Dr. Mohammed Kutbi

PhD in Computer Science
Stevens Institute of Technology

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Profile

I am an Associate Professor of Computer Science at Prince Musaid bin Abdulrahman University and a consultant in SDAIA's Capacity Building Sector. At SDAIA, I led the development and rollout of five National Data and AI Capacity Building Frameworks, working with stakeholders to put each into practice. I also lead the data management and governance certification project.

My research spans computer vision, assistive robotics, domain adaptation and privacy-preserving natural language processing. During my PhD at Stevens Institute of Technology, I developed a vision-based robotic wheelchair that can be operated hands-free. At Tonomus (NEOM), I led an AI and robotics research collaboration and deployed large language model and retrieval-augmented generation systems.

At the university, I have led e-learning systems, founded the AI Research Center and chaired the Department of Information Technology, where I led curriculum redesign and accreditation for two degree programs.

Professional Experience

Consultant, Capacity Building Sector · Acting General Manager for Future Skills — 2026 to present
Saudi Data and AI Authority (SDAIA) · Riyadh

- Led development and activation of the five National Data and AI Capacity Building Frameworks with stakeholders, covering occupational, academic, and training standards, K-12 outcomes, and a cross-disciplinary university curriculum.
- Lead the professional certification project covering data classification, personal data protection, National Data Index (NODI) assessment, and data quality management.
- Contribute to AI Professional Badges, SAMAI 2, and the Athka X professional training pathways. Designed and delivered workshops on AI and the future of work.

Prince Musaid bin Abdulrahman University · Riyadh and Jeddah

Associate Professor of Computer Science — 2025 to present

- Teach Machine Learning, Data Mining and Decision Support Systems, and supervise senior AI projects.

Assistant Professor of Computer Science — 2019-2025

- Taught computer science courses and supervised senior AI projects.

Vice-Dean of E-Learning for Educational Systems — 2025-2026

- Led the university-wide migration from Blackboard Learn Original to Blackboard Learn Ultra.
- Integrated AI question generation and grading for faculty and an AI tutor for students into their LMS workflows.
- Redesigned the LMS course template and introduced GenSlide for teaching and Illuminate for reporting. Oversaw the reliability and security of learning and e-exam systems.

Founding Director, AI Research Center — 2024-2025

- Established the center as its first director and wrote its regulations and operating procedures. Directed research, budgeting, strategic planning, and external partnerships.

Chair, Department of Information Technology — 2020-2023

- Led a department serving 4,000+ active students, with 80 faculty across 14 branches. Redesigned the B.S. in Information Technology and M.S. in Cybersecurity, redeveloped every course in both, and led their accreditation.

Member, Artificial Intelligence and Smart Systems Unit — 2019-2023

- Collaborated on interdisciplinary AI research projects.

Industry and applied research

Machine Learning Scientist — 2023-2024
Tonomus (NEOM) · Tabuk

- Led an AI and robotics research collaboration and patenting project with international university researchers. Deployed large language model and retrieval-augmented generation systems for NEOM sectors and external clients.

PhD Researcher, Computer Vision & Deep Learning — 2018
Siemens · Princeton, NJ

- Developed a shared representation for zero-shot domain adaptation across modalities, published in IEEE T-PAMI.

NLP Research & Engineering Developer — 2016
Counselytics · New York

- Built ML-based document summarization with information extraction. Used named-entity features to improve text classification.

Early Career

Software Developer · Global Arabian for Modern Application · Jeddah 2011
Data Entry Intern · Pepsi Cola Co. 2010
Research Coordinator (part-time) · General Authority for Tourism · Jeddah 2007-2011

Education

PhD in Computer Science (AI and Robotics) 2014-2018
Stevens Institute of Technology · Hoboken, NJ
Dissertation: hands-free robotic wheelchair using egocentric computer vision, shared autonomy, and learning from simulation.

