Nabil J. Sarhan, Ph.D.

http://nabil.eng.wayne.edu/
https://deeplearning.eng.wayne.edu

Dept. of Electrical & Computer Engineering
Wayne State University
5050 Anthony Wayne Drive
Detroit, MI 48202
Phone: (313) 577-2860
nabil.sarhan@wayne.edu

Highlights:

- Internationally recognized **expert in computer systems design** with almost 25 years of experience, including data communication, multimedia systems, video streaming, video coding, video processing, computer networking, and video security systems, with a recent emphasis on deep learning and hardware accelerators for artificial intelligence.

- Was awarded four research grants from the National Science Foundation (NSF), including one for designing an automated video security system and one for designing a computer chip and system for a hardware accelerator for artificial intelligence.

- Has taught **courses** in computer architecture, parallel computer systems, deep learning, "computer networking and network programming", "data structures and algorithms", "multimedia communication and networking", multimedia systems, "scalable and secure Internet services and architectures", and C++ programming.

- Authored more than fifty **referred research papers** on computer systems, multimedia systems, and deep learning.

- Is the named inventor on **two** issued **U.S. patents,** one of which is relating to automated video surveillance systems and the other to deep learning accelerators.

- Is co-author of a book on Hardware Software Co-design of Epileptic Seizure Prediction Systems.

- Was retained as a **testifying expert** in numerous patent litigations related to computer systems, video streaming, multimedia systems, video coding, video transcoding, adaptive bitrate, video sharing, video security systems, video recording, data communication, low voltage differential signaling, I/O interconnects, USB, PCI Express, modulation, demodulation, synchronization, and design of styluses.

- Following **testimony** before the U.S. District Court for the Western District of Texas, the federal judge stated I was one of the two primary reasons the plaintiff prevailed in a patent infringement brought against Google.

- Reviewed **source code** for large-scale software of two major social media and telecommunication companies.

- Served as the *Chair of the Interest Group on Media Streaming* of the IEEE Multimedia Communication Technical Committee.

- Received multiple **teaching awards**, including the *WSU President's Award for Excellence in Teaching*.

- Has recently been inducted into the *WSU Academy of Teachers* in 2022.

- Has extensive program and institutional **accreditation experience**, including serving as an *NCAAA Panel Chair* more than 20 times as well as being an *ABET Evaluator*.

Appointments

- Associate Professor with Tenure, Electrical and Computer Engineering, Wayne State University, Detroit, August 2009 - Present.

- Director, Wayne State Computer Systems and Deep Learning Research Laboratory, Dept. of Electrical and Computer Engineering, Wayne State University, Detroit, August 2018 - Present.

- Director, Interdisciplinary M.S. in AI Program (Systems and Hardware), College of Engineering, Wayne State University, Detroit, August 2022 – Now.

- Overall Coordinator, Interdisciplinary M.S. in AI Program, College of Engineering Wayne State University, Detroit, August 2022 – Now.

- Director, Wayne State Multimedia Computing and Networking Research Laboratory, Dept. of Electrical and Computer Engineering, Wayne State University, Detroit, August 2003 – July 2018.

- Graduate Program Director, Electrical and Computer Engineering, Wayne State University, Detroit, August 2011 - January 2013.
- Assistant Professor, Dept. of Electrical and Computer Engineering, Wayne State University, Detroit, August 2003 - August 2009.

- Graduate Lecturer/Teaching Assistant/Research Assistant, Dept. of Computer Science and Engineering, Pennsylvania State University, University Park, June 1999 - August 2003.

- Intern, Unisys, Malvern, Pennsylvania, May 2002 - September 2002: I participated in discussions of new multiprocessor systems, made proposals for new architectures, developed SES models, and developed an automatic statistic extraction and post-analysis tool.

- Teaching Assistant, Electrical Engineering Department, Jordan University of Science and Technology, 1996 - 1997.

- Engineer, Voice Processing Dept., Jordan Computer Center, Amman, Jordan, November 1995 - February 1996: I was responsible for developing phone bank and voice-mail computer systems.

Expert Witness Experience in Patent Infringement, Patent Validity, Patent Invalidity, Inter Partes Review (IPR), and Ex Parte Reexamination Cases

Summary of completed work: **2 Trials**, **5 Depositions**, **9 Expert Reports**, and **13 Declarations**.

Types of work performed: *technical **patent infringement** analysis, Inter Partes Review (**IPR**),* Ex *Parte Reexamination (**EPR**),* and **patent *validity/invalidity*** *analysis*, including *obviousness*, *derivation*, *priority date*, *written description*, *enablement*, *reissue patent enlargement*, and *diligence*.

Main technical areas: computer systems, video streaming, multimedia systems, video coding, video transcoding, adaptive bitrate, video sharing, video security systems, video recording, data communication, low voltage differential signaling, I/O interconnects, USB, PCI Express, modulation, demodulation, synchronization, and design of styluses

Cases with Testifying at Trial:

- Expert Witness, **patent infringement and validity cases**, ACQIS v. ASUSTeK and ASUS Global, United States District Court for the Western District of Texas, on the plaintiff's side, technical areas of the litigation: computer systems with Low Voltage Differential Signaling (LVDS), serial interfacing, and I/O interconnects, including PCI

Express, USB 3.x, USB 4.0, Thunderbolt, SATA, SAS, and DisplayPort, January 2022 – March 2024. The plaintiff won **$17.9M.**

- Expert Witness, **patent infringement** case VideoShare v. Google (for YouTube Service), United States District Court for the Western District of Texas, on the plaintiff's side, technical areas of the litigation: video streaming, video transcoding, video uploading, and advertisements, July 2020 - November 2021. The plaintiff won **$25.9M. The federal judge stated that I was one of the two primary reasons the plaintiff prevailed in the case**.

