

# HAMED ABDELHAQ

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Rafedia, Nablus, Palestine

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## PERSONAL INFORMATION

**Name:** Hamed “Moh’d Tayseer” Abdelhaq.

**Place/Date of Birth:** Kuwait/September 8, 1982.

**Nationality:** Jordanian.

**Marital Status:** Married.

## EDUCATION

**PhD in Computer Science**, Heidelberg University, Germany 2011 - 2016

Natural Language Processing, Machine Learning, Data Mining, and Spatio-temporal Data Analysis

THESIS - *Localized Events in Social Media Stream: Detection, Tracking, and Recommendation.*

magna cum laude (German scale)

**Master in Computer Science**, University of Jordan, Jordan

2005 - 2007

THESIS - *Performance Enhancement in Cache memory.*

GPA: 3.94/4.00

**Bachelor in Computer Science**, University of Jordan, Amman, Jordan

2001 - 2005

GPA: 3.98/4.00 (First-Class Honours)

**General Secondary Education**, King Talal Secondary school, Palestine.

2001

Average: 99.1/100 (ranked 1st in West Bank, Palestine)

## PROFESSIONAL EXPERIENCE

**Head of AI in healthcare unit.** An-Najah National University, Palestine. **Sept. 2024 – present**

- Exploring various opportunities of employing recent AI advancements in healthcare systems, in particular generative AI and LLMs.
- Establishing collaboration with various healthcare institutions.
- Delivering impactful research results that benefit both industry and academia.

**Coordinator of the MSc Program in AI for Healthcare Systems**

**Sept. 2023 – present**

- Coordinator and co-founder of the program
- Participation in developing and updating the study plan
- Investigating healthcare-related problems as case studies in Master’s theses.

**Director of Information Technology Department**

**Aug. 2022 – Sept. 2023**

- Align IT initiatives with the university’s academic, administrative, and research goals, ensuring technology supports teaching, learning, and institutional advancement.
- Ensure smooth operation of campus-wide systems related to student records, admissions, and academic services.
- Maintain and improve the digital tools, resources, and platforms used for teaching (e.g., Moodle), online exams, grading systems, and remote learning environments.

**Head of Computer Science Apprenticeship Department.**

**Aug. 2021 – Sept. 2022**

- co-founder of the program
- Participation in developing and updating the study plan

**Assistant Professor**, An-Najah National University, Palestine.

**Aug. 2016 – present**

- Teaching Fundamentals of Artificial Intelligence, Natural Language Processing, Big Data Engineering, Information Retrieval, Theory of Computation, Scientific Research, Operating Systems, Web Development, Compiler Design, and others.

–*Projects:*

- *Consultant in Geospatial Data management*: Supporting in selecting applicable SDI methods to Palestine, participating in the selection of metadata framework that most suitable for Palestine, participating in metadata development and the implementation of web services.
- *Analyzing Arabic content*: applying machine learning techniques to extract useful information from Arabic messages published via social media. Examples of such projects: (1) sentiment analysis of Arabic tweets and (2) Named-entity recognition from both formal and informal Arabic content <https://health-arabian.najah.edu/home>.
- *Vertex Reconstruction in HEP*: Applying machine learning to distinguish between pileup from genuine tracks, helping in obtaining more accurate estimation for z-location of primary interactions.
- *Smart Micro-mobility systems*: participation in workshops aimed at discussing main challenges facing the field of micro-mobility, such as fleet distribution, demand and revenue prediction.

**Senior Data Analyst**, moovel Group Mercedes-Benz, Stuttgart, Germany.

**Oct. 2015 – Dec. 2016**

moovel is a subsidiary of Mercedes-Benz/Daimler, providing smart mobile solutions to improve mobility and transportation.

–*Duties and Responsibilities:*

- employing machine learning techniques towards building intelligent systems.
- analyzing mobility data to uncover useful insights.

–*Projects:*

- *Personalized Place Recommendation*: Utilizing Historical logs towards building personalized place auto-complete functionality.
- *Mobility Point Ranking*: Public transport stations are ranked, providing an ordered list of mobility points to match users' preferences.

