real-time processing for contact tracing using indoor trajectories. *Inf.*, 12(5):202, 2021a. doi: 10.3390/info12050202. URL <https://doi.org/10.3390/info12050202>
8. Sultan Daud Khan, **Louai Alarabi**, and Saleh M. Basalamah. Deep hybrid network for land cover semantic segmentation in high-spatial resolution satellite images. *Inf.*, 12(6):230, 2021b. doi: 10.3390/info12060230. URL <https://doi.org/10.3390/info12060230>
9. Amr Mohamed AbdelAziz, **Louai Alarabi**, Saleh Basalamah, and Abdeltawab Hendawi. A multi-objective optimization method for hospital admission problem—a case study on covid-19 patients. *Algorithms*, 14(2), 2021. ISSN 1999-4893. doi: 10.3390/a14020038. URL <https://www.mdpi.com/1999-4893/14/2/38>
10. Mohammed Abdalla, **Louai Alarabi**, and Abdeltawab Hendawi. Crisis management art from the risks to the control: A review of methods and directions. *Information*, 12(1), 2021. ISSN 2078-2489. doi: 10.3390/info12010018. URL <https://www.mdpi.com/2078-2489/12/1/18>
11. Sultan Daud Khan, **Louai Alarabi**, and Saleh Basalamah. Toward smart lockdown: A novel approach for COVID-19 hotspots prediction using a deep hybrid neural network. *Comput.*, 9(4):99, 2020. doi: 10.3390/computers9040099. URL <https://doi.org/10.3390/computers9040099>
12. Bin Cao, Chenyu Hou, Liwei Zhao, **Louai Alarabi**, Jing Fan, Mohamed F. Mokbel, and Anas Basalamah. Sharek*: A scalable matching method for dynamic ride sharing. *GeoInformatica*, 2020. doi: 10.1007/s10707-020-00411-0. URL <https://doi.org/10.1007/s10707-020-00411-0>
13. **Louai Alarabi**, Mohamed F. Mokbel, and Mashaal Musleh. ST-Hadoop: a mapreduce framework for spatio-temporal data. *GeoInformatica*, Jul 2018. ISSN 1573-7624. doi: 10.1007/s10707-018-0325-6. URL <https://doi.org/10.1007/s10707-018-0325-6>.
14. Xiaochuang Yao, Mohamed F. Mokbel, Sijing Ye, Guoqing Li, **Louai Alarabi**, Ahmed Eldawy, Zuliang Zhao, Long Zhao, and Dehai Zhu. LandQ^{v2}: A mapreduce-based system for processing arable land quality big data. *ISPRS Int. J. Geo-Information*, 7(7):271, 2018.
15. Xiaochuang Yao, Mohamed F. Mokbel, **Louai Alarabi**, Ahmed Eldawy, Jianyu Yang, Wenju Yun, Lin Li, Sijing Ye, and Dehai Zhu. Spatial coding-based approach for partitioning big spatial data in hadoop. *Computers & Geosciences*, 106:60–67, 2017.
16. Amr Magdy, Mashaal Musleh, Kareem Tarek, **Louai Alarabi**, Saif Al-Harthi, Hicham G. Elmongui, Thanaa M. Ghanem, Sohaib Ghani, and Mohamed F. Mokbel. Taqreer: A system for spatio-temporal analysis on microblogs. *IEEE Data Eng. Bull.*, 38(2):68–76, 2015a.

Conferences Papers

1. **Louai Alarabi**, Saleh Basalamah, Mohammed Abdalla, and Abdeltawab Hendawi. A Holistic Spatial Platform For Managing Infectious Diseases, Case Study on COVID-19 Pandemic. In *2021 IEEE International Conference on Big Data (Big Data)*, pages 3721–3730, 2021b. doi: 10.1109/BigData52589.2021.9671599
2. Shahd mosa qari, Manal Abdulrahman Alharthi, Leena Solayman Houmaidan, Raghad Mohammed Alqurashi, Ashwaq Ahmed Almalki, and **Louai Alarabi**. Grid file index in big data crowdsourcing. In *ICCIT*. IEEE, 2021. doi: 10.1109/ICCIT52419.2022.9711601
3. **Louai Alarabi**, Mohamed F. Mokbel, and Mashaal Musleh. ST-Hadoop: A mapreduce framework for spatio-temporal data. In *SSTD*, volume 10411 of *Lecture Notes in Computer Science*, pages 84–104. Springer, 2017.