Ongoing Cases:

- Expert Witness, **patent infringement and validity** cases, ACQIS v. Hon Hai, on the **plaintiff's side,** October 2023 – Now.

- Expert Witness, Steller v. Motorola Solutions, Inc. and Watchguard Video, on the **defendants' side** (patent invalidity), areas of the patents: video security/surveillance systems, January 19, 2024 – Now.

Other Cases:

- Expert in Petitions for *two* **Inter Partes Review (IPR)** for SHENZHEN QIANFENYI INTELLIGENT TECHNOLOGY CO., LTD.: case SHENZHEN QIANFENYI INTELLIGENT TECHNOLOGY CO., LTD. Petitioner v. WACOM CO., LTD, January 2025 – February 2025. The case was **settled**.

- Expert Witness in **Patent Invalidity**: SHENZHEN QIANFENYI INTELLIGENT TECHNOLOGY CO., LTD. Petitioner v. WACOM CO., LTD, January 2025 – February 2025. On the **defendant's side**. The case was **settled**.

- Expert in Petitions for *eight* **Ex Parte Reexamination (EPR)** cases, for Motorola Solutions, Inc. and Watchguard Video, areas of the patents: video security/surveillance systems, Submission date: November 2025.

- Expert Witness, **patent infringement and validity** cases, ACQIS v. Quanta Computer, October 2023 – December 2025. On the **plaintiff's side.** The case was **settled after my expert report was submitted and after deposition.**

- Expert in Petitions for *eight* **Inter Partes Review (IPR)** cases, for Motorola Solutions, Inc. and Watchguard Video, areas of the patents: video security/surveillance

systems, January 19, 2024 – March 2025. All IPRs were instituted, but the director overturned the decision due to the existence of a parallel district court case.

- Expert Witness, **patent infringement and validity** cases, ACQIS v. Sony, on the plaintiff's side, areas of the patents: computer systems with LVDS channels, serial interfacing, graphics, PCI transactions, USB, etc., April 2023 – October 2024. The case was **settled after my expert report was submitted and after deposition**.

- Expert Witness and Consulting Expert, **patent infringement** case, ACQIS v. Microsoft, on the **plaintiff's side**, areas of the patents: computer systems with LVDS channels, serial interfacing, graphics, PCI transactions, USB, etc., April 2023 – June 2023. The case was **settled.**

- Expert Witness and Consulting Expert, **patent infringement** case, ACQIS v. Wiwynn, on the **plaintiff's side**, areas of the patents: computer systems with LVDS channels, serial interfacing, graphics, PCI transactions, USB, etc., January 2022 – May 2023. The case was **settled** after my expert report was submitted.

- Expert Witness and Consulting Expert, **patent infringement and validity** cases, ACQIS v. Lenovo, on the **plaintiff's side**, areas of the patents: computer systems with LVDS channels, serial interfacing, graphics, PCI transactions, USB, etc., January 2022 – November 2022. The case was **settled** after my expert report was submitted.

- Expert Witness and Consulting Expert, **patent infringement** case VideoShare v. Meta (Facebook), on the **plaintiff's side**, patent: "Systems and Methods for Sharing Video with Advertisements over a Network", November 2021 – March 2023.

Major Source Code Review Experience

- Review of Facebook and Instagram source code in patent infringement case VideoShare v. Meta (Facebook), March and April 2022.

- Review of YouTube source code in patent infringement case VideoShare v. Google, February 2021.

Consulting Expert Experience in Patent Infringement and Other Corporate Litigation Cases

- Consulting Expert, a patent infringement case on video sharing and streaming systems involving a major social media company, February 2020 - October 2020.

- Consulting Expert, *five* patent infringement cases related to video streaming and multimedia systems, involving major cellular, social media, and phone manufacturing companies, 2012 - 2014.

- Consulting Expert, an intellectual property corporate litigation case involving secure multimedia products for medical applications, 2014.

- Consulting Expert, a corporate litigation case involving IP addresses and anonymous e-mails: Integrated Health Group v. Integrated Healthcare Systems, on the Plaintiff's side, 2014.

Experience in Accreditation, Review, and Educational Reform

- ABET Program Evaluator, Accreditation Board for Engineering and Technology (ABET), 2023 – Now.
    - Computer Engineering Program, **University of Massachusetts Amherst**, 2025.
    - Computer Engineering Program, **Brigham Young University**, Idaho Falls, Idaho, 2024.
    - Computer Engineering Program, **University of Scranton**, Scranton, Pennsylvania, 2023.
- External Reviewer, Master of Science Program in Computer Engineering, **University of Michigan** – Dearborn, February 2024.
- Chair, numerous Program Accreditation Panels, Education & Training Evaluation Commission, National Center for Academic Accreditation & Evaluation (ETEC-NCAAA), Saudi Arabia: reviewing the following programs:
    - 3 M.S. degree engineering/IT programs (B.S. in Cybersecurity, B.S. in Software Engineering, and B.S. in Computer and Network Engineering) at University of Jeddah, Saudi Arabia, January 2026.
    - M.S. in Cybersecurity, University of Jouf, Saudi Arabia, December 2025.
    - 4 M.S. degree engineering/IT programs (B.S. in AI, B.S. in Computer Information Systems, B.S. in Computer Science, and B.S. in Cybersecurity) at King Faisal University, Saudi Arabia, May 2025.
    - 4 M.S. degree engineering programs (M.S. in Computer Engineering, M.S. in Information Security, M.S. in Information Systems, and M.S. in Information Management) at Imam Mohammad Ibn Saud Islamic University, Saudi Arabia, February 2025.
    - 4 M.S. degree engineering programs (M.S. in Computer Engineering, M.S. in Power and Machine Engineering, M.S. in Electronics and Communication Engineering, and M.S. in Nuclear Engineering) at King Abdulaziz University, Saudi Arabia, January 2025.
    - 2 B.S. degree programs (B.S. in Computer Engineering and B.S. in Information Technology) at Tabuk University, Saudi Arabia, June 2024.

