

Hammam M. ALGhamdi, PhD.

Researcher | Innovator in
Computational Intelligence and Medical AI



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Saudi Arabia - Jeddah



Skills

Programming Languages

R · C# · MATLAB · Python

MySQL · HTML

Java · Perl

Frameworks & Libraries

PyTorch · TensorFlow · OpenCV ·
Scikit-learn · Pandas · NumPy ·
Matplotlib

Tools & Technologies

LaTeX · Git · Anaconda

Docker · Bash

Platforms & Environments

Jupyter Notebook · PyCharm

VS Code · Linux · Google Colab

Soft Skills

Leadership · Consultation · Training &
Development · Critical Thinking ·
Public Speaking & Presentation

Strategic Planning · Governance &
Compliance · Business Intelligence ·
Project Management



Languages

Arabic

English



Education

PhD in Computer Science *(with a particular focus on AI)*

Warwick University, Coventry, UK, | 2018 – 2023

Thesis: Context Shift in Histology Image Analysis Using Advanced AI Tools.

MSc in Computer Science *(with a particular focus on AI)*

Queen's University, Kingston, Canada | 2014 - 2016

Thesis: Automated AI-based Approaches for Reducing the Execution Time of Performance Tests.

BSc in Computer Science *(with a particular focus on AI)*

King Abdulaziz University, Jeddah | 2006 - 2010



Working Experience

Academic Positions

Assistant Professor, Department of Computer Science and Artificial Intelligence, University of Jeddah, Jeddah, KAS | 2024 - present

Courses and labs

- Deep Learning (CCAI 435)
- Machine Learning (CCAI 323)

Lecturer, Department of Computer Science and Artificial Intelligence, University of Jeddah, Jeddah, KAS | 2017 - 2023

Courses and labs

- Artificial Intelligence (CPCS 331)
- Operating Systems (CPIT 260)

Teaching Assistant, Department of Computer Science and Artificial Intelligence, King Abdulaziz University North Branch (then the University of Jeddah), Jeddah, KAS | 2011 – 2017

Labs:

- Computer Organization and Architecture (CPCS 214)
- Applied Math for Computing (CPCS 212)

Technical Position

IT Technician, King Abdulaziz University, Jeddah, KAS | 2010 – 2011

Main Duties:

- Formatting computers
- Solving networking issues
- Maintaining software and hardware problems



Honors & Awards

Gold Medal – ITEX 2025, Malaysia

International Invention, Innovation & Technology Exhibition (ITEX)
May 2025 | *SpatialPass*: An AI system enabling automated, queue-free crowd entry at major events, using BLE and advanced AI models.

Gold Medal – ITEX 2024, Malaysia

International Invention, Innovation & Technology Exhibition (ITEX)
May 2024 | *My Medical Reference*: An AI app that transcribes and summarizes doctor–patient interactions, during the medical clinics.

- **Top Recognition – Makkah Digital Research & Innovation Portal**
Government of Makkah Region, Saudi Arabia
November 2020 | A research project designing a drone-based AI platform for real-time Hajj crowd monitoring and analysis.
- **2nd Place – Lymph Node Detection Scientific Challenge (LYSTO)**
Medical Image Computing and Computer-Assisted Intervention Conference (MICCAI 2019)
October 2019 | Competing with scientists by developing an AI solution to detect and classify lymph node cells in histopathology images.

Leadership, Advisory, and Service Roles

- **Consultant | Governance & Compliance Department, University of Jeddah | 2025 – Present**
Role: Advise on institutional governance frameworks, regulatory alignment, and compliance initiatives within academic and administrative units.
- **Consultant & General Assembly Member | Synapse KSA | 2024 – Present**
Nonprofit AI community-based organization supervised by SDAIA
Role: Advise on strategy and lead engagement for national AI education and innovation initiatives.
- **Co-founder & General Assembly Member | MSAR | 2024 – Present**
Nonprofit career development organization, Saudi Arabia
Role: Advise on AI-focused career guidance, training programs, and strategic initiatives aimed at enhancing AI talent development across sectors.
- **Consultant | Maraya AlShabab | 2024 – Present**
A youth-focused nonprofit platform supporting career development and skills exploration.
Role: Provided (and continue to provide) over 30 one-on-one career consultations focused on guidance in AI specializations and career pathways.
- **Chair | Student Project Committee, CCSE, University of Jeddah | 2024 – Present**
Role: Lead and oversee the final-year student projects across all undergraduate computing programs, ensuring alignment with academic standards and external innovation opportunities.
- **Former Head | Training Unit, CCSE, University of Jeddah | 2023– 2024**
Role: Directed training initiatives and partnerships, designed skill-development programs, and facilitated internship pathways for computing students.