4. Ahmed Eldawy, **Louai Alarabi**, and Mohamed F. Mokbel. Spatial partitioning techniques in spatial hadoop. *PVLDB*, 8(12):1602–1605, 2015.
5. Bin Cao, **Louai Alarabi**, Mohamed F. Mokbel, and Anas Basalamah. SHAREK: A scalable dynamic ride sharing system. In *MDM (1)*, pages 4–13. IEEE Computer Society, 2015.
6. Amr Magdy, **Louai Alarabi**, Saif Al-Harthi, Mashaal Musleh, Thanaa M. Ghanem, Sohaib Ghani, and Mohamed F. Mokbel. TAGHREED: a system for querying, analyzing, and visualizing geotagged microblogs. In *SIGSPATIAL/GIS*, pages 163–172. ACM, 2014.
7. **Louai Alarabi**, Ahmed Eldawy, Rami Alghamdi, and Mohamed F. Mokbel. TAREEG: a mapreduce-based system for extracting spatial data from openstreetmap. In *SIGSPATIAL/GIS*, pages 83–92. ACM, 2014a.
8. Mohamed F. Mokbel, **Louai Alarabi**, Jie Bao, Ahmed Eldawy, Amr Magdy, Mohamed Sarwat, Ethan Waytas, and Steven Yackel. MNTG: an extensible web-based traffic generator. In *SSTD*, volume 8098 of *Lecture Notes in Computer Science*, pages 38–55. Springer, 2013.

Systems Demonstration

1. **Louai Alarabi** and Mohamed F. Mokbel. A demonstration of summit: a scalable data management framework for massive moving objects data. In *MDM*. IEEE, 2020.
2. **Louai Alarabi** and Mohamed F. Mokbel. A Demonstration of ST-Hadoop: A MapReduce Framework for Big Spatio-temporal Data. *PVLDB*, 10(12):1961–1964, 2017.
3. **Louai Alarabi**, Bin Cao, Liwei Zhao, Mohamed F. Mokbel, and Anas Basalamah. A Demonstration of SHAREK: an efficient matching framework for ride sharing systems. In *SIGSPATIAL/GIS*, pages 95:1–95:4. ACM, 2016.
4. Amr Magdy, **Louai Alarabi**, Saif Al-Harthi, Mashaal Musleh, Thanaa M. Ghanem, Sohaib Ghani, Saleh M. Basalamah, and Mohamed F. Mokbel. Demonstration of TAGHREED: A System for Querying, Analyzing, and Visualizing Geotagged Microblogs. In *ICDE*, pages 1416–1419. IEEE Computer Society, 2015b.
5. Mohamed F. Mokbel, **Louai Alarabi**, Jie Bao, Ahmed Eldawy, Amr Magdy, Mohamed Sarwat, Ethan Waytas, and Steven Yackel. A demonstration of MNTG - A web-based road network traffic generator. In *ICDE*, pages 1246–1249. IEEE Computer Society, 2014.
6. **Louai Alarabi**, Ahmed Eldawy, Rami Alghamdi, and Mohamed F. Mokbel. TAREEG: a mapreduce-based web service for extracting spatial data from openstreetmap. In *SIGMOD*, pages 897–900. ACM, 2014b.

