

Walid Shafer M. Yousef

Assistant Professor | Head of IT
Department

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Professional Summary

Dr. Walid Yousef began his academic career in 1997, built upon a foundation of teaching, research, and curriculum design. His core research examines wireless and mobile ad hoc networks (MANETs), vehicular ad hoc networks (VANETs), and wireless sensor networks (WSNs), with a particular focus on smart cities and multimedia communication in dynamic environments. He has authored and co-authored numerous peer-reviewed journal articles and conference papers and serves as a reviewer for respected publishers such as IEEE and Springer. In addition to supervising numerous graduate theses, Dr. Yousef actively contributes to academic accreditation and quality assurance. He is currently focusing on leveraging Machine Learning and Deep Learning techniques for healthcare diagnostics and intelligent communication systems, aiming to bridge the gap between theoretical AI models and real-world infrastructure challenges. He remains deeply committed to bridging theory with hands-on practice, fostering inquiry-based learning, and continuously integrating modern technological trends into the classroom.

Education

2017 **Ph.D. in Wireless Networks & Mobile Computing**, *Universiti Sains Malaysia (USM)*, Penang, Malaysia

- **Thesis:** A Framework of High Mobility Routing for Video Transmission in VANETs Using Relative Speed and Distance.
- **Supervisor:** Prof. Muhammad Rafie Mohd. Arshad.
- **Link:** [View Doctoral Thesis \(USM E-Thesis\)](#)

- 2002 **M.Sc. in Computer Engineering**, *University of Science and Technology (UST)*, Sana'a, Yemen
- **Thesis:** A Software System for Designing and Describing **Ternary Logic Systems**.
 - **Supervisor:** Prof. Abdulraqib A. Asaad.
- 1996 **B.Sc. in Electronics & Telecommunications Engineering**, *Silesian University of Technology*, Gliwice, Poland
- **Thesis:** Internal Sinusoidal Voltage Generator for IBM PC.
 - **Supervisor:** Prof. Filus Zdzisław.
 - *Education completed in Poland, providing a strong foundation in hardware and telecommunications engineering.*

Academic Appointments & Leadership

Academic Ranks

- 2017–Present **Assistant Professor**, *Faculty of Computing and IT, UST, Sana'a*
Senior faculty member responsible for teaching advanced CS/IT courses and supervising graduate research.
- 1997–2017 **Lecturer / Teaching Assistant**, *Faculty of Science and Engineering, UST, Sana'a*
Delivered core curriculum in Computer Engineering and Informatics; evolved from TA to senior lecturer during PhD tenure.

Administrative Leadership & Committees

- 2016–Present **Head of Information Technology Department**, *Faculty of Computing and IT, UST, Sana'a*
- Leading the department's strategic planning, faculty recruitment, and student academic progression.
 - Spearheading curriculum modernization and internal accreditation alignment with **ABET** and **NARS** standards.
- 2018–2021 **Chairman, IT Program Evaluation & Development Committee**, *UST, Sana'a*
- Steered the program review process for continuous improvement and industry alignment.
- 2020 **Curriculum Development Consultant**, *University of Modern Sciences, Sana'a*
- Participated in course descriptions according to ABET standards for Network Engineering and IT programs.
- 2013–Present **Member, Program Development Committee**, *Faculty of Computing and IT, UST, Sana'a*
- Contributing to the design of academic programs in alignment with ABET and NARS standards.
- 2013 **Head of Computer Science and Engineering Department**, *Faculty of Computing and IT, UST, Sana'a*
- Oversaw departmental operations and academic quality assurance for the CSE program.
- 2007–2010 **Member, Program Specification Documents Committee**, *UST, Sana'a*
- Contributed to the development of PSDs for Computer Science, IT, and Networking programs.

- 2004–2007 **Assistant Head**, *Computer Science and Informatics Dept., UST, Sana'a*
○ Managed academic scheduling and departmental operations under the Faculty of Science and Engineering.
- 2003–2004 **Head of Quality Assurance Committee**, *Electronics Engineering Dept., UST, Sana'a*
○ Established quality audit frameworks for engineering labs and course delivery standards.
- 2003–2004 **Head of Student Activities Office**, *Faculty of Science and Engineering, UST, Sana'a*
○ Supervisor position overseeing student initiatives and faculty-wide events.
- 2001–2003 **Quality Assurance Committee Member**, *Computer Science and Informatics Dept., UST, Sana'a*
- 1997 **Curriculum Designer**, *Petroleum Training Center, Sana'a*
○ Designed and prepared the Computer Diploma study program for the Yemen Oil & Gas Corporation.
- 1996–1997 **Training Head**, *Al-Khwarizmi Computer Center, Sana'a*
○ Managed technical training programs and IT certification courses.

