

# MOHAMED MOHANA

Head of Research, Innovation & Digital Sustainability

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## SUMMARY

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Head of Research, Innovation & Digital Sustainability and senior AI engineering leader. Combine executive ownership of innovation strategy, R&D governance, and digital transformation with hands-on delivery of production AI systems (LLMs, RAG, Agents, NLP, Computer Vision). Track record of taking systems from concept to production at institutional scale, with measurable impact through top-3 national benchmark rankings, governance alignment, and cross-functional delivery from strategy to deployment.

## EXPERIENCE

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### Head of Research, Innovation & Digital Sustainability

*Oct 2022 – Present*

*Senior Artificial Intelligence Engineer*

Deanship of E-Services, King Khalid University

*Abha, Saudi Arabia*

- Lead the Research, Innovation & Digital Sustainability portfolio; own AI engineering delivery, governance, and emerging-technology adoption across university services.
- Architect and ship production AI systems (LLMs, RAG, Agents, NLP, Computer Vision) serving university-wide users; drive solutions from PoC to production with measurable impact on operations, beneficiary experience, and IT responsiveness.
- Govern the R&D roadmap and execution; align cross-functional teams (engineering, data, product, governance) on quarterly delivery commitments.
- Digital Transformation Index (Research & Innovation perspective lead): 2024 ranked **1st/32** in the Education & Training Sector and **9th/226** government entities (maturity 89.82% → 93.66%); 2025 ranked **3rd/240** entities (93.66% → 94.23%).
- Website & Digital Content Efficiency Index: improved national ranking from **9th/250** (2024, inaugural year) → **3rd/250** (2025), with top-tier scores across all evaluation perspectives.
- Emerging Technologies Adoption Readiness: contributed to evidence collection, assessment coordination, and the cross-unit implementation roadmap; score improved from **73% (Competent)** in 2025 → **80.60% (Advanced)** in 2026.
- Contributed to the Deanship of E-Services' **Bronze Award for Best in Innovation at SaudiCXA 2025** through leadership of digital transformation initiatives.

### Artificial Intelligence Research Engineer

*Jul 2019 – Sep 2023*

Center for Artificial Intelligence, King Khalid University

*Abha, Saudi Arabia*

- Designed, built, and deployed AI applications across Computer Vision, NLP, and time-series forecasting; translated research prototypes into production-grade services for institutional use.
- Authored peer-reviewed publications in AI/CV/NLP venues; bridged applied research with real-world deployment.

### Teaching Assistant

*Oct 2018 – Jun 2019*

Universiti Teknologi Malaysia

*Johor Bahru, Malaysia*

- Co-supervised Master's-level AI projects, supporting methodology design, experimentation, and thesis preparation.

### Engineering Supervisor (Internship)

*Aug 2017 – Jan 2018*

Coca-Cola

*Abha, Saudi Arabia*

- Supported plant engineering operations, reporting, and preventive maintenance.
- Assisted troubleshooting and operational coordination to maintain production continuity and safety compliance.

## EDUCATION

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- **MEng in Mechatronics, Robotics, and Automation (AI-focused)** *Jan 2018 – Apr 2019*  
Universiti Teknologi Malaysia (UTM), GPA: 3.9/4.0
- **BEng in Mechatronics, Robotics, and Automation** *Sep 2014 – Jan 2018*  
Universiti Teknologi Malaysia (UTM), GPA: 3.6/4.0

## SKILLS

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- **Programming & Tooling:** Python, SQL, Bash, Git, Docker, Linux
- **AI/ML Engineering:** PyTorch, TensorFlow, scikit-learn, Hugging Face, model evaluation, experiment tracking, MLOps/deployment
- **LLMs & Generative AI:** Transformers, RAG, agentic systems, vLLM, prompt engineering, fine-tuning, Arabic dialect handling, Model Context Protocol (MCP)
- **Computer Vision:** Detection, classification, tracking, OCR pipelines (YOLO, Faster R-CNN)
- **Data & Retrieval:** Vector databases (ChromaDB), semantic search, embeddings, ETL
- **Backend & Infrastructure:** FastAPI, REST APIs, LangChain, OpenAI APIs, cloud computing, automation/RPA, system integration
- **AI-Assisted Engineering:** Agentic coding workflows with Claude Code, Codex, and OpenCode for rapid prototyping, refactoring, debugging, and code review
- **Leadership:** Cross-functional team leadership, R&D management, strategic planning, stakeholder engagement
- **Research:** Statistics, research methodologies, peer-reviewed technical writing

