

PERSONAL INFORMATION

**Mamoun Abu Helou**

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<https://sciprofiles.com/profile/1512877>

<https://www.scopus.com/authid/detail.uri?authorId=36782413700>

Sex: Male | Nationality: Palestinian

**POSITION
& INTRESST****Associate Professor**

Data & Knowledge Engineering, Software Engineering, e-Services,
Semantic Web and Computational Linguistics

ACADEMIC QUALIFICATION

- 2016** Doctorate of Philosophy in Computer Science
Università degli Studi di Milano Bicocca, Italy
- 2008** Master of Science in Computing Systems Engineering
Politecnico di Milano University, Milano, Italy.
- 2005** Bachelor of Science in Computer Engineering
Al-Quds University, Jerusalem, Palestine.
- 2000** Secondary School (Tawjihi) Certificate, Scientific Stream
Al-Uma Secondary School, Jerusalem, Palestine.

WORK EXPERIENCE

- Aug. 2024 - to present **Director, General Directorate of IT.**
Al-Istiqlal University, Jericho, Palestine
- May. 2024- to present **Associate Professor**
Department of Data Science, Al-Istiqlal University
- Sept. 2022- to Aug. 2024 **Chair, Data Science Department.**
Al-Istiqlal University, Jericho, Palestine
- Sept. 2021- to Feb. 2023 **Dean, Faculty of Information Technology.**
Al-Istiqlal University, Jericho, Palestine
- Sept. 2019- Sept. 2021 **President Assistant for Planning, Development, and Quality.**
Al-Istiqlal University, Jericho, Palestine

- Sept. 2016- to 2024 **Assistant Professor**
Department of Data Science, Al-Istiqlal University
- March-Aug 2016 **ITC Consultant**
Continuing Education and Community Service Center, Al-Quds Open University
- Proposal writing and Project Manager
- Fall 2014 **Researcher \ Lecturer**
Department of Computer Science, Birzeit University, Palestine.
- Introduction to Computer and Programming
 - Co-supervisor of BSc. and MSc. students.
- 2012 - 2014 **Researcher**
Birzeit University, Palestine.
- Project manager and proposal writing (SEIRA , and E-Government Projects)
 - Architectural design for lexical database.
- 2011-2012 **Software Engineer**
Bancor S.r.l. – via Luigi Vanvitelli 44, Milano
- Forming a platform independent machine (Linux, MS Windows®)
- 2009-2011 **Research Assistant**
Dipartimento di Elettronica e Informazione, Politecnico di Milano University, Italy.
- Natural language Query Understanding: Mapping natural language queries to search services
- 2006-2015 **Teaching IT course s**
Part time teacher, Libyan School , Milano, Italy
- 2005-2006 **Teacher Assistant**
Computer Engineering Department, Al-Quds University. Palestine.
- Instructor of the Programming Lab, Digital Lab, Computer Architecture and Microprocessor Lab
- 2003-2004 **Volunteer Teacher**
Supporting low Income students (elementary level), at Pyalara organization's educational programs in Palestine

Projects & Study Experience

- **PASS-DDDM (2018-to 2023)**
Data-driven decision making framework Enhancing Policy and Decision making across Al-Istiqlal University campus.
A university funded project that aims to explore Data in building Decision support system aiming to improve quality for education and managerial process at Al-Istiqlal University.
Output: Conceptual big data DDDM framework (research article at JATIT 2023)

- EW-Shopp project (2017)

EW-Shopp (<http://www.ew-shopp.eu/>). The activities are carried out in cooperation with the AI & DB group at University of Milano-Bicocca .

Research Activity: [Research Cooperation] Cross-Lingual Semantic Annotation

The EW-Shopp, is an EU H2020 funded project, aims at deploying and hosting a data integration platform to ease these data integration tasks, by embedding shared data models, robust data management techniques and semantic reconciliation methods.

Technology Used: Java/J2EE, Apache Tomcat, MySQL, Lexical & Semantic resources.

Output: Cross-lingual semantic table annotation framework

- COMSODE Project (2015-2016)

COMSODE (<http://www.comsode.eu/>). The activities are carried out in cooperation with the AI & DB group at University of Milano-Bicocca .

Research Activity: [Research Assistant] Semantic Annotation

Datasets published in the web (e.g., RDF, Excel, CSV files) are expressed in different languages; this makes the integration and the access to this information more challenging. One of the main goals of this research activity is to develop cross-lingual mapping algorithms and tools that support the semantic interoperability and enable the data integration among datasets published in different languages.

Technology Used: Java/J2EE, Apache Tomcat, MySQL, Eclipse, Lexical & Semantic resources.