Abstracts and Competitions

1. **Louai Alarabi**. Summit: a scalable system for massive trajectory data management. *SIGSPATIAL Special*, 10(3):2–3, 2018a. doi: 10.1145/3307599.3307601. URL <https://doi.org/10.1145/3307599.3307601> - (Invited Abstract)
2. **Louai Alarabi**. Summit: A scalable system for massive trajectory data management (src). In *SIGSPATIAL*. ACM, 2018b.
3. **Louai Alarabi**. ST-Hadoop: A mapreduce framework for big spatio-temporal data (src). In *SIGMOD*, pages 40–42. ACM, 2017.

FUNDING AND GRANTS

• Research Funding

- MAY 2020. PI - King Abdulaziz City for Science and Technology (KACST) - 5-20-01-007-0006 : Fast Track Funding for COVID-19 Related Research on "Monitoring, Surveillance, and Crisis Management System for the COVID-19 Pandemic". PI: Louai Alarabi.

• National Science Foundation (NSF) Travel Grants

- NOV 2018. Microsoft Research sponsored ACM Travel Grant Award to SRC selected student to present at the ACM SIGSPATIAL GIS Conference, November 06-09, 2018, held in Seattle, Washington, USA.
- NOV 2018. Student Travel Grant Award from NSF to attend and present at the ACM SIGSPATIAL GIS Conference, November 06-09, 2018, held in Seattle, Washington, USA.
- MAY 2017. Microsoft Research sponsored ACM Travel Grant Award to SRC selected student to present poster at the ACM SIGMOD/PODS Conference, May 14-19, 2017, held in Chicago, IL, USA.
- JUN 2015. Student Travel Grant Award from NSF to present a paper at the 16th IEEE International Conference on Mobile Data Management 15 - 18 June, 2015, Pittsburgh, Pennsylvania, USA.
- NOV 2014. Student Travel Grant Award from NSF to present a paper at the 22nd ACM International Conference on Advanced in Geographic Information Systems (ACM SIGSPATIAL 2014) November 4-7, 2014 – Dallas, Texas, USA.
- AUG 2011. NSF Travel Grants Awards for 12th International Symposium on Spatial and Temporal Databases.
- **Saudi National Travel Grants**
 - AUG 2017. SACM Grant to present a paper at the 15th International Symposium on Spatial and Temporal Databases SSTD, August 21 – 23, held in Arlington, VA, USA.
 - SEP 2016. SACM Grant to present a demonstration paper at the ACM SIGSPATIAL GIS Conference, Sep 31- Nov 3, held in San Francisco, CA, USA.
 - JUN 2014. International Travel Grant from GISTIC to present a demonstration paper at the ACM SIGMOD/PODS Conference, Jun 22-27, held in Snowbird, Utah, USA.
 - MAR 2014. International Travel Grant from GISTIC to present a demonstration paper at the 30th ICDE IEEE International Conference on Data Engineering, March 31-April 4, 2014. held in Chicago, IL, USA,

RECOGNITION AND AWARDS

- **Best Publication**
 - NOV 2018. Gold medal and 1st place winner of ACM SIGSPATIAL GIS'18 Student Research Competition.
 - NOV 2017. Selected for submission to a special issue of GeoInformatica Journal.
 - AUG 2017. Selected among Best Papers Award in SSTD'15.
 - MAY 2017. Finalist of ACM SIGMOD'17 Student Research Competition.
 - NOV 2014. Best Overall Demonstration Award, U-Spatial Symposium.
- **Outstanding**
 - MAY 2015. Outstanding Graduate student award provided by Saudi Cultural Mission.
 - JUL 2008. Certificate of Academic Distinction for an outstanding academic achievements in obtaining Bachelor of Science in Computer Science, UMM-ALQURA University.
 - JUL 2008. Award a Magna Cum Laude (i.e., Second Class honors), UMM-ALQURA University.
 - JUL 2008. Cumulatively 2nd rank in the Collage of Computer and Information Systems (UMM-ALQURA University) among around 1000 students.