- M.S. in Energy Engineering, Effat University, Jeddah, Saudi Arabia, May 2024.
- 3 B.S. degree programs (B.S. in Electrical Engineering, B.S. in Mechanical Engineering, and BS. In Civil Engineering), Taif University, Taif, Saudi Arabia, January 2024.
- 2 M.S. degree programs (M.S. in Information Technology and M.S. in Computer Science) at King Khalid University, Abha, Saudi Arabia, December 2023.
- B.S. in Computer Science program at Prince Sattam bin Abdulaziz University, Saudi Arabia, May 2023.
- Bachelor of Electrical Engineering program at Northern Borders University, Saudi Arabia, February 2023.
- Bachelor of Science in Information Technology program at Majmaah University, Saudi Arabia, January 2023.
- Bachelor of Computer Science Program at Shaqra University, Saudi Arabia, November 2022
- Bachelor of Science in Computer and Network Engineering program at Jazan University, Saudi Arabia, October 2021
- Master of Science Program of Electrical Engineering at King Saud University, Riyadh, Saudi Arabia, March 2021
- Bachelor of Science in Electrical Engineering Program at Najran University, Najran, Saudi Arabia, February 2021
- Bachelor program in Graphics Design and Digital Media Program at Princess Nourah Bint Abdulrahman University, Riyadh, Saudi Arabia, November 2020
- Bachelor of Science in Electrical Engineering Program at Majmaah University, Al Majma'ah, Saudi Arabia, November 2020
- Bachelor of Science in Electrical and Computer Engineering Program at Effat University, Jeddah, Saudi Arabia, September 2020
- Bachelor of Science in Software Engineering Program at King Saud University, Riyadh, Saudi Arabia, May 2017
- Bachelor of Science in Electrical Engineering Program at Taibah University, Medina, Saudi Arabia, March 2016

- Chair, Institutional Accreditation Panels, Education & Training Evaluation Commission, National Center for Academic Accreditation & Evaluation (ETEC-NCAAA), Saudi Arabia: reviewing the following universities:
  - Islamic University of Al-Madina, Saudi Arabia, May 2025.
  - Princess Noura University, Riyadh, Saudi Arabia, November 2024
  - Alfaisal University, Riyadh, Saudi Arabia, March 2024
  - University of Hafr Al Batin, Saudi Arabia, October-November 2021

- Reviewer, the Academic Accreditation Policy Book 2021, Education & Training Evaluation Commission, Saudi Arabia, 2021

- Educational Expert, Digital Design Courses and Labs Revision, Computer Engineering Department, Birzeit University, Palestine, August 2018 – December 2018

- External Educational Expert, Computer Engineering and Computer Science Reform, Birzeit University, Palestine, February 2018 – June 2018

- Member, Program Accreditation Panels, The National Commission for Academic Accreditation and Assessment (NCAAA):
    - Electrical Engineering Program at Prince Sattam University, Riyadh, Saudi Arabia, March 2016
    - Electrical Engineering Program at King Saud University, Riyadh, Saudi Arabia, April 2015
- Member, Institutional Accreditation Panels, Education Evaluation Commission-Higher Education Sector (EEC-HES):
    - King Abdulaziz University, Saudi Arabia, February 2022
    - Shaqra University, Shaqra, Saudi Arabia, October 2020
    - University of Business and Technology, Jeddah, Saudi Arabia, May 2017
    - Effat University, Jeddah, Saudi Arabia, December 2016

Other Experience

- Expert, Specialty Occupation evaluation of **numerous** H-1B visa cases for Software Developer, Software Engineer, Web Developer, Hadoop Developer, Database Administrator, Project Engineer, ServiceNow Developer, and PLM Engineer positions, 2018 - 2020.

Honors/Awards

- Serving as an Advisory Board Member on Engineering Programs at Henry Ford College.

- Was inducted into the *WSU Academy of Teachers* in 2022.
    - Induction statement: “Professor Nabil Sarhan is a master of developing project-based courses and new cutting-edge curricula for engineering students, such as a new M.S. degree in Artificial Intelligence. Students in his classes are immersed in a research-like environment with hands-on activities and training in technological problem-solving. This approach builds student interest and excitement as it prepares students for their future careers. Sarhan is an indefatigable innovator who has reformed multiple courses at the undergraduate and graduate levels based on design approaches and active learning. His courses are cutting-edge, covering topics from computer networks to artificial intelligence. Through industry grants and connections, he has also

made 21st-century technology available to his students. As a member of the Academy of Teachers, Sarhan will be able to share his knowledge and experience of developing innovative and project-based STEM courses with instructors across Wayne State University".

- Served as a Reviewer of the Academic Accreditation Policy Book 2021 for Saudi Arabia, 2021.

- Received two **Certificate of Appreciation Awards** from the IEEE SEM Section for significant contributions to the Spring Section Conference, May 2, 2019.

- Served as **Chair** of the ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV), 2018.

- Received **Certificate of Appreciation Award** from the IEEE SEM Section for dedicated leadership and significant contribution to the IEEE SEM Humanitarian Technology Conference and to the success of IEEE SEM activities, July 9, 2016.

- Served as **General Chair** of the Fifth IEEE International Workshop on Quality of Experience for Multimedia Communications (QoEMC 2016), Washington, DC USA, December 8, 2016.

