

Dr. Isam Mashhour Al Jawarneh

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Research Interests

Geospatial Databases, Big Data Management, Recommender Systems, Geospatial Data Science

Education

Ph.D. in Computer Science and Engineering

2016 - 2020
University of Bologna, Italy

- **Supervisor:** Prof. [Rebecca Montanari](#)
- **Thesis:** Quality of Service Aware Data Stream Processing for Highly Dynamic and Scalable Applications. [\[PDF\]](#)

M.Sc. in Information Technology

2006 - 2008
*Universiti Utara Malaysia,
Malaysia*

BSc. in Computer Science

1999 - 2005
Al Al-Bayt University, Jordan

Employment History

University of Sharjah

Sharjah, UAE

Assistant Professor at the Department of Computer Science

September 2022 - present

University of Bologna

Bologna, Italy

Postdoctoral Research Fellow, Department of Computer Science and Engineering ([DISI](#)), [Mobile Middleware Research Group](#)

April 2020 – August 2022

Research Fellow, CIRI ICT

April 2017 – February 2020

Teaching Assistant

2017 – 2018

University of Business and Technology

Jeddah, Saudi Arabia

Lecturer

2009 - 2016

Publications [J: Journal, C: Conference, B: Book Chapter]

Summary * 36 publications

As of 1/09/2025, Google Scholar citation: 545, h-index: 12

N.B. a star (*) to the left of my name indicates being the first or corresponding author or both.

Peer-reviewed Journal publications (Indexed in Scopus and Web of Science)

[j9] Alshamsi, R. A., **Al Jawarneh, I. M.**, Foschini, L., & Corradi, A. (2025). ApproxGeoMap: An Efficient System for Generating Approximate Geo-Maps from Big Geospatial Data with Quality of Service Guarantees. *Computers*, 14(2), 35. [[pdf](#)]

[j8] * **Al Jawarneh, Isam Mashhour**, Paolo Bellavista, Antonio Corradi, Luca Foschini, and Rebecca Montanari. "SpatialSSJP: QoS-Aware Adaptive Approximate Stream-Static Spatial Join Processor." *IEEE Transactions on Parallel and Distributed Systems* (2023). [[pdf](#)]

[j7] * **Al Jawarneh, Isam Mashhour**, Luca Foschini, and Paolo Bellavista. "Polygon Simplification for the Efficient Approximate Analytics of Georeferenced Big Data." *Sensors* 23, no. 19 (2023): 8178.

[j6] * **Al Jawarneh, Isam Mashhour**, Luca Foschini, and Paolo Bellavista. 2023. "Efficient Integration of Heterogeneous Mobility-Pollution Big Data for Joint Analytics at Scale with QoS Guarantees" *Future Internet* 15, no. 8: 263. <https://doi.org/10.3390/fi15080263>.

[j5] * **I. M. Al Jawarneh**, P. Bellavista, A. Corradi, L. Foschini, and R. Montanari. QoS-Aware Approximate Query Processing for Smart Cities Spatial Data Streams. *Sensors* 2021, 21, 4160. Journal **Impact Factor** (indexed in **Scopus**): 3.9

[j4] * **I. M. Al Jawarneh**, P. Bellavista, A. Corradi, L. Foschini, and R. Montanari, "Efficient QoS-Aware Spatial Join Processing for Scalable NoSQL Storage Frameworks," *IEEE Transactions on Network and Service Management*, 2020. Journal **Impact Factor** (indexed in **Scopus**): 5.3. [[PDF](#)]

[j3] * **I. M. Al Jawarneh**, P. Bellavista, A. Corradi, L. Foschini and R. Montanari, "Big Spatial Data Management for the Internet of Things: A Survey," *Journal of Network and Systems Management*, pp. 1-46, 2020. DOI: 10.1007/s10922-020-09549-6. Journal **Impact Factor** (indexed in **Scopus**): 3.6

[j2] * **I. M. Al Jawarneh**, P. Bellavista, A. Corradi, L. Foschini, R. Montanari, J. Berrocal and J. M. Murillo, "A Pre-Filtering Approach for Incorporating Contextual Information Into Deep Learning Based Recommender Systems," *IEEE Access*, vol. 8, pp. 40485-40498, 2020. DOI: 10.1109/ACCESS.2020.2975167. Journal **Impact Factor** (indexed in **Scopus**): 3.476. [[PDF](#)]

