MANAL HUSSEIN ALASSAF, Ph.D.

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ABOUT

- Visionary AI Leader Driving Data, AI, and Digital Transformation in any organization.
- Proven track record in leading and delivering Generative AI products using cutting edge research and technologies.
- Delivered AI-driven transformation for national-scale initiatives aligned with Vision 2030.
- Expertise in leveraging AI for Business through Data Strategy and Governance.
- Expertise in harnessing the power of AI and changing how business is done.
- Expertise in leading Development and Engineering teams including but not limited to: defining vision and strategies, tools, knowledge, resource managements, project prioritization, planning, hiring, contracting, and mentoring.
- Expertise in transforming organizations digitally into Agile Framework via defining work-processes and workflows.
- Expertise in Risk Management and Data Driven Decision Making.
- Expertise in driving a problem from an idea into a product through investigation, technical-spec planning, developing, deploying, releasing, supporting product release, and acting upon customer feedback.
- Delivered features under the umbrellas of Growth Mindset and Customer Obsession.
- Former research expertise: Machine Learning, Computer Vision and Graphics techniques in solving real world problems including 3D Medical Imaging, Human Computer Interaction, and Natural Language Processing applications.

AI LEADERSHIP HIGHLIGHTS

- Led the delivery of 10+ advanced AI-powered features in Microsoft Power BI, contributing to a platform that serves more than 100 million monthly active users (MAU) globally.
- Founded and led regional GenAI R&D hub at Worley, pioneering AI adoption in energy.
- Directed 70+ engineers at SDAIA (NCAI) to deploy national AI models aligned with Vision 2030.
- Advisory board member at FIKRA.AI, shaping AI venture strategy across MENA, and many others global AI Startups focusing on: Agentic AI, Data Lakes, Data Preparation for AI, Industrial AI & BI, and LLM Evaluation.

EXPERIENCE

2024-current ***Worley, Regional office Saudi Arabia, Bahrain, and Egypt***
Regional Executive Group Director of Information & Digital Delivery

- Establishing regional office for cutting-edge-technologies (AI, VR, Digital Twin including Nvidia OmniVerse and others, Robotics, Drones, etc.) in the energy sector.
- Initiating regional R&D department for Gen- AI research and development to early penetrate this market and secure a share of revenue for Worley in this landscape.
- Participating in transforming Worley engineering projects for big energy players in the region (e.g. Aramco, Sabic, Ma'adn) into data centric with digital delivery.
- Partnering with region main energy entities (namely Aramco, Ma'adn, Water and electric) to advance the Data and AI within the sector to meet Saudi Vision 2030.
- Leading the digital transformation of all internal project activities and processes by leveraging cutting-edge technologies including Business Intelligence (BI), Artificial Intelligence (AI), and automation.
- Overseeing the location Information Technology (IT) function, with full accountability for strategy, operations, and performance.

2024-current ***National Committee of IT & Communication, Federation of Saudi Chambers of Commerce, Saudi Arabia***
Executive Committee member
- Bridging the gap between private sector and government entities by solving challenges which facing the private sector in the field of IT & Communication.
- Leading the Entrepreneurship-focus team within the committee.

2025-current ***FIKRA.AI Ventures, UAE and Saudi Arabia***
Advisory Board member
- Fikra is the leading AI Venture Builder, transforming industries and tackling global challenges from MENA.

2022-2023 ***National Center of Artificial Intelligence (NCAI) - Saudi Authority for Data and Artificial Intelligence (SDAIA)***
Director of Engineering and Development, AI Consultant
- Leading 70+ AI and Data Engineers in enabling SOTA AI models and algorithms in the ecosystem, empowering them with tools, knowledge and freedom to innovate and make an impact.
- Leading scaling up and deploying AI models and algorithms within the existing ecosystem.
- Managing production and cloud deployment of AI models and algorithms from ideas to products.
- Participating in transforming the strategy of SDAIA (aligned with Vision 2030) into reality.

2015-2022 ***Microsoft Headquarter, Greater Seattle Area, USA***
Senior Software Engineer – Technical Lead
- Power BI: participate in delivering a leader in the market cloud-based business intelligence platform that brings data, insights and AI to millions of users and businesses around the world and empower them in making data driven decisions.
- Tech Lead for [Data Shape Engine (DSE)](#), the brain of operations in Power BI in the back-end. In this role, I led the team towards delivering reliable software pipeline and infrastructure to understand user requests. Owned, derived and delivered [20+ major feature in Power BI](#).