- Received **Certificate of Appreciation Award** from the IEEE SEM Section for being an invited speaker and for outstanding contribution to the success of the IEEE SEM Section Spring 2015 Conference, April 28, 2015.

- Served as the **Chair of the Interest Group on Media Streaming**, IEEE Multimedia Communication Technical Committee, 2012 - 2014.

- Served as **Associate Editor** of the IEEE Transactions on Circuits and Systems for Video Technology, 2012-2015.

- Served as the **Guest Editor** for Multimedia, IEEE COMSOC MMTC E-Letter, Special Issue on Cloud Computing, Vol. 8, No. 6, November 2013.

- Served as a **Guest Editor** for Multimedia Tools and Applications Journal, Special Issue on Real-time Multimedia Computing, 65(2), July 2013.

- Served as **Chair** of the Multimedia Computing and Communications (MCC) Symposium, 2015.

- Served as **Co-Chair** of the Technical Program Committee of the International Conference on Computing, Networking and Communication (ICNC 2014), 2014

- Served as **Chair** of the Green Computing, Networking, and Communications Symposium (GCNC), 2014.

- Has a published paper that was nominated for the Best Paper Award at the IEEE International Conference on Multimedia and Expo (ICME 2013). (ICME is a premier conference with an acceptance rate of 12.7% for regular papers.)

- Served as **Co-Director** of the IEEE Multimedia Communication Technical Committee Review Board, 2010 - 2012.

- Served as an Expert Witness/Consulting Expert in several patent infringement cases related to video streaming, involving major cellular networks, mobile operating systems makers, smartphone manufacturers, and media streaming companies, 2012-Current.

- Received the 2009 **President's Award for Excellence in Teaching**, Wayne State University, April 28, 2009.

- Received the 2008 **Outstanding Professional Award** from the Institute of Electrical and Electronics Engineers (IEEE) Southeastern Michigan Section for many accomplishments in multimedia computing and networking research and university teaching profession, March 2008 (at Engineering Society of Detroit Banquet) and April 2008 (at IEEE-SEM Spring Conference).

- Received the 2007 College of Engineering **Excellence in Teaching Award**, College of Engineering, Wayne State University, April 2008.

- Received 2007-2008 Wayne State University **Research Award**, March 2008.

- Served as the Faculty Counselor of the Institute of Electrical and Electronics Engineers (IEEE) Wayne State University Student Branch, which
    - Won The 2011 Michael Darson Award for Most Outstanding Student Organization.
    - Won the 2010 Michael Darson Award for Most Outstanding Student Organization.
    - Won The 2009 IEEE Southeastern Michigan Outstanding Student Branch Award, April 2009.
    - Won the 2008 IEEE Southeastern Michigan Outstanding Student Branch Award, April 2008.
    - Received Special Recognition Certificate from IEEE-USA for outstanding service, leadership, and commitment to IEEE-USA and the Profession.
    - Received two Recognition Certificates from IEEE Southeastern Michigan Section (2008 and 2009).

- Was nominated for the 2007 IEEE Southeastern Michigan Outstanding Student Branch Award.
- Was selected as the host and organizer of the 2008 IEEE-USA Student Professional Awareness Workshop on October 18, 2008: Many national IEEE leaders and more than 70 students from 5 universities participated in this workshop.
- Had an officer who received the 2007 IEEE Southeastern Michigan Outstanding Student Involvement Award.
- Won third place in the IEEE Region 4 Ethics Contest, November 2007.

- Received a **Certificate of Appreciation Award** from the Institute of Electrical and Electronics Engineers Southeastern Michigan Section for outstanding contribution as an invited speaker at the Spring 2008 Section Conference, April 2008.

- Received the **Computer Science and Engineering Graduate Student Teaching Award**, Computer Science and Engineering Department, Pennsylvania State University, University Park, March 2001.

- Served as the president of a Penn State student organization for two years.

- Was named to Marquis Who's Who Emerging Leaders, Who's Who in Science and Engineering, and Who's Who in America.

In the Media

- Was featured in the news article: Elon Musk's xAI vs Sam Altman's OpenAI: Who Will Win the AI War?, Newsweek, February 15, 2025.
- Was featured in the news article "How DeepSeek Has Blown Open AI Race Between US and China", Newsweek Magazine, February 14, 2025 Issue.
- Was featured in the news article "DeepSeek's 'Surprising' AI Claims Show China 'Starting to Gain an Edge", Newsweek, Jan. 30, 2025.

Educational Background

- Ph.D., Computer Science and Engineering, Pennsylvania State University, University Park, GPA = 4.0 / 4.0, August 2003.

- M.S., Computer Science and Engineering, Pennsylvania State University, University Park, GPA = 4.0 / 4.0, May 2003.

- B.S., Electrical Engineering with Computer Engineering specialization, Jordan University of Science and Technology, Jordan, September 1995.

Research Areas of Interest

Computer systems design, multimedia systems, video streaming, computer networking, data communication, deep learning, hardware accelerators for AI, computer vision systems, automated video surveillance, I/O.

Research Grants/Awards

- National Science Foundation, EPCN-Energy-Power-Ctrl-Netwrks: “An Energy-Efficient, CMOS-based, and Scalable Mixed-Signal DNN System with Reconfigurable Crossbars”, As Co-PI with Mohammad Alhawari, September 2022 – August 2025, $418,907.

- Silicon Mechanics, Third Annual Research Cluster Grant: “Silicon Mechanics Research Cluster Grant”, as Co-PI with Loren Schwiebert et al., March 2014, Equipment Grant for a high-performance computing cluster, valued at about $190,000.

- National Science Foundation, Computer Systems Research (CSR) Program, “DMSS: Towards Resource-Efficient Automated Video Surveillance Systems”, As PI and Sole Investigator, September 2008 - August 2014, $290,000. (Only 10-15% of proposals were accepted.)