[j1] * **I. M. Aljawarneh**, "Design of a data warehouse model for decision support at higher education: A case study," *Information Development*, vol. 32, (5), pp. 1691-1706, 2016. DOI: 10.1177/0266666915621105. Journal **Impact Factor** (indexed in **Scopus**): 1.440

Peer-reviewed (Scopus-indexed) conference and workshop publications

[C18] Alhammadi, Fatima Ahmed, Haya Almadhloum Alsuaiedi, Shooq Abdelrahman Alzarooni, and **Isam Mashhour Al Jawarneh**. "Line Simplification for Efficient Approximate Join Queries On Big Geospatial Data." In 2024 Fifth International Conference on Intelligent Data Science Technologies and Applications (IDSTA), pp. 89-94. IEEE, 2024.

- [C17] Alsalama, A., Kubba, A., Alsmirat, M., & ***Al Jawarneh, I. M.*** (2024, September). A Novel Approximate Computing Method for Efficient Search in Satellite Remote Sensing Products. In 2024 International Conference on Multimedia Computing, Networking and Applications (MCNA) (pp. 21-27). IEEE.
- [C16] ****Al Jawarneh, I. M.***, Foschini, L., & Corradi, A. (2023, November). Efficient Generation of Approximate Region-based Geo-maps from Big Geotagged Data. In 2023 IEEE 28th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD) (pp. 93-98). IEEE.
- [C15] ****Al Jawarneh, I. M.***, Montanari, R., & Corradi, A. (2023, December). Cost-Effective Approximate Aggregation Queries on Geospatial Big Data. In 2023 IEEE Globecom Workshops (GC Wkshps) (pp. 1313-1318). IEEE.
- [C14] ****Al Jawarneh, I. M.***, Bellavista, P., Corradi, A., Foschini, L., & Montanari, R. (2022, May). Efficient Geospatial Analytics on Time Series Big Data. In ICC 2022-IEEE International Conference on Communications (pp. 3002-3008). IEEE.
- [C13] * ***I. M. Al Jawarneh***, P. Bellavista, A. Corradi, L. Foschini, and R. Montanari, "Efficiently Integrating Mobility and Environment Data for Climate Change Analytics," in 2021 IEEE 26th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD), 2021: IEEE, pp. 1-5
- [C12] * ***I. M. Al Jawarneh***, P. Bellavista, A. Corradi, L. Foschini and R. Montanari, "Context Incorporation Techniques for Social Recommender Systems," ICC 2021 - IEEE International Conference on Communications, 2021, pp. 1-6. (**IEEE ICC 2021**)¹. [[PDF](#)]
- [C11] * ***I. M. Al Jawarneh***, P. Bellavista, A. Corradi, L. Foschini and R. Montanari, "Locality-Preserving Spatial Partitioning for Geo Big Data Analytics in Main Memory Frameworks," GLOBECOM 2020 - 2020 IEEE Global Communications Conference, 2020, pp. 1-6. (**IEEE GLOBECOM 2020**)¹[[PDF](#)]
- [C10] * ***I. M. Al Jawarneh***, P. Bellavista, A. Corradi, L. Foschini, and R. Montanari, "Spatially Representative Online Big Data Sampling for Smart Cities," in 2020 IEEE 25th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD), 2020: IEEE, pp. 1-6. [[PDF](#)]
- [C9] * ***I. M. Al Jawarneh***, P. Bellavista, L. Foschini and R. Montanari, "Spatial-aware approximate big data stream processing," in 2019 IEEE Global Communications Conference (GLOBECOM), 2019, pp. 1-6. (**IEEE GLOBECOM 2019**)¹[[PDF](#)]
- [C8] * ***I. M. Al Jawarneh***, P. Bellavista, F. Bosi, L. Foschini, G. Martuscelli, R. Montanari and A. Palopoli, "Container orchestration engines: A thorough functional and performance comparison," in ICC 2019-2019 IEEE International Conference on Communications (ICC), 2019, pp. 1-6. (**IEEE ICC 2019**)¹[[PDF](#)]
- [C7] * ***I. M. Al Jawarneh***, P. Bellavista, L. Foschini, G. Martuscelli, R. Montanari, A. Palopoli and F. Bosi, "Qos and performance metrics for container-based virtualization in cloud environments," in Proceedings of the 20th International Conference on Distributed Computing and Networking, 2019, pp. 178-182.
- [C6] * ***I. M. Al Jawarneh***, P. Bellavista, A. Corradi, L. Foschini, R. Montanari and A. Zanotti, "In-memory spatial-aware framework for processing proximity-alike queries in big spatial data," in 2018 IEEE 23rd International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD), 2018, pp. 1-6. [[PDF](#)]
- [C5] * ***I. M. Al Jawarneh***, P. Bellavista, F. Casimiro, A. Corradi and L. Foschini, "Cost-effective strategies for provisioning NoSQL storage services in support for industry 4.0," in 2018 IEEE Symposium on Computers and Communications (ISCC), 2018, pp. 1227. [[PDF](#)]