Community Involvement

- 2005–2010 **Member of the Parents Council**, Al Noor School, Taiz. Actively contributed to school-community development programs and educational environment enhancement.

Awards & Honors

- 2002 **Distinguished Lecturer Award**, University of Science and Technology (UST), Yemen.
Recognition for outstanding pedagogical performance and commitment to educational excellence within the Computer Science and Informatics Department, Faculty of Science and Engineering.
- 2016–Present **Leadership Recognition**, University of Science and Technology (UST).
Awarded for significant contributions to departmental growth and strategic academic program development, including curriculum alignment with international **ABET** standards.

Research Interests

- **Intelligent Communication Systems:** Machine Learning and Deep Learning applications for network optimization, healthcare diagnostics, and intelligent infrastructure.
- **Next-Generation Networking:** Mobile Ad Hoc Networks (MANETs), Routing Protocols, and high-mobility Vehicular Ad Hoc Networks (VANETs) with a focus on Video Transmission.
- **IoT & Smart Environments:** Wireless Sensor Networks (WSNs), IoT-enabled Smart City infrastructure, and Smart Monitoring systems.
- **Distributed Computing:** Edge and Fog Computing architectures, specifically within the context of Intelligent Transportation Systems (ITS).
- **Security & Architecture:** Network Security in decentralized environments, Computer Architecture, and performance optimization for dynamic wireless systems.

Publications

Peer-Reviewed Journal Articles

- 2026 **Critical success factors influencing business intelligence adoption: Evidence from Yemen.** *PLOS One*, Vol. 21(2). Authors: AT Al-Adimi, MM Ghilan, **W Yousef**, A Ghallab. [\[Link\]](#)
- 2025 **Comparative Analysis of Machine Learning and Deep Learning Techniques for Early Prediction of Breast Cancer.** *Journal of Future Artificial Intelligence and Technologies*, Vol. 1(1). Authors: M Al-Duais, **W Yousef**, et al.
- 2025 **Machine Learning Techniques for Early Detection and Diagnosis of Breast Cancer Prediction.** *The Indonesian Journal of Computer Science*, Vol. 14(2). Authors: M Al-Duais, **W Yousef**, B Al-Fuhaidi.
- 2024 **Business Intelligence Systems Adoption: A Systematic Literature Review.** *Sana'a University Journal of Applied Sciences and Technology*, Vol. 2(6). Authors: A Al-adimi, MM Ghilan, **W Yousef**.
- 2024 **Topological and Hyper Topological Coincides of Benzenoid Circumcoronene Series.** *Baghdad Science Journal*. Authors: **W Yousef**, A Alameri.
- 2022 **A Study on Network Graph-PW, Network Symmetric Digraph-PW, and Change Networks.** *International Journal of Multidisciplinary Research and Analysis*, Vol. 5(12). Authors: A Abdu, **W Yousef**, A Ghallab, et al.
- 2021 **Fuzzy Regression Models Using the Least-Squares Method Based on the Concept of Distance.** *Fuzzy Optimization and Modeling Journal*, Vol. 2(3). Authors: A Al-Qudaimi, **W Yousef**.
- 2020 **An Efficient Deployment Model for Maximizing Coverage of Heterogeneous Wireless Sensor Networks.** *Journal of Sensors*. Authors: B Al-Fuhaidi, **W Yousef**, et al.

2017 **Vehicle Rewarding for Video Transmission over VANETs Using Real Neighborhood and Relative Velocity.** *JATIT*. Authors: **WSM Yousef**, et al.

[Conference Proceedings](#)

2025 **Enhancing University Admissions through Scalable and Fair Machine Learning Models.** *IEEE eSmarTA 2025*. Authors: **Walid Yousef**, et al. [\[Link\]](#)

2024 **Knowledge Transfer Challenges: A Practical Study of Yemen Public Telecommunication Corporation.** *IEEE ETDS*. Authors: S Al-Taweel, **W Yousef**, et al.