- National Science Foundation, Networking Technology and Systems (NeTS) Program, “NBD: Efficient Delivery of Video-on-Demand Streams to Heterogeneous Receivers”, as PI and Sole Investigator, September 2006 - August 2008, $180,887, (Only 10% out of 274 proposals were accepted).

- National Science Foundation, Computing Research Infrastructure (CRI), “CRI: Reconfigurable High Performance Cluster Computing and Medical Engineering Applications”, as Co-PI with Cheng-Zhong Xu, September 2007 - August 2009, $200,445.

- Sun Microsystems, “Sun's Center of Excellence in Open Source Computing and Applications”, Equipment Grant of cluster of 8 servers with a total of 40 cores, As Co-PI with Cheng-Zhong Xu and S. Jiang, January 2009 - December 2010, valued at $150,000.

- Sun Microsystems, “Integration of Sun Technologies in Wayne State Classes”, Equipment Grant, March 2008, As Co-PI with Cheng-Zhong Xu, Approximate Value: $50,000.

- National Science Foundation, Networking Technology and Systems (NeTS) Program, REU Supplement, "NBD: Efficient Delivery of Video-on-Demand Streams to Heterogeneous Receivers", As PI and Sole Investigator, June 2008 - August 2008, $12,000.

- National Science Foundation, "REU Site Telematics and Automotive Information Technology", As Faculty Mentor, with Cheng-Zhong Xu, 2009-2010, $314,500. (As mentor)

- Wayne State University Research Award, "Towards Resource-Efficient Automated Video Surveillance", As PI and Sole Investigator, April 2008, $10,000.

Patents

- US Patent 9,313,463: "Automated Video Surveillance Systems", Inventor: Nabil J. Sarhan, Date: April 12, 2016.

- US Patent 12,504,721: "Energy Efficient Digital to Time Converter (DTC) for Edge Computing", Inventors: Hamza Al-Maharmeh, Mohammad Alhawari, Nabil Sarhan, and Mohammed Ismail Elnaggar, Date: December 23, 2025.

Books:

- "Hardware Software Co-design of Epileptic Seizure Prediction Systems" by Shiva Maleki Varnosfaderani, Nabil J. Sarhan, and Mohammad Alhawari, Springer-Verlag New York, ISBN-13: 9783031953576, October 2025.

Selected Referred Papers

Note: In computer engineering and science, premier conference publications are as important, if not more important, than premier journal publications.

- Hamandi, H.R., Sarhan, N.J. VINDICATOR: violent incident detection by categorical classification. *Multimedia Tools and Applications* 85, 188 (2026): **https://doi.org/10.1007/s11042-026-21353-z.**

- Shiva Maleki Varnosfaderani, Ian McNulty, Nabil J. Sarhan, Waleed Abood, and Mohammad Alhawari. An Efficient Epilepsy Prediction Model on European Dataset with Model Evaluation Considering Seizure Types. *IEEE Journal of Biomedical and Health Informatics*, July 2024, DOI: 10.1109/JBHI.2024.3423766.

- Baraa Saeed Ali, Nabil J. Sarhan, and Mohammed Alawad. On the Robustness of Compressed Models with Class Imbalance. *Computers* 13, no. 11: 297, November 2024. https://doi.org/10.3390/computers13110297.

- Shiva Maleki Varnosfaderani, Nabil J Sarhan, and Mohammad Alhawari. Performance Evaluation of Epilepsy Prediction Model Based on Seizure's Type and Patients' Characteristics. In Proceedings of the 2024 *IEEE 67th International Midwest Symposium on Circuits and Systems* (MWSCAS), pages 1446-1450, August 2024.

- Yousef O. Sharrab, Mohammad A. Alsmirat, Mohammad Ali H. Eljinini, and Nabil J. Sarhan. iHELP: a model for instant learning of video coding in VR/AR real-time applications. *Multimedia Tools Appl* (2024), Published: March 2024. https://doi.org/10.1007/s11042-024-18666-2.

- Hamza Al Maharmeh, Nabil J. Sarhan, Mohammed Ismail, and Mohammad Alhawari. A 116 TOPS/W Spatially Unrolled Time-Domain Accelerator Utilizing Laddered-Inverter DTC for Energy-Efficient Edge Computing in 65nm". *IEEE Open Journal of Circuits and Systems*, 2023, DOI: 10.1109/OJCAS.2023.3332853.

- Mohammad Alsmirat, Yousef Sharrab, Monther Tarawneh, Sana'a Al-shboul, and Nabil J. Sarhan. Video Coding Deep Learning-based Modeling for Long Live Video Streaming over Next Network Generation. *Cluster Computing,* 26:1159-1167, 2023, https://doi.org/10.1007/s10586-022-03948-x.

- Melvin Edwards, Nabil J. Sarhan, and Mohammad Alhawari. Analysis of Dual-Row and Dual-Array Crossbars in Mixed Signal Deep Neural Networks. In Proceedings of the 2023 I*EEE 66th International Midwest Symposium on Circuits and Systems* (MWSCAS), August 2023.

- Shiva Maleki Varnosfaderani, Ian McNulty, Nabil J. Sarhan, Mohammad Alhawari. Artifacts Removal Techniques for the European iEEG Dataset. In Proceedings of the 2023 I*EEE 66th International Midwest Symposium on Circuits and Systems* (MWSCAS), August 2023.

- Melvin D. Edwards, Nabil J. Sarhan, and Mohammad Alhawari. A CMOS Analog Neuron Circuit with A Multi-Level Memory. In Proceedings of the *2023 International Conference on Microelectronics* (ICM) (2023): 11-15.