MS in Computer Science · Stevens Institute of Technology 2013-2014

BS in Information Technology · King Abdulaziz University 2007-2011

Selected Publications

Zero-shot Deep Domain Adaptation with Common Representation Learning 2022
Kutbi, M., Peng, K.-C., Wu, Z. · *IEEE Transactions on Pattern Analysis and Machine Intelligence*

Usability Studies of an Egocentric Vision-based Robotic Wheelchair 2020
Kutbi, M., Du, X., Chang, Y., Sun, B., Agadakos, N., Li, H., Hua, G., Mordohai, P. · *ACM Transactions on Human-Robot Interaction*

An Egocentric Computer Vision Based Co-Robot Wheelchair 2016
Li, H., **Kutbi, M.**, Li, X., Cai, C., Mordohai, P., Hua, G. · *IEEE/RSJ IROS*

Detecting Contract Cheating Through Linguistic Fingerprint 2024
Kutbi, M., Al-Hoorie, A. H., Al-Shammari, A. H. · *Humanities and Social Sciences Communications*

Egocentric Computer Vision for Hands-Free Robotic Wheelchair Navigation 2023
Kutbi, M., Li, H., Chang, Y., Sun, B., Li, X., Cai, C., Agadakos, N., Hua, G., Mordohai, P. · *Journal of Intelligent & Robotic Systems*

Inlier Clustering Based on the Residuals of Random Hypotheses 2021
Kutbi, M., Chang, Y., Mordohai, P. · *Pattern Recognition Letters*

Learning to Navigate Robotic Wheelchairs from Demonstration: Is Training in Simulation Viable? 2019
Kutbi, M., Chang, Y., Sun, B., Mordohai, P. · *ICCV Workshops*

A Shared Autonomy Approach for Wheelchair Navigation Based on Learned User Preferences 2017
Chang, Y., **Kutbi, M.**, Agadakos, N., Sun, B., Mordohai, P. · *ICCV Workshops*

On the Use of Advanced Learning Analytics in Student At-Risk Prediction: A Deep Learning Model 2026
Mansouri, N., Abed, M., Soui, M., **Kutbi, M.** · *Technology, Knowledge and Learning*

Leveraging Smartphone Imaging and Deep Transfer Learning for Bacterial Colony Classification: From Uncontrolled to Controlled Settings 2025
Kutbi, M., Nagro, S. A., Alhargan, A., Helal, M., Alharthi, H., Abutarboush, M. H., Sendy, B. K. · *IEEE Access*

Named Entity Recognition Utilized to Enhance Text Classification while Preserving Privacy 2023
Kutbi, M. · *IEEE Access*

Automatic Identification of Single Bacterial Colonies Using Deep and Transfer Learning 2022
Nagro, S. A., **Kutbi, M.**, Eid, W. M., Alyamani, E. J., Abutarboush, M. H., Altammami, M. A., Sendy, B. K. · *IEEE Access*

Hands-free Wheelchair Navigation Based on Egocentric Computer Vision: A Usability Study 2017
Kutbi, M., Chang, Y., Mordohai, P. · *IROS Workshop on Assistance and Service Robotics in a Human Environment*

National service

National Curriculum Center (NCC). Curriculum Consultant, Digital Technologies. Advise on AI and data learning outcomes for school education.

University Affairs Council. Board Member, Higher Education Studies and Services Center.

Data and AI Community Association. Member, Executive Committee. A professional community for sharing knowledge and discussing developments in data and AI.

Selected talks and workshops

UNESCO Global Forum on the Ethics of AI · Two presentations and a panel 17 Sep 2026
AI and Youth Empowerment: Future Skills and Preparing for Tomorrow's Jobs · Youth Forum Aug 2026
Using Synthetic Data to Reduce the Need for Real Data · Saudi International AI and Cloud Computing Expo May 2022
An Egocentric Wearable Camera for Assistive Technologies · RobotoKAUST 1 Apr 2021
An Egocentric Computer Vision-based Robotic Wheelchair · KAUST RISC Lab 30 Jan 2020

Technical expertise and languages

AI and ML. Computer vision, human-robot interaction, domain adaptation, NLP, privacy-preserving ML, LLMs, RAG.

Tools. Python, C++, MATLAB, PyTorch, TensorFlow, OpenCV, ROS.

Certifications held. Three Palantir Data Platform certifications and an IBM Predictive Analytics certification.

Languages. Arabic (native), English (fluent).