2014 ***Microsoft Headquarter, Greater Seattle Area, USA***
Software Engineer Intern
- Worked on Power BI Q&A, a natural language business intelligence application under Microsoft Azure Cloud Computing Platform & Services, to implement new AI features in the back-end engine related to Natural Languages Processing.

2013 ***Microsoft Headquarter, Greater Seattle Area, USA***
Software Engineer Intern
- Worked on Power BI Q&A, a natural language business intelligence application under SQL BI, scaling the system to deal with various languages in both the front-end and back-end engines related to Natural Languages Processing.

2015-2023 ***Taif University, Taif, KSA***
Assistant Professor, Department of Computer Science, College of Computers and Information Technology.

2007 ***Taif University, Taif, KSA***
Programmer & Developer
- Automated classroom assignments based on capacity, Taif University campus
- Designed, programmed and implemented a database system with GUI software for campus classroom assignments, which carried out all Room Assignment Policies.

2004-2007 ***Taif University, Taif, KSA***
Lecturer & Teaching Assistant

- Technical Analyst and Programmer, designing a programming language with Compiler for robotics
- Instructed 4 classes per semester with 30+ students in subjects matters including: Computer Networks, Programming Languages, Object-Oriented Programming, Database Management Systems, Expert Systems, Neural Networks, Computer Graphics.

2002–2007 *Computers for Arabs Website [deprecated]*

Co-Founder & Programmer
- Co-founded a website to share knowledge and online learnings for Computer Science related topics in Arabic Language.
- Programmed several website projects, i.e. the internal search engine.
- Provided consulting services regarding website advertisements
- Developed & built the first Arabic web-based training center that teaches computer science subjects.
- Developed & built, with a team, the first English/Arabic web-based dictionary of computer and technological terms.
- Translated, with definition & explanation, 1000+ technical terms from English to Arabic.

EDUCATION (*sorted by graduation date*)

March 2024- May 2024 *MIT, USA*
- Applied Generative AI for Digital Transformation Certificate, MIT Professional Education

February 2022- March 2022 *MIT, USA*
- Data Strategy: Leverage AI for Business Graduate Certificate, MIT School of Architecture and Planning

2010- 2015 *The George Washington University, USA*
- Ph.D., Computer Science, School of Engineering and Applied Science, GPA: 3.97
- Institute of Biomedical Engineering
- Institute of Computer Graphics

2010-2013 *The George Washington University, USA*
- Computer Security and Information Assurance Graduate Certificate, GPA: 4.0

2008-2010 *The George Washington University, USA*
- M.S., Computer Science, School of Engineering and Applied Science, GPA: 4.0

2008 *Georgetown University, USA*
- English as a Foreign Language (EFL) Program

2001–2004 *Taif University, KSA*
- B.S., Computer Science, GPA: 3.73
- Academic honor list

INTELLECTUAL PROPERTY

- Patent Application:
  - Microsoft# 359792.02: "Ranking Contextual Metadata to Generate Relevant Data Insights", U.S. Patent No. 10,650,007. 12 May 2020. [link]
  - U.S. Patent Provisional Application No. 62/120,544, "Automatic Parcellation of Longitudinal Cortical Surfaces", U.S. Patent and Trademark Office. Filed on February 25, 2015
- Copyright Application:
  - Title of the Work "Developing Brain Automatic Parcellation", US. Copyright Case Number: 1-2459198121, Case Date: June 10, 2015, Library of Congress.

AWARDS

- 2024: LEWAS - Leadership Excellence for Women Awards & Symposium: finalist for LEWAS "Leading with Excellence" Award.

- 2022: SDAIA H.E. Service Award: SauTec Project in AI Summit.
- 2020: Microsoft Service Award- Five Years Milestone by Satya Nadella CEO of Microsoft.
- 2016: Microsoft Power BI 2016 Hackathon: Best Business Value Award winner for Hackathon Project "Contextual Social Insights"
- 2015: The Best Paper Award: Manal H. Alassaf, Kamran Kowsari, and James K. Hahn. Automatic, Real Time, Unsupervised Spatio-temporal 3D Object Detection Using RGB-D Cameras. In *Information Visualization (iV),* 2015, 19th International Conference, pp. 444-449. IEEE, 2015. DOI:10.1109/iV.2015.80
- 2012: Third place (tie) in George Washington's SEAS R&D day.
- 2006: Mawhiba Prize awarded by King Abdul-Aziz and his *Companions Foundation for The Gifted*, for designing a special purpose language with its compiler for robotics. This is the only governmental foundation in the Middle East that awards such prizes for scientific achievement.
- 2002: First and third place awards in the Taif University Fine Art Competition for Oil Painting.