SCHOLARSHIPS

- SEPT 2015. Scholarship for graduate students with an outstanding curriculum from The Government of Saudi Arabia to obtain Ph.D in computer Science. The scholarship covers the full tuition and other relevant required academic fees for 3 years.
- SEPT 2012. Scholarship for graduate students with an outstanding curriculum from The Government of Saudi Arabia to obtain M.Sc in computer Science. The scholarship covers the full tuition and other relevant required academic fees.
- SEPT 2004. Scholarship for under-graduate students with an outstanding curriculum from UMM ALQURA University to obtain B.Sc in computer Science. The fellowship covers the full tuition and a monthly stipend for 4 years.

SERVICE AND ACTIVITIES

- **PC member (Research, Systems, Industrial Experience, and Demo Papers):** ACM SIGSPATIAL 2022
- **PC member:** IEEE International Workshop on Big Spatial Data (BSD 2021)
- **PC member (Research, Systems, Industrial Experience, and Demo Papers):** ACM SIGSPATIAL 2021
- **Guest Editor:** MDPI, Information on Special Topic of Big Spatial Data (2021)
- **PC member:** IEEE International Workshop on Big Spatial Data (BSD 2020)
- **PC member (Research, Systems, Industrial Experience, and Demo Papers):** ACM SIGSPATIAL 2020
- **PC member (Research, Systems, Industrial Experience, and Demo Papers):** ACM SIGSPATIAL 2019
- **PC member:** IEEE International Workshop on Big Spatial Data (BSD 2019)
- **Journal Reviewer:** Listed by the year start reviewing.
 - (2022) World Wide Web Journal, Springer.
 - (2020) ISPRS International Journal of Geo-Information, MDPI.
 - (2020) Water, MDPI.
 - (2020) International Journal of Information Technology and Decision Making , World Scientific.
 - (2020) Applied Sciences, MDPI.
 - (2019) Data Mining and Knowledge Discovery, Springer.
 - (2019) Geoinformatica, Springer.
 - (2018) Transaction on Cloud Computing, IEEE.
 - (2018) Distributed and Parallel Databases Journal, Springer.
 - (2017) Complexity Journal, Hindawi.
 - (2017) Computers and Electronics in Agriculture Journal, Elsevier.
 - (2015) Transactions on Knowledge and Data Engineering TKDE, IEEE.
 - (2012) Very Large Data Base Journal.
- **External Conferences Reviewer:** VLDB '12-'18, ICDE '12-'18, SIGSPATIAL '12-'18, SIGMOD '12-'18, ICDCS '12, TKDE '14-'18, MDM '12-'18, SSDBM '12-'18, and ICPADS '17.
- **University Services:**

- Chairman of Computer Science Department. (Dec 2019 - March 2021)
- Committee member of Computer Science Curriculum (Dec 2019 -March 2021)
- Committee member of Graduate Studies in the Computer Science Department (Dec 2020 - March 2021).
- Committee member of Executive Graduate Studies in the College of Computer and Information Systems. (Dec 2019 - March 2021)
- Committee member in the College of Computer and Information System Council (Dec 2019 - March 2021)
- Committee member of Research in the Department of Computer Science (Dec 2019 - March 2021)
- **Volunteer:**
 - Student volunteer at the International Conference on Advances in Geographic Information Systems, ACM SIGSPATIAL GIS 2018.
 - Student volunteer at the International Conference on Advances in Geographic Information Systems, ACM SIGSPATIAL GIS 2014.
- **Community Volunteer:**
 - (July 2018-July 2019) **Board Director - Commonwealth Terrace Cooperative:** The board member is one of nine directors. The board member is elected at large and serves as a representative of the CTC community. The board of directors has fiduciary responsibility of the corporation and sets overall policies for the operation of CTC with the community in mind. The primary purpose of the policies is to address the needs and best interests of the entire CTC community in such a way that builds a vibrant, welcoming community and complies with the requirements of the owner.
 - (July 2018-July 2019) **Executive Treasure Officer - Commonwealth Terrace Cooperative:** The treasure officer maintains a complete and accurate of all financial transaction of CTC by working closely with finance committee managment. Serve as liaison between the borad directors and the finance committee. Performs all other duties required by law.