Invited Talks & Workshops

- **Integrating IoT and Data Intelligence in Operating a Smart University Campus | May 2025**
Target audience: University faculty, technical staff, and students interested in the application of Internet of Things and data analytics to smart campus operations.
Participant details: Delegates from academic institutions in KSA and Oman, including 80–100 participants invited by the Ministry.
Invited by: Ministry of Higher Education, Scientific Research and Innovation of the Sultanate of Oman (MoHERI), held in Muscat, Oman.
- **Surgery in the Robotic Future: AI in Surgery | May 2025**
Target audience: Healthcare professionals, medical researchers, and students exploring AI-driven innovations in surgical practice.
Participant details: Close to 100 attendees including medical students, healthcare practitioners, and academic researchers, with a shared focus on integrating AI innovations into surgical practice.
Invited by: Synapse KSA (a non-profit tech organization supervised by SDAIA) in partnership with Jeddah Surgical Bootcamp Conference (JSBC), held in Jeddah.
- **Managing Health Data Using Artificial Intelligence | Feb 2024**
Target audience: Tech and health-tech enthusiasts, developers, and data professionals exploring the use of AI in healthcare data management.
Participant details: Delivered as part of the TechMeetup4 Hackathon, with diverse participation from developers and AI and medical practitioners across Saudi Arabia.
Invited by: Google Developer Community Saudi Arabia (GDG Saudi) in partnership with University of Jeddah, held in Jeddah.

- Road-map of Proper Communication with Potential PhD Supervisors | Sept 2023**
Target audience: Aspiring postgraduate students looking to pursue education abroad.
Participant details: Limited to 15 students, each receiving two dedicated sessions for hands-on guidance during their preparation.
Invited by: Hasoubiat community club, conducted virtually via Zoom.
- Integrating Generative AI in Research | June 2023**
Target audience: Postgraduate students keen on leveraging generative AI tools, such as ChatGPT, in their research.
Participant details: Engaged approximately 25 Master and PhD students from the University of Warwick.
Invited by: Warwick's Saudi scientific society, hosted at the University of Warwick.
- AI-Driven Future of Entrepreneurship | June 2022**
Target audience: Enthusiastic students aiming to integrate AI into their entrepreneurial ventures.
Participant details : Witnessed attendance from around 85 individuals, predominantly Bachelor's students and faculty members
Invited by: Entrepreneurship Society at Umm Al-Qura University hosted at Wadi Makkah.
- Insights from Makkah Gate's Switch and Innovation Winners | April 2021**
Target audience: Saudi students in the UK sponsored by UKSACB.
Participant details: Approximately 175 attendees, primarily postgraduate students with a handful of undergraduates.
Invited by: The Saudi Cultural Bureau (UKSACB) in London, conducted virtually via Zoom.
- Exploring Scientific Publication and Participation | Jan 2021**
Target audience: Saudi students in the UK under UKSACB sponsorship.
Participant details: About 135 attendees, mostly postgraduates, with a mix of undergraduates.
Invited by: Marifa Platform for Courses and Workshops, supervised by UKSACB, held virtually via Zoom.
- The Evolution of AI in Media: Current and Future Perspectives | Jan 2020**
Target audience: Students specializing in Media and Communication, eager to grasp AI's ongoing and forthcoming impact on the media landscape.
Participant Details: Session had around 170 attendees, mostly students and some faculty members.
Invited by: King Saud's Media Collage, offered virtually for King Saud University students. by
- Tech-Savvy Parenting: Understanding and Mitigating Digital Risks for Children | Jan 2019**
Target audience: Postgraduate students, especially parents, keen on understanding the digital threats their children face and how to safeguard against them.
Participant details: The discussion attracted around 85 attendees, highlighting the relevance and urgency of the topic.
Invited by: Sheffield's Saudi student club, conducted virtually via Zoom.



Ongoing Grants, Research & Collaborations

- A Memory-Driven AI for Advanced Gigapixel Whole-Slide Image Interpretation and Cancer Heterogeneity in Precision Oncology**
Funded by the Saudi Basic Science Research Consortium Grant (BSRCG), RDI Authority – Saudi Minds
Role: Co-Investigator | Duration: 2024–2028 | Partner Institutions: Prince Sattam Bin Abdulaziz University & University of Jeddah

 - A 4-year collaborative project to develop TITAN, a memory-driven AI framework that enables hierarchical, multimodal analysis of gigapixel pathology images, genomic profiles, and clinical data to improve early cancer diagnosis and personalized treatment planning.
- Developing Adaptive Federated Learning Frameworks for Heterogeneous and Dynamic Electronic Health Records**
Funded by the UK–Saudi Challenge Fund 2023–24
Role: Co-Investigator (Saudi Lead) | Duration: 2024 - 2025 | Partner Institutions: University of Warwick & University of Jeddah

 - Selected for funding after competitive assessment. This project aims to design adaptive federated learning architectures for privacy-preserving analysis of distributed electronic health records across institutions in the UK and Saudi Arabia.