SHIPPED SOFTWARE PRODUCTS

- Allam.ai: Generative AI model based on Large Language Models (LLM) trained on Arabic Language and served as chat app similar to ChatGPT. In this project, I built the team, chose the technologies and AI algorithms, and led development, scalability, and deployment to deliver the system as mobile app (iOS and Android) as well as cloud service.
- SauTec.ai: an AI model as a service on the cloud that transcribe audio signal into text trained on Arabic language variant of dialects. In this project, I led the deployment and the architecture to deliver the cloud service for multiple clients including government agencies.
- Microsoft Power BI: a cloud-based business analytics solution that allows to visualize data and share insights across an organization, to embed data in an app or a website, and to connect to hundreds of data sources and bring data to life with live dashboards and reports. In this project, I led the Data Shape Engine (brain of operation) of Power BI, the world leading data analytics and BI solutions by Gartner reviews for 10+ years.
- Microsoft Power BI Desktop: a report authoring tool that allows to create rich and interactive reports with visual analytics.

Power BI Shipped Features Main Contribution:
(Owner and Main Contributor features only, sorted by release date)
1. Sparklines
2. Quickly create reports in the Power BI service
3. Power BI Desktop diagnostics information collection feature
4. Smart Narrative visual
5. Small Multiples visual
6. Decomposition tree visual
7. Key Influencers visual
8. Key Influencers visual supports continuous analysis for numeric targets
9. Q&A for report creation
10. Q&A in Power BI Desktop
11. Live connect support for Q&A
12. Q&A support for RLS

13. [Distribution factor insights](link)
14. [Bin by count](link)
15. [Clustering](link)
16. [Forecasting](link)
17. [High density line sampling](link)
18. [Generate data insights automatically with Power BI](link)
19. [Smarter Auto-Generated Insights with Complex Filters](link)
20. [Insights in Power BI Desktop](link)

PUBLICATIONS

Published:

1. Manal H. Alassaf (2015). Automatic Parcellation of Longitudinal Cortical Surfaces. The George Washington University, ProQuest, UMI Dissertations Publishing. 3687479. [link]
2. Manal H. Alassaf, James K. Hahn (2015). Automatic Parcellation of Longitudinal Cortical Surfaces, SPIE Medical Imaging. DOI:10.1117/12.2081739 [link]
   a. Novel method to parcellate the developing brain cortical surfaces in different weeks of gestation.
   b. Applicable to neonatal and fetal developing brain.
   c. Defining a new mapping space between the cortical surfaces to longitudinally propagate the labels across them.
3. Manal H. Alassaf, Kamran Kowsari, and James K. Hahn. Automatic, Real Time, Unsupervised Spatio-temporal 3D Object Detection Using RGB-D Cameras. *In Information Visualisation (iV), 2015, 19th International Conference, pp. 444-449. IEEE, 2015.* DOI:10.1109/iV.2015.80 [link] (***Received Best Paper Award***)
4. Manal H. Alassaf, Yeny Yim and James K. Hahn (2014). Non-rigid Surface Registration using Cover Tree based Clustering and Nearest Neighbor Search. In Proceedings of the 9th International Conference on Computer Vision Theory and Applications, pages 579-587. DOI: 10.5220/0004738405790587 [link] [[pdf](pdf)]
   a. Speeding up the candidate points search time by applying clustering and nearest neighbor techniques.
   b. Optimizing Non-rigid ICP algorithm time and accuracy measures.
   c. Reducing ICP algorithm processing time from exponential to linear.
5. Manal, H. A., Wei, L., Arjun, S. J., & Khan, J. K. (2014). Computer-Based Planning System for Mandibular Reconstruction. *Medicine Meets Virtual Reality 21: NextMed/MMVR21*, *196*, *6*. [link]
   a. Applied dynamic programming and greedy techniques to optimize the surgery parameters
   b. Provides more accurate pre-operative planning.
6. Kamran Kowsari, Manal H. Alassaf. (2016). Weighted Unsupervised Learning for 3D Object Detection, *International Journal of Advanced Computer Science and Applications Vol. 7 No. 1*. [link]

Posters:

7. 2012: Distance Normal Cover Tree for Nearest Neighbor. In *Women in Machine Learning (WiML),* 2012.
8. 2013: Interactive 3D Human Body Deformable Segmentation using Kinect Camera. In *Women in Machine Learning (WiML),* 2013.