2024 **Firefly Algorithm Based PID Controller for AQM in TCP Networks.** *IEEE ETDS*. Authors: B Al-Fuhaidi, **W Yousef**, et al.

2021 **Computation Offloading Algorithms in Vehicular Edge Computing Environment: A Survey.** *IEEE ITSS-IoE 2021*. Authors: S Talal, **W Yousef**, B Al-Fuhaidi.

[Early Works & Theses](#)

2016 **Ph.D. Thesis: A Framework of High Mobility Routing for Video Transmission in VANETs.** Universiti Sains Malaysia (USM).

2003 **A Software System for Ternary Logic Systems Design.** *Journal of Science and Technology*, Vol. 8(1). Authors: **WSM Yousef**, A Asaad.

[Graduate Supervision & Mentorship](#)

[Current Supervisions](#)

Ph.D. Candidates (Co-supervisor): Wadah Aljanad (Expected 2027), Ammar Noaman (Expected 2027).

Master's Candidates (Supervisor): Sarah Alabsi (Expected 2026), Mansour Alsaedy (Expected 2026).

[Leadership & Excellence](#)

Research Actively supervising candidates in **Intelligent Communication Systems**, Wireless Edge Computing, and **Healthcare Diagnostics** (Machine Learning applications).

Excellence Guide students through the full research lifecycle, ensuring rigorous methodology and alignment with real-world infrastructure challenges.

[Academic & Institutional Projects](#)

2018–Present **IT Program Accreditation & Development**, *Lead Coordinator*, University of Science and Technology

- Managed the internal alignment of the Information Technology curriculum with **ABET** and **NARS** standards.
- Developed comprehensive program specification documents and quality assurance frameworks for the department.

- 2021–2023 **Smart Cities & Intelligent Communication**, *Research Lead*, Internal Initiative
- Spearheaded a departmental research initiative to integrate IoT and Machine Learning concepts into senior design projects.
 - Developed technical roadmaps for students exploring vehicular and mobile ad hoc networks (VANETs/MANETs).
- 2019–2020 **National Academic Standards (NARS)**, *Collaborator*, Ministry of Higher Education
- Contributed expert technical feedback during the national workshop series for defining reference standards for computing programs in Yemen.

Teaching Experience

- 1997–Present **Assistant Professor**, *University of Science and Technology (UST)*, Sana'a
- **Graduate Level (M.Sc.):** Advanced Algorithm Design and Analysis, Research Methodology, and Advanced Operating Systems.
 - **Undergraduate Level:** Wireless & Mobile Networks, Computer Architecture, Digital Logic Design, Data Communications, and Programming (Python, C++).
 - **Pedagogical Approach:** Bridging theoretical foundations with hands-on laboratory practice. Implementing **Inquiry-Based Learning (IBL)** to foster critical thinking and adapting curricula to emerging technological trends like **IoT** and **Machine Learning**.
- 2024–2026 **Visiting Assistant Professor**, *Yemeni Academy for Postgraduate Studies*, Sana'a
- **Master of CS & IT:** Delivered intensive modules on **Advanced Algorithm Design and Analysis**.
 - Focused on algorithmic strategies, computational complexity (Big O notation), and performance optimization for large-scale systems.
 - Supervised graduate-level research projects and technical seminars.

Digital Outreach & Educational Leadership

Educational Content Creator [@WalidShaher-69](#) | YouTube Channel

- Impact Developed and managed a specialized academic channel to provide open access to high-quality computing education in **Arabic**, aimed at supporting students in the region and enriching Arabic scientific content.
- Curriculum Digitalization Produced over 50+ hours of structured video lectures covering Computer Architecture and Organization, Digital Logic Design, Algorithm Analysis, and Research Methodology.

Conference & Workshop Participation

Leadership & Academic Service

- Track Chair **IEEE ITSS-IoE 2021:** International Conference on Intelligent Technology, System, and Service for Internet of Everything, UST, Sana'a.

- TPC & Reviewer
- **IEEE eSmarTA (2024, 2025):** Emerging Smart Technologies and Applications.
 - **Digital Transformation Conf. (2022):** Technological Knowledge and Digital Transformation in Higher Education, Yemen Center for IT.
 - **IEEE MTICIT (2021):** Modern Trends in the Information and Communication Technology Industry, Al-Razi University.