**Data Mining Consultant (Part-time)**, SocialDice Inc., Delaware, USA.

**Apr. 2015 – Nov. 2015**

SocialDice offers an end-to-end hiring solution with the ultimate goal of automating the hiring process.

–*Duties and Responsibilities:*

- proposing effective job-resume matching and ranking algorithms using NLP techniques.
- evaluating the performance of the proposed ranking algorithm.

**PhD Student and Research Assistant**, Heidelberg University, Germany.

**Oct. 2011 – Oct. 2015**

Research interests: data mining, machine learning, and Natural Language Processing, with a particular focus on analyzing the spatio-temporal aspects of messages published via social media sites.

–*Duties and Responsibilities:*

- designing and implementing tools for crawling, storing, and indexing messages from social media.
- designing a system towards the detection and tracking of localized events from social media.
- building a map-based demo for event visualization.
- writing scientific papers and participating in data mining conferences.

–*Projects:*

- *EvenTweet*: a 4-stage streaming system, digesting the content of social media to detect and track localized events.
- *Personalized Event Recommender System*: using matrix factorization combined with social, topical, and spatio-temporal features to provide personalized event recommendations.
- *TWIPA*: a Java GUI-based tool to access Twitter repositories, retrieve tweets based on spatio-temporal and text queries, and to store and index tweets in MongoDB.

**Lecturer**, An-Najah National University, Palestine.

**Sept. 2007 – Mar. 2011**

Lecturing courses on Advanced programming, Simulation, Web Development, Network Programming, Computer Algorithms, Introduction to Computer Science and others.

**ASP.NET Web Developer**, Maktoob Group (Yahoo), Amman, Jordan.

**June 2006 – Sept. 2007**

Maktoob Group provides e-commerce solutions that offer Arabic and English Web content through Maktoob.com. It is considered the region's largest Arabic Web portal. In 2009, Maktoob was acquired by Yahoo.

*–Duties and Responsibilities:*

- Building customizable Web user controls.
- Participating in project analysis, database design, and ERD building.
- Client-side programming using Javascript.
- Building general-purpose Windows Services for RSS feed retrieval.

**Software Developer**, Hybrid Solutions (HS), Jordan.

**July 2005 – Oct. 2005**

Hybrid Solutions is a software house providing FOREX Online Trading Platforms. Hybrid Solutions has adopted the latest technologies and standards to develop its Online Trading Platform, VertexFX.

*–Duties and Responsibilities:*

- Building components for VertexFX platform using Visual Basic.
- Oracle database manipulation.
- Client support.

## TECHNICAL SKILLS

**Languages:** JAVA, Python, C++, Visual Basic, Prolog, VB.NET, ASP.NET, nodejs

**DBMSs:** Microsoft SQL Server, Oracle, PostgreSQL, MySQL, MongoDB (NoSQL)

**Web Development:** Spring, ASP.NET, PHP, Codeigniter framework, JQuery, JavaScript, CSS

**Statistical packages:** R, Octave, Matlab

**Machine Learning and NLP:** Weka, Mallet, Stanford CoreNLP, Spark ML

**OpenStreetMap Editor:** JOSM (Java for OpenStreetMap)

**Big Data:** Apache Spark, Elasticsearch

**Visualization** Kibana, Gephi

**Tools:** Microsoft office Word/Excel, Anaconda, Jupyter Notebook, IntelliJ, Jira, Maven, Git, Bamboo, Latex

## PUBLICATIONS

M. Abubaker, Z. Alsadder, H. Abdelhaq, M. Boltes and A. Alia, "RPEE-Heads Benchmark: A Dataset and Empirical Comparison of Deep Learning Algorithms for Pedestrian Head Detection in Crowds," in IEEE Access, vol. 13, pp. 73451-73467, 2025, doi: 10.1109/ACCESS.2025.3563311.