¹ IEEE ICC and IEEE GLOBECOM are flagship conferences in Computer Science

[C4] S. Bertacchi, **I. M. Al Jawarneh**, F. I. Apollonio, G. Bertacchi, M. Cancilla, L. Foschini, C. Grana, G. Martuscelli and R. Montanari, "SACHER project: A cloud platform and integrated services for cultural heritage and for restoration," in Proceedings of the 4th EAI International Conference on Smart Objects and Technologies for Social Good, 2018, pp. 283-288.

[C3] * **I. M. Al Jawarneh**, P. Bellavista, L. Foschini, R. Montanari, J. Berrocal and J. M. Murillo, "Toward privacy-aware healthcare data fusion systems," in International Workshop on Gerontechnology, 2018, pp. 26-37.

[C2] * **I. M. Aljawarneh**, P. Bellavista, C. R. De Rolt and L. Foschini, "Dynamic identification of participatory mobile health communities," in Cloud Infrastructures, Services, and IoT Systems for Smart CitiesAnonymous Springer, 2017, pp. 208-217.

[C1] * **I. M. Aljawarneh**, P. Bellavista, A. Corradi, R. Montanari, L. Foschini and A. Zanotti, "Efficient spark-based framework for big geospatial data query processing and analysis," in 2017 IEEE Symposium on Computers and Communications (ISCC), 2017, pp. 851-856. [[PDF](#)]

Peer-reviewed Book Chapters

[B1] P. Bellavista, J. Berrocal, A. Corradi, S. K. Das, L. Foschini, **I. M. Al Jawarneh** and A. Zanni, "How Fog Computing Can Support Latency/Reliability sensitive IoT Applications: An Overview and a Taxonomy of State-of-the-art Solutions," Fog Computing: Theory and Practice, pp. 139-213, 2020. [[BOOK](#)]

Research Experience & Software Artifacts

2023	EMDI: Environmental Mobility Data Integrator	<i>University of Sharjah, UAE</i>
EMDI	<ul style="list-style-type: none">Designed EMDI: an interactive system for the joint analytics of multi-domain multidimensional heterogeneous mobility data.	
2021	Efficient processing of big mobility and meteorological data	<i>University of Bologna, Italy</i>
MeteoMobil	<ul style="list-style-type: none">Designed MeteoMobil: an interactive system for combined analytics of integrated information representing mobility and environment conditions.Supervised prototyping & implementation of MeteoMobil² in Apache Spark. <i>Collaborators:</i> Denis Pereira.Authored and presented a conference paper for IEEE CAMAD 2021 (C13).	
2020 - 2021	Geospatial Approximate Query Processing	<i>University of Bologna, Italy</i>
ApproxSSPS	<ul style="list-style-type: none">Designed ApproxSSPS: a system for approximate processing of geo-referenced mobility data, at scale, with quality-of-service guarantees.Authored a research paper and published in MDPI sensors (J5).Prototyped and implemented ApproxSSPS³ atop SparkSQL & Apache Kafka and authored a blog explaining how to run the system.	
SpatialSPE	<ul style="list-style-type: none">Designed SpatialSPE, which is a system that incorporates a novel geospatial online sampling method that I have designed known as SAOS.Authored conference papers, presented and published in IEEE CAMAD 2020 (C10) and IEEE GLOBECOM 2019 (C9).Prototyped and implemented SpatialSPE⁴ over Spark Structured Streaming & open-sourced it on GitHub.	