- Shiva Maleki Varnosfaderani, Rihat Rahman, Nabil J. Sarhan, and Mohammad Alhawari. A Self-Aware Power Management Model for Epileptic Seizure Systems Based on Patient-

Specific Daily Seizure Pattern. In Proceedings of the 2023 *International Conference on Microelectronics* (ICM) (2023): 91-95.

- Sina G. Davani and Nabil J. Sarhan. Experimental Analysis of Optimal Bandwidth Allocation in Computer Vision Systems. *IEEE Transactions on Circuits and Systems for Video Technology*, Volume: 31, Issue: 10, October 2021. DOI: 10.1109/TCSVT.2020.3044015.

- Sina G. Davani, Musab Al-Hadrusi, and Nabil J. Sarhan. An Autonomous System for Efficient Control of PTZ Cameras. *ACM Transactions on Autonomous and Adaptive Systems*, Volume 16, Issue 2, June 2021, Article No.: 6, pp 1-22. DOI: https://doi.org/10.1145/3507658.

- Yousef O. Sharrab, Izzat Alsmadi, and Nabil J. Sarhan. Towards the Availability of Video Communication in Artificial Intelligence-based Computer Vision Systems Utilizing a Multi-objective Function. *Cluster Computing*, Springer, August 2021. DOI: https://doi.org/10.1007/s10586-021-03391-4.
- Ian McNulty, Shiva Maleki Varnosfaderani, Omar Makke, Nabil J. Sarhan, Eishi Asano, Aimee Luat, and Mohammad Alhawari. Analysis of Artifacts Removal Techniques in EEG Signals for Energy-Constrained Devices. In Proceedings of the *IEEE International Midwest Symposium on Circuits and Systems* (MWSCAS), August 2021. DOI: 10.1109/MWSCAS47672.2021.9531909.

- Shiva M. Varnosfaderani, Rihat Rahman, Nabil J. Sarhan, Levin Kuhlmann, Eishi Asano, and Mohammad Alhawari. A Two-Layer LSTM Deep Learning Model for Epileptic Seizure Prediction. In Proceedings of the 3rd *IEEE International Conference on Artificial Intelligence Circuits & Systems* (AICAS 2021), June 2021. DOI: 10.1109/AICAS51828.2021.9458539.

- Hamza Al Maharmeh, Nabil J. Sarhan, Chung-Chih Hung, Mohammed Ismail, and Mohammad Alhawari. A Comparative Analysis of Time-Domain and Digital-Domain Hardware Accelerators for Neural Networks. In Proceedings of the *IEEE International Symposium on Circuits and Systems* (ISCAS), May 2021. DOI: 10.1109/ISCAS51556.2021.9401758.

- Rihat Rahman, Shiva Varnosfaderani, Omar Makke, Nabil Sarhan, Eishi Asano, Aimee Luat, and Mohammad Alhawari. Comprehensive Analysis of EEG Datasets for Epileptic Seizure Prediction. In Proceedings of the *IEEE International Symposium on Circuits and Systems* (ISCAS), May 2021. DOI: 10.1109/ISCAS51556.2021.9401766.

- Mohammad A. Alsmirat and Nabil J. Sarhan. Intelligent Optimization for Automated Video Surveillance at the Edge: A Cross-Layer Approach. *Simulation Modelling Practice and Theory*, Elsevier, Volume 105, 102171, December 2020. DOI: https://doi.org/10.1016/j.simpat.2020.102171.

- Hayder Hamandi and Nabil J. Sarhan. Novel Analytical Models of Face Recognition Accuracy in Terms of Video Capturing and Encoding Parameters. In Proceedings of the *IEEE International Conference on Multimedia and Expo* (ICME 2020), London, United Kingdom, July 2020, pp. 1-6. DOI: 10.1109/ICME46284.2020.9102791.

- Hamza Al Maharmeh, Nabil J. Sarhan, Chung-Chih Hung, Mohammed Ismail, Mohammad Alhawari. Compute-in-Time for Deep Neural Network Accelerators: Challenges and Prospects. Proceedings of the IEEE 63rd *International Midwest Symposium on Circuits & Systems* (MWSCAS 2020), pages 990-993, August 9-12, 2020. DOI: 10.1109/MWSCAS48704.2020.9184470.

- Melvin D. Edwards, Hamza Al Maharmeh, Nabil J. Sarhan, Mohammed Ismail, and Mohammad Alhawari. A Low-Power, Digitally-Controlled, Multi-Stable, CMOS Analog Memory Circuit. Proceedings of the IEEE 63rd *International Midwest Symposium on Circuits & Systems* (MWSCAS 2020), pages 872-875, August 9-12, 2020. DOI: 10.1109/MWSCAS48704.2020.9184459.

- Mohammad A. Alsmirat and Nabil J. Sarhan. Cross-Layer Optimization for Many-to-One Wireless Video Streaming Systems. *Multimedia Tools and Applications*, Volume 77, Number 4, pages 1 - 23, Springer US, February 2018. DOI: 10.1007/s11042-018-5698-x.

- Sina G. Davani and Nabil J. Sarhan. Experimental Analysis of Bandwidth Allocation in Automated Video Surveillance Systems. In Proceedings of the 2017 *ACM Conference on Multimedia* (MM '17), pages 1457-1464, Mountain View, California, USA, October 2017. DOI: https://doi.org/10.1145/3123266.3123376. Best venue in the multimedia area.

- Yousef O. Sharrab and Nabil J. Sarhan. Modeling and Analysis of Power Consumption in Live Video Streaming Systems. *ACM Transactions on Multimedia Computing Communications and Applications* (ACM TOMM). Volume 13, Issue 4, pages 54:1-54:25, September 2017. DOI: https://doi.org/10.1145/3115505.