Utilizing Deep Learning Techniques for the Automated Diagnosis of Retinopathy of Prematurity (ROP)

Collaboration with King Khaled Eye Specialist Hospital (KKESH)

Role: AI Consultant and Investigator | Duration: 2023–2025

- A retrospective study aimed at developing and validating AI models for diagnosing ROP from fundus images using deep learning. The project leverages a large, Saudi-based multi-center dataset of over 29,000 retinal images and seeks to provide scalable, cost-effective, and non-invasive screening tools tailored to clinical needs in low-resource settings.



Publication

Towards Privacy-Preserving Big Data Analysis with Decentralized Learning for ROP Imaging.

In Proceedings of the IEEE International Conference on Artificial Intelligence and Internet of Things (AIIT 2025), held in Jeddah, KSA | May 2025

An Aggregation of Aggregation Methods in Computational Pathology

Medical Image Analysis, Volume 88, ISSN 1361-8415 | Aug 2023

Towards Pan-cancer Histology Image Classification with Knowledge Distillation

In Proceedings of the 19th European Congress on Digital Pathology (ECDP), held in Budapest (Hungary) | June 2023

A Novel Cell Map Representation for Weakly Supervised Prediction of ER&PR Status from H&E WSIs

In Proceedings of the COMPAY Workshop of the International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), held in Vancouver, Canada (virtually) | Sept 2021

Towards Reducing the Time Needed for Load Testing

Journal of Software: Evolution and Process, Volume 35, issue 3, ISSN 2047-7473 | July 2020

A Hybrid Pipeline to Assess ER-Stained Nuclei in Invasive Breast Cancer

In Proceedings of the COMPAY Workshop of the International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), held in Shenzhen, China | Oct 2019

An Automated Approach for Recommending When to Stop Load Tests

In Proceedings of the IEEE International Conference on Software Maintenance and Evolution (ICSME), held in Raleigh, NC, USA | Oct 2016



Professional Development

CREATE Program Workshops

Academia & Beyond: Knowledge Transfer Development:

- Avoiding Plagiarism Tips on Good Citation Practices - Kingston, Canada | 2014
- Dealing with Perfectionism in Writing - Kingston, Canada | 2014
- How to Research Patent Information - Kingston, Canada | 2014
- Poster Boards - Tips Tricks - Kingston, Canada | 2014
- Revising Academic Writing and eliciting feedback - Kingston, Canada | 2014

Communication & Interpersonal Development:

- 3 Minute Thesis Presentation - Kingston, Canada | 2014
- Managing Presentation Anxiety - Kingston, Canada | 2014
- Presentation Skills for Graduate Students - Kingston, Canada | 2014

Career Development:

- Networking Skills (Mitacs) - Kingston, Canada | 2014
- How to find a Post Doctoral Position - Kingston, Canada | 2014
- Career Professionalism (Mitacs) - Kingston, Canada | 2014

Management & Leadership Development:

- Personality Theory and Communication - Kingston, Canada | 2014

Ethics, Society & Civic Responsibilities:

- Mental Health: Living in the Present Moment - Kingston, Canada | 2014

Extra Workshops in Leadership and Personal Skills

- Life Management Courses - Jeddah, KAS | 2009 - 2010
- Successful Speech Skills - Jeddah, KAS | 2009 - 2010
- Basics in Graphology - Jeddah, KAS | 2010
- Building Educational Values in Communities - Jeddah, KAS | 2009
- Teamwork Building - Jeddah, KAS | 2009
- Self-Confidence Building - Jeddah, KAS | 2008
- Building Personal Mission and Vision - Jeddah, KAS | 2008
- Time Management Skills - Jeddah, KAS | 2007
- Developing Effective Communication Skills - Jeddah, KAS | 2006
- Kurt Halsey's "Always Thinking" - Jeddah, KAS | 2005
- Listening Skills - Jeddah, KAS | 2003

Volunteer Activities

- Founding-head of Hasoubiat Society for CS PG Saudi students - Coventry, UK | 2021 - present
- Founding-head of the Warwick's Saudi Scientific Society - Coventry, UK | 2021 - 2023
- Leading the scientific group in Coventry's Saudi student club - Coventry, UK | 2019 - 2020
- President of the Sulaymaniyah community club - Jeddah, KAS | 2017 - 2018
- Member of scientific group in Toronto's Saudi student club - Toronto, Canada | 2013 - 2014
- Leading group in Saudi Festival Day - Calgary, Canada | 2012 - 2013
- Involved in managing activities for Jeddah's Community Club - Jeddah, KAS | 2006 - 2010
- Participated in organizing Scout programs and activities - Jeddah, KAS | 2005 - 2006
- Was part of organizing Al-Rowwad conference - Jeddah, KAS | 2004 - 2005