² <https://github.com/denper1/MeteoMobilityIntegration>

³ <https://github.com/IsamAljawarneh/ApproximateStream>

⁴ <https://github.com/IsamAljawarneh/SpatialSPE>

SpatialSSJP	<ul style="list-style-type: none"> Designed SpatialSSJP, which is a novel adaptive stream-static geospatial join processing system. Authored a journal research paper and submitted for publication in an IEEE transactions journal. Prototyped and Implemented SpatialSSJP atop Spark Structured Streaming. 	
2019 - 2020	Context-Aware Deep Learning based Recommender Systems	<i>University of Bologna, Italy</i>
CA-NCF & US-NCF	<ul style="list-style-type: none"> Designed CA-NCF: CA-NCF is a Pre-Filtering Approach for Incorporating Contextual Information into Deep Learning Based Recommender Systems. Authored research papers, one published in IEEE Access (J2), and one presented and published in IEEE ICC 2021 (C12). Prototyped and Implemented CA-NCF⁵ & US-NCF in BigDL (a framework for scalable deep learning over Apache Spark). I also open-sourced CA-NCF in GitHub. 	
2017 – 2018	Geospatial big data management	<i>University of Bologna, Italy</i>
SpatialBPE	<ul style="list-style-type: none"> Designed SpatialBPE: a novel scalable distributed geospatial batch query processing system. Authored conference papers, presented and published in IEEE ISCC 2017 (C1), IEEE CAMAD 2018 (C6) & IEEE GLOBECOM 2020 (C11). Prototyped & implemented SpatialBPE atop Apache Spark. 	
SpatialNoSQL	<ul style="list-style-type: none"> Designed SpatialNoSQL: a novel system for the scalable storage and static processing of big geospatial data in the Cloud. Authored research papers, one published in IEEE Transactions (J4), and one presented and published in IEEE ISCC 2018 (C5). Prototyped and implemented SpatialNoSQL in MongoDB. 	
2017 - 2018	Data warehousing & Data lakes	<i>University of Bologna, Italy</i>
SACHER MuSE CH	<ul style="list-style-type: none"> Designed SACHER Multidimensional Search Engine for Cultural Heritage service (SACHER MuSE CH): an advanced multi-dimensional search system for cultural heritage (CH) data coming from heterogeneous sources. Prototyped & Implemented SACHER MuSE CH in MongoDB. Co-authored a conference paper (C4). Presented our work in two exhibitions in Italy. 	

Institutional Research

2024 - 2026	Seed project: “Distributed Algorithms for Efficient Approximate Analytics of Multidimensional Big Data Streams”	<i>University of Sharjah, UAE</i>
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⁵ <https://github.com/IsamAljawarneh/CA-NCF>

- Status: **Accepted**, start date: **May 30, 2024**

2021/2022	Development of a scalable system for supporting the storage and processing of ontologies modelling materials	<i>University of Bologna, Italy</i>
	<ul style="list-style-type: none"> • Status: completed • With Paolo Bellavista, Antonio Corradi, Luca Foschini, Rebecca Montanari from University of Bologna, Italy • Within the framework of the H2020 SIMDOME – Digital Ontology-based Modelling Environment for Simulation of Materials - EU's research and innovation funding programme (H2020) 	

2020 - 2021	Design of a processing system for cultural heritage data	<i>University of Bologna, Italy</i>
	<ul style="list-style-type: none"> • Status: completed • With Paolo Bellavista, Antonio Corradi, Luca Foschini, Rebecca Montanari from University of Bologna, Italy. • Within the framework of the PON “RICERCA E INNOVAZIONE” 2014 – 2020- IDEHA, Italian national co-funding 	

Teaching Experience (Undergraduate → UG, Postgraduate PG)

2022 - current	Assistant Professor	<ul style="list-style-type: none"> - GIS Programming fundamentals – Fall 24/25 - Foundations of data science (PG) – Spring 22/23, Spring 23/24, Spring 24/25 <ul style="list-style-type: none"> o I have developed this new course and designed the materials from scratch (first time being taught by “data science” master’s degree program at University of Sharjah) - Multimedia design and Programming (UG) – Fall 23/24 & 24/25 - Object Oriented Software Design & Implementation (UG) – Fall 24/25 - Junior Project (UG) – Spring 22/23, & 23/24 - Senior Project (UG) – Fall 22/23, & 23/24 - Introduction to IT (UG) – Summer 23, & 24 - Programming for Engineers (UG) – Fall 22/23, & 23/24 - Web Programming (UG) – Fall 22/23, & 23/24 <ul style="list-style-type: none"> o Updated the course materials. - Development of Web Applications (UG) – Fall 22/23, & 24/25 <ul style="list-style-type: none"> o Updated the course materials. 	<i>University of Sharjah, UAE</i>
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2021/2022	Postdoctoral Research Fellow	Designing Distributed Geospatial Data-Intensive Applications – PhD level course (PG), <ul style="list-style-type: none"> - I have designed the course and created the course materials. - Course link 	<i>University of Bologna, Italy</i>
2017/2018	Teaching Assistant	37085 - Principles, Models and Applications for Distributed Systems M – LAB, (postgraduate level), <i>I have redesigned the course lab materials.</i>	<i>University of Bologna, Italy</i>
2009 - 2016	University Lecturer	<ul style="list-style-type: none"> - COE 201 - Computer Programming 1 (Undergraduate, UG) - IT203 Object-Oriented Computer Programming (UG) - IT204 Data Structures & Algorithms (UG) - IT240 databases 1 (UG) - IT251 Software Engineering 1 (UG) - IT499 Graduation Project (UG) 	<i>University of Business and Technology, Saudi Arabia</i>