Output: Part of PhD research work & several research articles

- SIERA project (2012-2013)

SIERA (sina.birzeit.edu/SIERA). The activities are carried out in cooperation with BZU and the AI & DB group at University of Milano-Bicocca.

Research Activity: [Research Assistant, PhD Thesis] Constructing Lexical Semantic Resources.

I have been involved in the architectural design of the lexical database and developed algorithm for mapping between concepts expressed in different languages.

Technology Used: Java/J2EE, Apache Tomcat, MySQL, Eclipse, GATE, NLP tools, Lexical & Semantic Resources, and Protégé for building intelligent systems.

Output:

- Cross-lingual lexical mapping with local similarity optimization algorithm (abuhelou & palmonari, 2015a).
- ICLM: interactive Cross-lingual Mapping, a java based web tool for collecting multi user's feedback for mapping concepts across different languages.

- e-Government Lifelong Learning Consortium (2012)

Pal-Gov, an EU tempus project that aims to develop a set of contemporary knowledge materials by the Palestinian Universities, consistent with EU standards that will fulfill the needs of the national plans of Palestine to implement IT based solutions for e-Government.

Research Activity: [Research Assistant] ontology engineering, e-Services, interoperability framework.

I participated as a research assistant to support building the framework and support managing the project activities.

Technology Used: Java/J2EE, Apache Tomcat, MySQL, Eclipse, GATE, NLP tools, Lexical & Semantic Resources, and Protégé for building intelligent systems.

- Search Computing Project (2009-2011)

Search computing (<http://www.search-computing.it>). The activities in the area of search computing are carried out in cooperation with the database group at Politecnico di Milano.

Research Activity: [Research Assistant] Natural language Query Understanding

Queries to a search computing system are presented in natural language, but they must be understood and mapped to the available search services. I have worked on NLP methods for mapping natural language queries to web search services, dealing with word sense disambiguation and query answering.

Technology Used: Java/J2EE, Apache Tomcat, MySQL, Eclipse, GATE, NLP tools, KB.

Output: Java based framework for Geo-Referenced Queries understanding (abuhelou, 2011a,b).

- Genome Functional INtegrated Discoverer (GFINDER) (2008)

GFINDER (<http://www.bioinformatics.polimi.it/GFINDER/>) . The activities were carried out in cooperation with the DB group at Politecnico di Milano.

Research Activity: [MSc thesis] Architecture For Genomic Data Import In An Integrated Data Warehouse

The work highlights over the choice of the parsing methodology based on the data source file format (e.g., flat, text, and xml files), the implementation of the generic parsing procedure, the parsers implementation, the database schema validation with respect to the required data to be imported, the performance of these parsers; the query execution, the memory size limitation, and the multi thread execution, and finally the GFINDER Parser GUI.

Technology Used: Java, MySQL, PostgreSQL, Eclipse, NetBeans.

Outputs: GFINDER Parser, a Java based application (Msc thesis, 2008).

- BSc. Graduate project (2005)

Research Activity: [BSc. Graduate project]

The Braille key board is used as an input device for those uses, these key are translated to the proper letter in an diacritics Arabic letter, this conversion done in three steps the first is to convert the corresponding Braille code to its Arabic corresponding letter, then after we got the Arabic sentence the diacriticsing for these word follow that and to put a fully diacritics sentences which then will be pronounced using a speech synthesizer, which is the last stage. This synthesizer is a TTS system by diaphones.

Technology Used: VB, MS Access, Speech Synthesizer Tools.

Output: AVIAHS Prototype

- BSc. Training Period (2004)

Palestine and Lyon's Universities Solidarity (PLUS) (<http://liris.cnrs.fr/~paipplus/>).

Research Activity: [BSc. Training Period]

Working in developing the kernel part of an e-learning project environment dedicated to distance learning and providing an original experience based assistance to the learners.

Technology Used: VB, C#.

PERSONAL SKILLS

Computer skills

- Databases: MS Access, MySQL, Postgresql
- Information Quality Analyst SW: GATE for text engineering
- Programming Languages: Java/J2EE, Java script, VB, C/C++, JSP, UML
- Data Structure and Algorithm Analysis
- Web Application and Internetworking
- AI & Semantics: NLP parsers, knowledge bases, lexical databases, ontologies
- Platforms: Linux, MS Windows®

Courses I Can Teach

- Data Management : Databases and MIS
- E-Government (MSc & BSc level)
- Software Engineering
- Programming Languages : OOP, C/C++
- Semantic Web: Information Retrieval, Data Mining, Computational Linguistic and NLP
- Data Structure and Algorithm Analysis
- Web Application and Internetworking

Mother tongue Other languages

Arabic

UNDERSTANDING

Listening

Reading

SPEAKING

Spoken interaction

Spoken production

WRITING

English

C2

C2

C1

B2

B2

Italian

A2

A1

B1

A2

A1

Levels: A1/2: **Basic user** - B1/2: **Independent user** - C1/2 **Proficient user**
Common European Framework of Reference for Languages