- Musab Al-Hadrusi, Nabil J. Sarhan, and Sina G. Davani. A Clustering Approach for Controlling PTZ Cameras in Automated Video Surveillance. In Proceedings of the *IEEE International Symposium on Multimedia* (ISM 2016), pages 333-336, San Jose, CA, USA, December 2016. DOI: 10.1109/ISM.2016.0073.

- Mohammad Alsmirat and Nabil J. Sarhan. Cross-Layer Optimization for Automated Video Surveillance. In Proceedings of the *IEEE International Symposium on Multimedia* (ISM 2016) pages 243-246, San Jose, CA, USA, December 2016. DOI: 10.1109/ISM.2016.0055.

- Kamal Nayfeh and Nabil J. Sarhan. A Scalable Solution for Interactive Near Video-on-Demand Systems. *IEEE Transactions on Circuits and Systems for Video Technology*, Volume 26, Number 10, pages 1907 - 1916, October 2016. DOI: 10.1109/TCSVT.2015.2478708.

- Kamal Nayfeh and Nabil J. Sarhan. Client-Side Cache Management for Scalable and Interactive Video Streaming. *IEEE International Conference on Multimedia and Expo* (ICME 2016), pages 1-6, Seattle, WA, 2016. DOI: 10.1109/ICME.2016.7552967.

- Musab Al-Hadrusi and Nabil J. Sarhan. A Scalable Delivery Solution and a Pricing Model for Commercial Video-on-Demand Systems with Video Advertisements. *Multimedia Tools and Applications*, Volume 73, Issue 3, pp 1417-1443, Springer US, December 2014. DOI: https://doi.org/10.1007/s11042-013-1597-3.

- Kamal Nayfeh and Nabil J. Sarhan. Design and Analysis of Scalable and Interactive Near Video-on-Demand Systems. In Proceedings of the *IEEE International Conference on Multimedia and Expo*, San Jose, California, July 2013. DOI: 10.1109/ICME.2013.6607540. Best Paper candidate. One of the best venues in multimedia. Acceptance rate for regular papers (with oral presentations): 12.7% (79 accepted out of 622 papers).

- Yousef Sharrab and Nabil J. Sarhan. Aggregate Power Consumption Modeling of Live Video Streaming Systems. In Proceedings of the *ACM Multimedia Systems* (MMSys 2013), Oslo, Norway, February 27 - March 1, 2013. DOI: https://doi.org/10.1145/2483977.2483983. Among the best venues in the multimedia area. Acceptance rate: 23.8%.

- Yousef Sharrab and Nabil J. Sarhan. Detailed Comparative Analysis of VP8 and H.264. In Proceedings of the *IEEE International Symposium on Multimedia* (ISM 2012), Irvine, California, December 2012. DOI: 10.1109/ISM.2012.33. Among the best venues in the multimedia area. Acceptance rate: 24.8%.

- Musab Al-Hadrusi and Nabil J. Sarhan. Efficient Control of PTZ Cameras in Automated Video Surveillance Systems. In Proceedings of the *IEEE International Symposium on*

Multimedia (ISM 2012), Short Paper, Irvine, California, December 2012. DOI: https://doi.org/10.1109/ISM.2012.72.

- Mohammad Alsmirat and Nabil J. Sarhan. Cross-Layer Optimization and Effective Airtime Estimation for Wireless Video Streaming. In Proceedings of the *International Conference on Computer Communications and Networks* (ICCCN 2012), pages 1 – 7, Munich, Germany, July 2012. DOI: 10.1109/ICCCN.2012.6289275. Acceptance rate: 30%.

- Yousef Sharrab and Nabil J. Sarhan. Accuracy and Power Consumption Tradeoffs in Video Rate Adaptation for Computer Vision Applications. In Proceedings of the 2012 *IEEE International Conference on Multimedia & Expo* (ICME 2012), pages 410 - 415, Melbourne, Australia, July 2012. DOI: https://doi.org/10.1109/ICME.2012.77.

- Musab Al-Hadrusi and Nabil J. Sarhan. Client-Driven Price Selection for Scalable Video Streaming with Advertisements. In *Proceedings of the International MultiMedia Modeling Conference* (MMM 2012), pages 429 - 439, Klagenfurt, Austria, January 2012. DOI: https://doi.org/10.1007/978-3-642-27355-1_40. Acceptance rate: 34.9%.

- Nabil J. Sarhan and Musab Al-Hadrusi. Waiting-Time Prediction and QoS-Based Pricing for Video Streaming with Advertisements. In Proceedings of the *IEEE International Symposium on Multimedia* (ISM 2010), pages 17 - 24, Taichung, Taiwan, December 2010. DOI: https://doi.org/10.1109/ISM.2010.13. Acceptance rate: 31%.

- Bashar Qudah and Nabil J. Sarhan. Efficient Delivery of On-Demand Video Streams to Heterogeneous Receivers. *ACM Transactions on Multimedia Computing, Communications, and Applications* (ACM TOMCCAP), Volume 6, Issue 3, August 2010. DOI: https://doi.org/10.1145/1823746.1823754.

- Nabil J. Sarhan, Mohammad A. Alsmirat, and Musab Al-Hadrusi. Waiting-Time Prediction in Scalable On-Demand Video Streaming. *ACM Transactions on Multimedia Computing, Communications, and Applications* (ACM TOMCCAP), Volume 6, Issue 2, March 2010. DOI: https://doi.org/10.1145/1671962.1671967.

- Mohammad Alsmirat and Nabil J. Sarhan. Detailed Performance and Waiting-Time Predictability Analysis of Scheduling Options in On-Demand Video Streaming. *EURASIP Journal on Image and Video Processing*, Springer, Volume 2010, 2010.

