MUBBASHAR ALTAF KHAN, Ph.D.

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FACULTY CURRICULUM VITAE — ABET SUPPORTING DOCUMENTATION

Education

Ph.D., Electrical Engineering — University of Toledo, 2018

M.B.A. — University of Findlay, 2013

M.S., Electrical Engineering (Telecommunications) — Blekinge Institute of Technology, 2008

B.S., Computer Engineering — COMSATS Institute of Information Technology, 2005

Academic Experience

Central State University — Research Assistant Professor, Engineering and Technology (April 2023–Present)

North Carolina A&T State University — Postdoctoral Research Scholar and Program Manager, Connected Autonomous Systems Technology (October 2018–March 2023)

University of Toledo — Graduate Research Assistant, Internal Audit and Compliance; engineering technology instruction and laboratories (January 2014–September 2018)

Mirpur University of Science and Technology — Assistant Professor, Computer Systems Engineering (November 2008–March 2012)

Nonacademic Professional Experience

Organizational Development Consultants International — Data Analyst/Manager (August 2005–March 2007). Field data collection, analysis, reporting, and performance assessment.

Teaching and Educational Contributions

- Undergraduate and graduate engineering instruction across CSU, University of Toledo, and Mirpur University; at CSU, instruction includes semiconductor manufacturing and emerging semiconductor technologies.
- Developed Semiconductor Processing Certificate Program, Computer Hardware Technology Minor, and semiconductor-focused micro-credentials.
- Supervised capstone projects, student research, laboratories, and technical presentations; trained students in UAV platforms and FAA Part 107 preparation.
- Supported development of Semiconductor Simulation, Microfabrication, Virtual Reality, FPGA, and Robotics and Automation laboratories.
- Assisted in Intel-funded summer semiconductor and microelectronics internship offerings, 2023–2026.

Scholarship and Research Interests

Autonomous systems and robotics; AI and machine learning; human–robot collaboration; autonomous-system testing and evaluation; UAV-enabled infrastructure inspection; connected and autonomous transportation; semiconductor manufacturing and intelligent automation.

Selected Sponsored Research

- PI, NSF #2400396, Operationalizing Autonomy: Induction of Autonomous Systems in Real-Life Applications ($199,995).
- Co-PI, NSF #2430293, PARCS-HBCU (multi-institutional award exceeding $3 million).
- Co-PI, NSF #2436204, Advancing Semiconductor Education through Expansion and Diversification (ASEED) ($299,977).
- Co-PI, NSF #2619041, Collaborative Research: The HBCU-AI: Quantum Innovation Network ($772,000).

Selected Publications

- E. A. Marfo, M. A. Khan, T. Wu, T. L. Cavalline, and A. Karimoddini, “Resource Assessment Tool for Effective Unmanned-Aerial-Vehicle-Assisted Bridge Inspections,” Transportation Research Record, 2025. doi:10.1177/03611981241260701.
- M. K. M. Rabby, M. A. Khan, S. X. Jiang, and A. Karimoddini, “Performance-Aware Trust Modeling Within a Human-Multi-Robot Collaboration Setting,” ACM Transactions on Human-Robot Interaction, 2024. doi:10.1145/3660648.

- A. Karimoddini, M. A. Khan, et al., “Automatic Test and Evaluation of Autonomous Systems,” IEEE Access, 2022. doi:10.1109/ACCESS.2022.3183145.
- M. K. M. Rabby, A. Karimoddini, M. A. Khan, and S. X. Jiang, “A Learning-Based Adjustable Autonomy Framework for Human–Robot Collaboration,” IEEE Transactions on Industrial Informatics, 2022. doi:10.1109/TII.2022.3145567.
- M. A. Khan, M. M. Jamali, T. Maksymyuk, and J. Gazda, “A Blockchain Token-Based Trading Model for Secondary Spectrum Markets in Future Generation Mobile Networks,” Wireless Communications and Mobile Computing, 2020. doi:10.1155/2020/7975393.
- M. K. M. Rabby, M. A. Khan, T. Getahun, S. X. Jiang, and A. Karimoddini, “Empirical Study of Human Trust and Performance Dynamics in a Human-Multi-Robot Collaborative Environment,” IEEE SMC 2026

Institutional and Professional Service

- Chair, Ad Hoc Committee on Certificate Program Policies, Central State University (2023–Present).
- Academic governance roles at Mirpur University, including Research Committee secretary, program committee secretary, and faculty/academic boards.
- Peer reviewer for Wireless Communications and Mobile Computing and IEEE Control Systems Society venues.
- Semiconductor workforce-development outreach, student mentoring, and research seminars.

Professional Development

Udacity Data Analytics Nanodegree (2022); Data Science and Machine Learning using Python, Lahore University of Management Sciences (2021); additional training in Python, statistical modeling, A/B testing, and data analysis