Advising Experience

Several Projects of Master Students

University of Sharjah, UAE

- **Project title:** Comparing the performance of centroid-based and density-based clustering methods for analyzing hyperlocal big georeferenced air quality data
 - o Code publicly available [here](#)⁶
- **Project title:** A Novel Exploratory Spatial Data Analytics (ESDA) Framework for Efficient Combined Analytics of Big Georeferenced Hyperlocal Air Quality and Mobility Data
 - o Code publicly available [here](#)⁷

2023/2024

Graduate Researchers

University of Bologna, Italy

Reem Abdelaziz

Started 2024 – ongoing

- **Thesis title:** A Large-Scale Processing System for Heterogenous Geospatial Big Data with Applications in Smart Cities using GeoAI

⁶ <https://github.com/Dr-Isam-ALJAWARNEH/ds-project-ESDA>

⁷ <https://github.com/Dr-Isam-ALJAWARNEH/ds-project-clustering-AQ-data>

Lorenzo Felletti

- **Thesis title:** Edge Cloud Queries for Geospatial Data Processing and Approximate Queries
 - o Code publicly available [here](#)⁸
 - o Thesis available online [here](#)⁹

Undergraduate Researchers

Denis Pereira

- **Thesis title:** QoS-aware Cloud-based Meteo and Mobility Data Processing at Scale
 - o Code publicly available [here](#)¹⁰

*University of Bologna,
Italy*

2021

- supervised several undergraduate final year graduation projects in several CS areas.

*University of Business
and Technology, Saudi
Arabia*

2009 - 2016

Academic Services

PC member

- **(2023)** International Conference on Intelligent Data Science Technologies and Applications (IDSTA2023) - IEEE
- **(2022)** International Symposium on Algorithmic Aspects of Cloud Computing (ALGOCLOUD)

TPC Chair

- International Conference on Modern Computing, Communication, and Applications (MCNA), IEEE, Tampa, Florida, USA, 19-22 May 2025

Technical Program Committee (TPC) member

- IEEE Globecom 2024 CQRM
- **(2024)** IEEE ICC'24 - CQRM Symposium
- **(2023)** IEEE ICC'23 - CQRM Symposium
- **(2022)** IEEE ICC 2022
- IEEE BlackSeaCom 2021

Invited journal reviewer ([publons certificate](#))

- IEEE Transactions on Parallel and Distributed Systems (**2024**)

⁸ <https://github.com/lorenzofelletti/EdgeCloudApproximate>

⁹ https://amslaurea.unibo.it/28917/1/felletti_lorenzo_tesi.pdf

¹⁰ <https://github.com/denper1/MeteoMobilityIntegration>

- IEEE Transactions on Big Data (**2023**)
- Big Earth Data (**2023**)
- Future Generation Computer Systems (**2023**)
- Big Earth Data - Taylor and Francis (**2023**)
- Geo-Spatial Information Science – Taylor and Francis (**2022 & 2025**)
- IEEE transactions on emerging topics of computing
- ACM computing surveys
- IEEE Internet of Things Journal
- MDPI applied sciences
- MDPI Sensors
- IEEE Transactions on Emerging Topics in Computing [[2021 reviewers list](#)]
- IEEE Computer Magazine
- International Journal of Distributed Sensor Networks
- Information Development
- Concurrency and Computation: Practice and Experience
- Wireless Networks