Driving licence

B

ADDITIONAL INFORMATION

Publications

2024

M Atoum , W Abu-ulbeh, M **Abu Helou**, A T Mahmmoud, H Iwida
Toward developing NCSS: Status, Challenges, and Future Directions, a comparative Study. Egyptian Informatics Journal (under review)

E Daraghmi, A Hamoudi, M **Abu Helou**, Decentralizing Democracy: Secure and Transparent E-Voting Systems with Blockchain Technology in the Context of Palestine, Future Internet 16 (11), 388. <https://doi.org/10.3390/fi16110388>

2023

Mamoun Abu Helou , A Unified Framework For Big Data Driven Decision Making System In Higher Education Institutes , Journal of Theoretical and Applied Information Technology, July 2023 . Vol. 101 No.12. (E-ISSN 1817-3195 / ISSN 1992-8645)
<http://www.jatit.org/volumes/Vol101No12/21Vol101No12.pdf>

Mahmoud Theeb; **Mamoun Abu Helou**; and Waheeb Abu Ulbeh (2023) "Crimes of assault on electronic programmes in Palestinian legislation," *AAU Journal of Business and Law* بمجلة جامعة العين للأعمال والقانون Vol. 7: Iss. 1, Article 3. Available at: <https://digitalcommons.aaru.edu.jo/aaubl/vol7/iss1/3>

2022

Daraghmi, Yousef-Awwad, **Mamoun Abu Helou**, Eman-Yasser Daraghmi, and Waheeb Abu-ulbeh. 2022. "IoT-Based System for Improving Vehicular Safety by Continuous Traffic Violation Monitoring" *Future Internet* 14, no. 11: 319. <https://doi.org/10.3390/fi14110319>

Muhammad Ishaq, Adnan Abid, Muhammad Shoaib Farooq, Muhammad Faraz Manzoor, Uzma Farooq, Kamran Abid, **Mamoun Abu Helou**, Advances in database systems education: Methods, tools, curricula, and way forward. Educ Inf Technol (2022). <https://doi.org/10.1007/s10639-022-11293-0>

M. S. Farooq, S. Riaz, **M. A. Helou**, F. S. Khan, A. Abid and A. Alvi, "Internet of Things in Greenhouse Agriculture: A Survey on Enabling Technologies, Applications, and Protocols," in IEEE Access, vol. 10, pp. 53374-53397, 2022, doi: [10.1109/ACCESS.2022.3166634](https://doi.org/10.1109/ACCESS.2022.3166634) .

Khasawneh, Ahmad M., **Mamoun A. Helou**, Aanchal Khatri, Geetika Aggarwal, Omprakash Kaiwartya, Maryam Altalhi, Waheeb Abu-ulbeh, and Rabah AlShboul. 2022. "Service-Centric Heterogeneous Vehicular Network Modeling for Connected Traffic Environments" *Sensors* 22, no. 3: 1247. <https://doi.org/10.3390/s22031247>

2021

Eman-Yaser Daraghmi, **Mamoun Abu Helou**, Yousef-Awwad Daraghmi, "A Blockchain-Based Editorial Management System", *Security and Communication Networks*, vol. 2021, Article ID 9927640, 17 pages, 2021. <https://doi.org/10.1155/2021/9927640>

2020

Abu Helou, M., Evaluating the Impact of Semantic Gaps on Estimating the Similarity using Arabic Wordnet", *Advances in Science, Technology and Engineering Systems Journal*, vol. 5, no. 5, pp. 1315-1328 (2020). DOI: [10.25046/aj0505158](https://doi.org/10.25046/aj0505158)

2019

Abu Helou, M., Effects of Semantic Gaps on Arabic WordNet-Based Similarity Measures. The 3rd International Conference on Innovative Computing, IEEE, Lahore, Pakistan (Nov, 2019) <https://ieeexplore.ieee.org/document/8966672>

2017

Abu Helou, M., Palmonari, M. Multi-user Feedback for Large-scale Cross-lingual Ontology Matching. The 9th International Conference on Knowledge Engineering and Ontology Development KEOD, Madeira, Portugal (2017)
<https://www.scitepress.org/Link.aspx?doi=10.5220/0006503200570066>

2016

Abu Helou, M., Palmonari, M., and Jarrar, M. Effectiveness of automatic translations for cross-lingual ontology mapping. *Journal of Artificial Intelligence Research*, Special Track on Cross-language Algorithms and Applications (2016).