M. A. Ateeq, S. Tiun, H. Abdelhaq and N. Rahhal, *Arabic Narrative Question Answering (QA) Using Transformer Models*, in IEEE Access, vol. 12, pp. 2760-2777, 2024

Fadi Mohsen, Hamed Abdelhaq, and Halil Bisgin, *Security-centric ranking algorithm and two privacy scores to mitigate intrusive apps*, In Concurrency and Computation: Practice and Experience, 2022

Mohammed Hudhud, Hamed Abdelhaq, and Fadi Mohsen, *ArabiaNer: a System to Extract Named Entities from Arabic Content*, In ICAART Conference on Natural Language Processing in Artificial Intelligence - NLPinAI, 2021

Ghaith Jardaneh, Hamed Abdelhaq, M. Buzz and D. Johnson, *Classifying Arabic Tweets Based on Credibility*

*Using Content and User Features*, In IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), Amman, Jordan, 2019

Fadi Mohsen, Hamed Abdelhaq, Halil Bisgin, Andrew Jolly and Michael Szczepanski, *Countering Intrusiveness Using New Security-Centric Ranking Algorithm Built on Top of Elasticsearch*, In International Conference On Trust, Security And Privacy In Computing And Communications/12th IEEE, 2018

Hamed Abdelhaq, Michael Gertz and Ayser Armiti, *Efficient Online Extraction of Keywords for Localized Events in Twitter*, In Geoinformatica, April 2016, Springer.

Hamed Abdelhaq, *Localized Events in Social Media Streams: Detection, Tracking, and Recommendation.*, PhD Thesis, Faculty of Mathematics and Computer Science, February 2016.

Hamed Abdelhaq and Michael Gertz, *On the Locality of Keywords in Twitter Streams*, 5th ACM SIGSPATIAL International Workshop on GeoStreaming (IWGS 2014), Dallas-Texas, 2014. **BEST PAPER AWARD**

Hamed Abdelhaq, Michael Gertz, and Christian Sengstock, *Spatio-temporal Characteristics of Bursty Words in Twitter Streams*, 21 ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Orlando-Florida, 2013.

Hamed Abdelhaq, Christian Sengstock and Michael Gertz, *EvenTweet: Online Localized Event Detection from Twitter*, 39th International Conference on Very Large Data Bases (VLDB), Trento-Italy, 2013. (demo paper)

Christian Sengstock, Michael Gertz, Florian Flatow and Hamed Abdelhaq, *A Probabilistic Model for Spatio-temporal Signal Extraction from Social Media*, 21 ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Orlando-Florida, 2013

Christian Sengstock, Michael Gertz, Hamed Abdelhaq and Florian Flatow, *Reliable Spatio-temporal Signal Extraction and Exploration from Human Activity Records*, 13th International Symposium on Spatial and Temporal Databases, SSTD 2013. Munich-Germany, 2013. (demo paper)

Sami Serhan and Hamed Abdelhaq, *Improving cache hit ratio in the presence of jump instruction*, Advancement of Modeling and Simulation Techniques in Enterprises (A.M.S.E.). Vol. 13. N 3-4, 2008

Sami Serhan and Hamed Abdelhaq, *Block-separated replacement algorithm(BSRA)*, Advancement of Modeling And Simulation Techniques in Enterprises (A.M.S.E.). Vol. 51, N 1-2, 2008.

Sami Serhan and Hamed Abdelhaq, *Improving Cache Memory Utilization*, International Journal of Applied Mathematics and Computer Sciences. VOL. 4 NO. 2 2007 ISSN 1305-5313.

## TRAINING COURSES

Successfully completed a Machine Language course provided by Stanford University through Coursera Inc, November 2013.

Successfully completed a Natural Language Processing course provided by Stanford University through Coursera Inc, December 2012.

A course in VB.NET as a part of Perfect Internet and Computer Program (PICP), University of Jordan, Amman, Jordan.

A course in Computer Maintenance as a part of Perfect Internet and Computer Program (PICP), University of Jordan, Amman, Jordan.

## HONORS

–Research Grant for Doctoral Candidates and Young Academics and Scientists (DAAD)

–Palestinian National Authority Scholarship for top-ranked students

## LANGUAGES

**Arabic:** Native

**English:** Professional Working Proficiency

**German:** Basic Communication Skills