## SELECTED PROJECTS

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- **Sanad Academic Advisor** — Agentic AI advising platform for KKU students (FastAPI, LangChain, OpenAI APIs, ChromaDB RAG). Designed intent routing, contextual retrieval, multi-step academic flow analysis, session memory, proactive conversation evaluation, and escalation/follow-up workflows. Arabic/English chat & voice (ASR/TTS) for schedules, grades, GPA, absences, exams, transcripts, study plans, rewards, offers, and academic transactions, with caching, analytics, notifications, and faculty follow-up management.
- **StudySnap Platform** — AI-powered personalized learning platform built with FastAPI, LangChain, vLLM, and OpenAI APIs. RAG over ChromaDB for document ingestion, semantic search, and context-aware responses across PDF, video, text, and audio. Generates flashcards, quizzes, and study guides with TTS/STT.
- **KHALID AI Chatbot** — Finalist in the 2024 Eye on Innovation Awards for Education (Higher Ed: Innovation in Administrative Systems), **ranked top 10** globally.
- **Multilingual Portal & Routing** — AI-driven web portal translation and language-aware chatbot routing across English, Arabic, French, Spanish, and Chinese.
- **Saudi-Dialect Voice Robot** — Robot integrated with GPT APIs for Saudi-dialect voice-to-text and text-to-voice interactions.
- **Fateen Policy Platform** — OCR + NLP system assessing employee policy comprehension with governance-based enforcement workflows.
- **Reference Auditing Platform** — OCR + AI-based text analysis to detect prohibited references and improve academic compliance.
- **FlexLearn** — Recommendation system delivering personalized, asynchronous learning paths aligned with user profiles and interests.
- **Computer Vision Systems** — Road-defect detection (Saudi Arabia), face-mask detection (YOLOv5), drone-based campus surveillance, entry/exit counting with mood/age detection, breast-cancer and brain-abnormality detection, GAN-based culturally inspired carpet design.

- **Forecasting & Time Series** — LSTM-based COVID-19 trend prediction; PV smart-system residual load forecasting in Abha.
- **Other** — Blockchain certificate validation (Django) with multi-server hash generation; Llama 2 interactive slide summarizer for student revision; LEAP 2024 representation on emerging technologies in government.

## HONOURS AND AWARDS

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- **Most Innovative Technology Leader of the Year (Silver Stevie® Award)** *2026*  
Middle East & North Africa Stevie Awards — recognized for excellence in driving digital sustainability and high-impact AI applications.
- **AI Sandbox Recognition** *2025*  
National Center for e-Learning
- **1st Place Winner — EduThon V2** *2023*  
King Khalid University
- **Digital Innovation Award in Digital Research (4th Place)** *2023*  
Saudi Arabia Ministry of Communications and Information Technology
- **Top 7% on StackOverflow** *2022*
- **Best Computer Vision Project** *2020*  
Fihm.ai
- **Best Research Project Award** *2019*  
IEEE Malaysia Section
- **Master's Dean's List Student Award** *2019*  
Universiti Teknologi Malaysia
- **Competent Communicator** *2019*  
Toastmasters Global
- **Bachelor's Dean's List Student Award** *2018*  
Universiti Teknologi Malaysia
- **Innovate Malaysia Design Competition** *2018*  
ViTrox Corporation Berhad
- **Best Capstone Project Lab** *2017*  
Universiti Teknologi Malaysia