Invited conference reviewer

- **IDSTA2023**
- IEEE WCNC (**2023**)
- MSWIM 2021: ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems
- MSWIM 2020: The 23rd International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems
- IEEE GC'22 Wireless Communications Symposium
- IEEE Globecom 2020 CQRM ([2020 reviewers list](#))
- IEEE ISCC 2020
- IEEE CBDCom 2020: The 6th IEEE International Conference on Cloud and Big Data Computing
- IEEE WCNC 2020: IEEE Conference on Wireless Communications and Networking
- IEEE PIMRC 2019 - Track 4: IEEE International Symposium on Personal, Indoor and Mobile Radio Communications
- SCCS-2019: 2019 2nd Scientific Conference of Computer Sciences (SCCS)
- CASPer'18: 7th International Workshop on Crowd Assisted Sensing, Pervasive Systems and Communications

Awards & Fellowships

2020 - 2022	Research Fellowship, merit-based	<i>DISI, University of Bologna, Italy</i>
2017 - 2020	Research Fellowship, merit-based	<i>CIRI ICT, University of Bologna, Italy</i>
2016 – 2019	PhD@ISA Fellowship, merit-based	<i>Institute of Advanced Studies (ISA), University of Bologna, Italy</i>
Sep 2018 – Dec 2018	mobility of young researchers - Marco Polo Program, merit-based, <i>spent at the University of Extremadura, Spain.</i>	<i>DISI, University of Bologna, Italy</i>

Talks & Presentations

2024	<i>Line Simplification for Efficient Approximate Join Queries On Big Geospatial Data</i>	<i>The International Conference on Intelligent Data Science Technologies and Applications (IDSTA2024) - 24-27 Sept. 2024 Dubrovnik, Croatia.</i>
2022	<i>Designing Distributed Highly Dynamic Multidimensional Data-Intensive Applications</i>	<i>College of Computing and Informatics, University of Sharjah, UAE</i>
2021	<i>Cloud-based Geospatial open systems for mitigating climate change: research directions, challenges, and future perspectives.</i> [PDF] <ul style="list-style-type: none"> - FOSS4G2021 - Invited by Microsoft - [Presentation video] 	<i>Buenos Aires, Argentina</i> <i>Virtual Conference, online</i>
2021	<i>Efficiently Integrating Mobility and Environment Data for Climate Change Analytics.</i> [PDF] <ul style="list-style-type: none"> - IEEE CAMAD 2021 	<i>Virtual Conference, online</i>
2021	<i>Context Incorporation Techniques for Social Recommender Systems.</i> [PDF] <ul style="list-style-type: none"> - IEEE ICC 2021 	<i>Montreal, Canada</i> <i>Virtual Conference, online</i>
2020	<i>Locality-Preserving Spatial Partitioning for Geo Big Data Analytics in Main Memory Frameworks.</i> [PDF] <ul style="list-style-type: none"> - IEEE GLOBECOM 2020 	<i>Taipei, Taiwan</i> <i>Virtual Conference, online</i>
2020	<i>Spatially Representative Online Big Data Sampling for Smart Cities.</i> [PDF] <ul style="list-style-type: none"> - IEEE CAMAD 2020 	<i>Virtual Conference, online</i>

Funding

Funding Agency	Project Title	Description	Role
<i>University of Sharjah, UAE</i>	Seed project: “Distributed Algorithms for Efficient Approximate Analytics of Multidimensional Big Data Streams”		<i>Lead PI</i>
2024 – current			

Microsoft: AI for Earth Fund	Supporting Highly-Efficient Machine Learning Applications for Reducing the Impact of Climate Change on Human Health in Metropolitan Cities	The research project targets the challenge of reducing the adverse effects of climate changes on human health. Applications of Artificial Intelligence (AI) on spatially-tagged time-series human and vehicle mobility data to help in the efforts for reducing potential impacts of climate change.	Lead PI
07/30/2020 - 07/30/2022	A data warehouse for decision support at higher education		Lead PI

02/01/2015 - 12/30/2015

Professional Training

- July 2019** 3rd International **Summer School on Deep Learning** (DeepLearn 2019). Warsaw, Poland.
- July 2017** Seventh European **Business Intelligence & Big Data Summer School** (eBISS 2017), Brussels, Belgium.
 - Presented a poster titled “QoS-Aware Big Geospatial Data Processing”. [\[PDF\]](#)

Language Competence

- Arabic** Native proficiency
- English** Full professional proficiency (¹¹Level: C1)
- Italian** Average working proficiency (⁶Level: A2)

Professional Memberships

- Institute of Electrical and Electronics Engineers (IEEE)
- Institute of Advanced Studies (ISA), University of Bologna, Italy 2016 - 2020

¹¹ CERF levels, Common European Reference Framework