Workshop Chair **IT Program Development Workshop (UST, 2021):** Led the strategic session for curriculum modernization and alignment with industry trends.

Professional Development Workshops

May 2025 **Industry-Academia Alignment:** Workshop on "Bridging the Gap Between Computer Education Outputs and Labor Market Requirements," Emirates International University.

2018–2019 **Accreditation & Standards:** Intensive workshops on National Academic Reference Standards (NARS) by the Ministry of Higher Education, and ABET-based Program Specification at Al-Razi University.

2010 **Research Excellence:** Technical Paper Writing Workshop at Universiti Sains Malaysia (USM), Malaysia.

Additional Training

Curriculum Active participation in continuous training for **Course Evaluation**, Program Specification Documents (PSD), and internal quality audit mechanisms at UST.

Editorial & Peer Review Activity

Journal Reviewer Served as an **Invited Reviewer** for high-impact journals published by **IEEE** and **Springer**, including *Neural Computing and Applications*. Responsible for evaluating the technical merit and novelty of submissions in Machine Learning and Wireless Networks.

Conference Leadership Appointed as **Track Chair** and member of the **Technical Program Committee (TPC)** for several prestigious international conferences, including:

- **IEEE ITSS-IoE** (International Conference on Intelligent Transportation Systems and Internet of Everything).
- **IEEE eSmarTA** (Emerging Smart Technologies and Applications).

Scholarly Impact Contributing to the global academic community by ensuring the rigorous peer-review standards of cutting-edge research in Intelligent Communication Systems.

Certifications & Professional Training

Academic Quality & Accreditation

2013–2019 **Program Specification Documents (ABET Aligned):** Completed multiple advanced workshops at University of Science and Technology (UST) and Al-Razi University regarding international accreditation standards.

- 2018 **National Academic Reference Standards (NARS):** Participated in the specialized workshop by the Ministry of Higher Education for aligning curricula with national standards.
- 2018 **Evaluation of Academic Program Outcomes:** 9-hour intensive training on outcome-based education (OBE) and assessment metrics, UST.
[Research & Pedagogical Development](#)
- 2010 **Technical Paper Writing:** Professional workshop on high-impact research publishing at Universiti Sains Malaysia (USM), Malaysia.
- 2012 **Course Preparation and Review:** Workshop focused on modernizing course content and peer review mechanisms, UST.
- 2001–2002 **Methods of Teaching & Management:** Completed 24 hours of pedagogical training (UST, 2001) and Professional Management training by Louis Allen Associates (2002).

Professional Memberships

IEEE Member (Active Contributor and Technical Reviewer)

Details Actively engaged in reviewing cutting-edge research for IEEE conferences and journals, demonstrating a commitment to global academic standards.

Languages

- Arabic Native proficiency.
- English Full professional proficiency.
- Polish Professional working proficiency (Technical & Academic context); **Educated and resided in Poland for 6 years (1990–1996).**
- Malay Conversational.

Featured Research Projects

- 2026 **Business Intelligence Adoption Framework, Lead Researcher, PLOS One**
 - Investigated critical success factors (CSFs) influencing Business Intelligence (BI) adoption within the Yemeni business environment.
 - Developed a strategic framework to support digital transformation in developing economies.
 - **Link:** [View Article on PLOS One](#)
- 2025 **Fair ML in Higher Education, Principal Investigator, IEEE eSmarTA**
 - Developed scalable and fair Machine Learning models to optimize university admission processes in Yemen.
 - Addressed algorithmic bias and transparency issues in large-scale educational data.
 - **Link:** [View Publication on IEEE Xplore](#)
- 2026 **IoT Smart Home Automation, Technical Lead, Applied Project**
 - Designed a low-cost IoT framework for remote lighting control via smartphone integration.
 - Achieved a rapid-deployment architecture (10-minute setup) to bridge theory with practical consumer applications.
 - **Skills:** IoT Protocols, Real-time Systems, Smartphone-Hardware Interfacing.

Technical Skills

Research Areas **Healthcare Diagnostics, Intelligent Communication Systems**, Smart Cities, and IoT Frameworks.

Programming Python (Scikit-learn, TensorFlow), Neural Networks, Deep Learning, \LaTeX .

Simulation OPNET Simulator, MATLAB, ORCAD.

References

- **Prof. Muhammad Rafie Hj. Mohd. Arshad**
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