## CERTIFICATIONS

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- **PMI Certified Professional in Managing AI (PMI-CPMAI)™** *Jan 2026*  
Project Management Institute
- **Certified Data Management Professional (CDMP)®** *Jan 2026*  
DAMA International
- **Certified Innovation Professional (CInP)®** *Feb 2025*  
Global Innovation Institute (GInI) — via Milha for Business & Innovation
- **Generative AI for Business Leaders** *Oct 2024*  
Udacity
- **Certified Artificial Intelligence Scientist (CAIS™)** *Dec 2023*  
United States Artificial Intelligence Institute
- **Google Project Management Specialization** *Jun 2022*  
Coursera
- **Rasa Developer Certification** *Apr 2021*  
Rasa

- **AI for Medicine** Aug 2020  
DeepLearning.AI
- **Artificial Intelligence Engineer (Master Program)** Jun 2020  
IBM & Simplilearn
- **IoT** Jul 2020  
Cisco
- **Data Analysis** Mar 2020  
Udacity
- **Machine Learning** Dec 2019  
Stanford

## PUBLICATIONS

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### [Google Scholar Profile](#)

1. Saida Makhloufi, Abdelaziz Salah Saidi, **Mohamed Mohana**, Ashraf Ali Mohammad, F. Bargaan. “Forecasting of Solar Photovoltaic Power Generation Using Advanced Machine Learning: A Case Study of Saudi Arabia,” *2025 Saudi Arabia Smart Grid (SASG)*, IEEE, pp. 1–5, 2025.
2. A. S. Saidi, L. Alhmoud, M. A. Rakrouki, **M. Mohana**, A. E. H. Hamida, A. Al Saed. “Voltage stability evaluation using modal analysis and deep learning technique for the Tunisian power system integrating large-scale RES power plants,” *Journal of Electrical Systems*, 20(3), 2709–2729, 2024.
3. Mohammed Alsaqer, Salem Alelyani, **Mohamed Mohana**, Khalid Alreemy, Ali Alqahtani. “Predicting Location of Tweets Using Machine Learning Approaches,” *Applied Sciences*, 2023.
4. Jesmeen Mohd Zebabar Hoque, Nor Azlina Ab. Aziz, Salem Alelyani, **Mohamed Mohana**, Maruf Hosain. “Improving Water Quality Index Prediction Using Regression Learning Models,” *International Journal of Environmental Research and Public Health*, 2022.
5. **Mohamed Mohana**, Prasanalakshmi B, Salem Alelyani, Mohammed Saleh Alsaqer. “Fused Deep Neural Network based Transfer Learning in Occluded Face Classification and Person re-Identification,” *arXiv*, 2022.
6. Mohamad Razwan Abdul Malek, Nor Azlina Ab Aziz, Salem Alelyani, **Mohamed Mohana**, Farah Nur Arina Baharudin, Zuwairie Ibrahim. “Comfort and energy consumption optimization in smart homes using bat algorithm with inertia weight,” *Journal of Building Engineering*, 2022.
7. Yahya Aseri, Khalid Alreemy, Salem Alelyani, **Mohamed Mohana**. “Meeting Challenges of Modern Standard Arabic and Saudi Dialect Identification,” *11th International Conference on Embedded Systems and Applications (EMSA)*, 2022.
8. Sayed Ismail SNM, Ab Aziz NA, S. Z. Ibrahim, S. W. Nawawi, S. Alelyani, **Mohamed Mohana**. “Evaluation of electrocardiogram: numerical vs. image data for emotion recognition system,” *F1000Research*, 2021.
9. Prasanalakshmi Balaji, Salem Alelyani, Ayman Qahmash, **Mohamed Mohana**. “Contributions of machine learning models towards student academic performance prediction: a systematic review,” *Applied Sciences*, 2021.
10. **Mohamed Mohana**, Abdelaziz Salah Saidi, Salem Alelyani, Mohammed J. Alshayeb, Suhail Basha, Ali Eisa Anqi. “Small-scale solar photovoltaic power prediction for residential load in Saudi Arabia using machine learning,” *Energies*, 2021.
11. Muhammad Anas Hasnul, Nor Azlina Ab Aziz, Salem Alelyani, **Mohamed Mohana**, Azlan Abd Aziz. “Electrocardiogram-based emotion recognition systems and their applications in healthcare—a review,” *Sensors*, 2021.