Submitted:

1. Manal H. Alassaf and Aljawharah H. Alassaf, The Terminological Challenge Behind Patenting Artificial Intelligence.

LEADERSHIP

- 2025-present: Advisory board member FIKRA.AI Ventures (UAE, KSA).

- 2025-present: External Advisory Board member for Information Technology (IT) Department at King Saud University (KSU).
- 2024-present: Executive Senior Director of Digital Delivery at Worley (KSA, Bahrain, Egypt).
- 2024-present: Executive Committee member and Leader of Entrepreneurship-focus team of the National Committee of IT & Communication.
- 2023-present: Postgraduate Advisory Board member of the Software Engineering (SWE) Department at King Saud University (KSA).
- 2022-2023: Director of Engineering and Development at the National Center of Artificial Intelligence (NCAI-SDAIA, KSA).
- 2021-2022: Technical Lead for Data Shape Engine in Microsoft Power BI (USA).
- 2002-2007: President of Training Courses Center in Computers for Arab website (Online).
- 2004-2008: President of Dictionary Center in Computers for Arab website (Online).
- 2007: Pioneered a voluntary work in designing and teaching courses for special needs students, on how to use PC and professional computer software at Taif University (KSA).

THOUGHT LEADERSHIP & INVITED TALKS

- AI's opportunities and challenges within the Kingdom Panel Discussion. The extended meeting for CIT sector, May 1st, 2025
- IEEE 4th International Conference on Computing and Information Technology at the University of Tabuk: Keynote Speaker: Saudi Arabia's journey in artificial intelligence from ambition to reality. April 13th, 2025
- AI Transforming Systems Symposium Panel: AI for a Sustainable Future, 6th February, 2025
- AI Transforming Systems Symposium Keynote speech: AI from Ambition to Reality, 5th February, 2025
- LEWAS 2024 Panel: Leadership Insights: Who's Really Transforming in your Digital Transformation? 27th November, 2024
- EVANTA Townhall Speaker: Enhance Endpoint Visibility & Digital Experience for Fastr Decision-Making, 30th October, 2024
- The 5th Women in Data Science (WiDS) Conference at KFUPM, Keynote Speaker: From Idea to Product, 2nd May, 2024
- LEAP Conference 2024: Women in Tech: Who is asking the Right Questions Panel Moderator, February 2024.
- EY & Women in Data Science (WiDS), Special Speaker: Gen AI and Future, 10th March, 2023
- TEC WOMEN, Special Speaker: Women in Tec, 7th March, 2023.
- SSDS: Saudi Society for Data Science, Speaker: Generative AI and Entrepreneurship, 21st June, 2023
- King Saud University Hackathon, Judge: 20th May, 2023.
- SauTech Hackathon, Speaker and Judge: 15th February, 2024.
- South Korea Data and AI Official visit, SDAIA Representative and speaker, February 2023.

MEDIA

- "The extended meeting for CIT sector", Federation of Chamber of Commerce video, 2025
- "IKTVA", Worley at Aramco IKTVA Forum & Exhibition Sponsor Video, 2025
- "Alarabia News أخبار العربية", Alarabia: Global AI Summit, 2022
- "Ya Hala يا هلا", Rotana Khaligia: Women in AI and Saudi Arabia, 2022
- "From Saudi من السعودية", Saudi TV: Data and AI technical roles and market demands, 2022

CERTIFICATES

- NVIDIA: Building Transformer-Based Natural Language Processing Applications (April 2024)
- Microsoft Standards of Business Conduct (Yearly training from 2015 to 2022)

- Microsoft Responsible AI (Yearly training 2020 to 2022)
- Microsoft Security Training (Yearly training from 2015 to 2022)
- Microsoft Privacy Training (Yearly training from 2015 to 2022)
- Microsoft Certified (2124): Programming with C#
- Microsoft Certified (2389): Programming with Microsoft ADO.NET
- MITRE Corporation: Benchmark Development Course
- Cairosoft Certified: Hardware Maintenance
- Cairosoft Certified: Software Maintenance
- INLPTA Certified: Diploma in the Art and Science of Neuro Linguistic Programming (NLP).