2015

Abu Helou, M., and Palmonari, M. Cross-lingual lexical matching with word translation and local similarity optimization. In *Proceedings of the 10th International Conference on Semantic Systems, SEMANTiCS 2015*, Vienna, Austria (2015).

2015

Abu Helou, M., and Palmonari, M. Upper bound for cross-lingual concept mapping with external translation resources. In *20th Natural Language Processing and Information Systems (NLDB 2015)*, vol. 9103 of LNCS. Springer (2015)

2014

Abu Helou, M. Towards constructing linguistic ontologies: Mapping framework and preliminary experimental analysis. In *Proceedings of the Second Doctoral Workshop in Artificial Intelligence (DWAi 2014)* An official workshop of *the 13th Symposium of the Italian Association for Artificial Intelligence (AI*IA 2014)*, Pisa, Italy. (2014).

Abu Helou, M., Palmonari, M., Jarrar, M., and Fellbaum, C. Towards building linguistic ontology via cross-language matching. In *Proceedings of the 7th International Conference on Global WordNet*, in Tartu (Estonia. (2014).

2013

Abu Helou, M., Jarrar, M., Palmonari, M., Salhi, A., Hicks, A., Bortoli, S., Roche, C., Fellbaum, C., Bouquet, P., and Yahya, A. Arabization and multilingual knowledge sharing. In *SIERA Project 2.1 Deliverable* (2013).

2012

Abid A., Tagliasacchi, M., and **Abu Helou, M.** Probabilistic Reporting for Top-K Queries. In *Proc. of the 3rd Italian Information retrieval Workshop (IIR-2012)*, Bari Italy (2012).

2011

Abu Helou, M., Ontology Based Segmentation of Geo-Referenced Queries, *First International Workshop on Search, Exploration and Navigation of Web Data Sources*. ICWE, Cyprus. (2011).

Abu Helou, M., Segmentation of Geo-Referenced Queries. *19th Italian Symposium on Advance Database Systems – SEBD*, Maratea, Italy. (2011)

2010

Abu Helou, M. Abid, A. Semantic Measures Based on WordNet using Multiple Information Sources. 2nd Int. joint conference on Knowledge Discovery, knowledge Engineering, and Knowledge Management IC3K/KDIR 2010, Valencia

Honours and awards	<p>The Politecnico di Milano scholarship for MS.c degree.</p> <p>The Palestinian Ministry of Higher Education scholarship for BS.c Degree.</p> <p>Second place graduate, at Computer Engineering Dept. in BS.c degree.</p>
Memberships	<ul style="list-style-type: none"> - Italian Association for Artificial Intelligence (AI*IA). - Institute for systems and technologies of information control and communication (INSTICC)
Activities	<p>PC/Chairing</p> <ul style="list-style-type: none"> • (2023/24) 1st Intr. Conf. on Human Trafficking Via The Internet Reality And Challenges • (2021) Inter. Conf. on The impact of cybersecurity on national security • (ICIC2019) 3rd International Conference on Innovative Computing • (KEOD 2017) The 9th International Conference on Knowledge Engineering and Ontology Development • (7th GWC'14 Panel Discussion) Cross-language mapping semantics, at 7th Global Wordnet Conference. January 25, 2014. • (iArabic' 2014) the 3rd Palestinian Symposium on Computational Linguistics and Arabic Content . Birzeit University, Palestine. April 12, 2014 • (OnToContent 2013) the 9th International Workshop on Ontology Content Part of the OnTheMove Conferences & Workshops. Graz, Austria Sep 2013 • (iArabic' 2013) the 2nd Palestinian Symposium on Computational Linguistics and Arabic Content . Birzeit University, Palestine. April 20, 2013 <p>Sub/reviewer</p> <ul style="list-style-type: none"> • IEEE Access Journal. • MDPI Journals (Sensor, Applied Sciences, ...) • Arabian Journal for Science and Engineering. • (IDSTA 2020-2021) The Inter. Conference on Intelligent Data Science Technologies & Applications • (KEOD 2017 -2022) The International Conference on Knowledge Engineering and Ontology Development • (ICIW 2017- 2021) The International Conference on Internet and Web Applications and Services • (ISWC-PD 2015) The 14th International Semantic Web Conference. • (AIIA-DC 2014) The 13th Symposium of the Italian Association for Artificial Intelligence /Doctoral Consortium • (MTSR2014) The 8th Metadata and Semantics Research Conference. • (EKAW 2014) The 19th International Conference on Knowledge Engineering and Knowledge Management. • (SITIS 2013) The 10th International Conference on Signal Image Technology and Internet Based Systems. • (ISWC 2013) The 12th International Semantic Web Conference. • (WI 2013) The IEEE/WIC/ACM International Conference on Web Intelligence. • (COLING 2013) The 24th International Conference on Computational Linguistics.

Dec, 2024