- Bashar Qudah and Nabil J. Sarhan. Workload-Aware Resource Sharing and Cache Management for Scalable Video Streaming. *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 19, No. 3, March 2009. DOI: 10.1109/TCSVT.2009.2013498,

- Mohammad Alsmirat and Nabil J. Sarhan. Performance and Waiting-Time Predictability Analysis of Design Options in Cost-Based Scheduling for Scalable Media Streaming. In *Proceedings of the International MultiMedia Modeling Conference* (MMM 2009), pages 150-162, Sophia-Antipolis, France, January 2009. DOI: https://doi.org/10.1007/978-3-540-92892-8_16. Accepted for oral-style presentation (as opposed to poster). Acceptance rate for oral presentations: 16%.

- Jeffrey R. Ostrowski and Nabil J. Sarhan. Characterization of Social Video. In *Proceedings of SPIE Multimedia Computing and Networking* (MMCN), San Jose, California, USA, January 2009. DOI: 10.1117/12.815535. Acceptance rate: 35%.

- Musab Al-Hadrusi and Nabil J. Sarhan. A Scalable Delivery Framework and a Pricing Model for Streaming Media with Advertisements. In *Proceedings of SPIE Multimedia Computing and Networking* (MMCN 2008), pages 68180G-68180G, San Jose, California, USA, January/February 2008. DOI: https://doi.org/10.1145/1291233.1291412. Acceptance rate for full-length papers: 26%.

- Mohammad Alsmirat and Nabil J. Sarhan. Predictive Cost-Based Scheduling for Scalable Video Streaming. In *Proceedings of the IEEE International Conference on Multimedia & Expo* (ICME 2008), pages 857 - 860, Hannover, Germany, June 2008. DOI: 10.1109/ICME.2008.4607570. Accepted as oral-style presentation (as opposed to poster). Acceptance rate for oral presentations: 20%.

- Mohammad Alsmirat, Musab Al-Hadrusi, and Nabil J. Sarhan. Analysis of Waiting-Time Predictability in Scalable Media Streaming. In *Proceedings of ACM Multimedia*, pages 727 - 736, Augsburg, Germany, September 2007. DOI: https://doi.org/10.1145/1291233.1291398. Best venue of publication in the multimedia area. Acceptance Rate: 19%.

- Musab Al-Hadrusi and Nabil J. Sarhan. Scalable Delivery and Pricing of Streaming Media with Advertisements. In *Proceedings of ACM Multimedia*, pages 791 - 794, Augsburg, Germany, September 2007. Best venue of publication in the multimedia area. Acceptance Rate: 27%.

- Nabil J. Sarhan and Bashar Qudah. Efficient Cost-Based Scheduling for Scalable Media Streaming. In *Proceedings of the SPIE/ACM Multimedia Computing and Networking Conference* (MMCN 2007), pages 65040C-65040C, San Jose, California, USA, January/February 2007. DOI: 10.1117/12.706022.Acceptance Rate: 30%.

- Bashar Qudah and Nabil J. Sarhan. Towards Enhanced Resource Sharing in Video Streaming with Generalized Access Patterns. In *Proceedings of the IEEE International Conference on Multimedia & Expo* (ICME 2007), pages 1219 - 1222, Beijing, China, July 2007. DOI: 10.1109/ICME.2007.4284876.

- Bashar Qudah and Nabil J. Sarhan. Towards Scalable Delivery of Video Streams to Heterogeneous Receivers. In *Proceedings of ACM Multimedia*, pages 347 - 356, Santa Barbra, California, USA, October 2006. DOI: 10.1145/1180639.1180716. Best venue in the multimedia area. Acceptance Rate: 16%.

- Bashar Qudah and Nabil J. Sarhan. Analysis of Resource Sharing and Cache Management Techniques in Scalable Video-on-Demand. In *Proceedings of the 14th IEEE International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems* (MASCOTS 2006), pages 327 – 334, Monterey, California, USA, September 2006. DOI: https://doi.org/10.1109/MASCOTS.2006.13. Acceptance Rate: 36%.
- Nabil J. Sarhan and Chita R. Das. Caching and Scheduling in NAD-Based Multimedia Servers. *IEEE Transactions on Parallel and Distributed Systems*, Vol. 15, No. 10, pages 921 - 933, October 2004. DOI: 10.1109/TPDS.2004.49.

- Nabil J. Sarhan and Chita R. Das. A New Class of Scheduling Policies for Providing Time of Service Guarantees in Video-On-Demand Servers. In *Proceedings of the 7th IFIP/IEEE International Conference on Management of Multimedia Networks and Services*, (MMNS 2004), pages 127 - 139, San Diego, California, USA, October 2004. DOI: 10.1007/978-3-540-30189-9_11. Acceptance Rate: 31%.

- Nabil J. Sarhan and Chita R. Das. Analysis of Caching Performance in Multimedia Servers. In *Proceedings of the 8th International Conference on Internet and Multimedia Systems and Applications*, pages 288 - 293, Hawaii, USA, August 2004. Acceptance rate: NA.

- Nabil J. Sarhan and Chita R. Das. An Integrated Resource Sharing Policy for Multimedia Storage Servers Based on Network-Attached Disks. In *Proceedings of the 23rd IEEE International Conference on Distributed Computing Systems* (ICDCS 2003), pages 136 - 143, Providence, Rhode Island, USA, May 2003. DOI: 10.1109/ICDCS.2003.1203460. Best venue in the distributed systems area. Acceptance Rate: 17%.

- Nabil J. Sarhan and Chita R. Das. Providing Time of Service Guarantees in Video-On-Demand Servers. In Poster *Proceedings of the Twelfth International World Wide Web Conference* (WWW 2003), Budapest, Hungary, May 2003. WWW is the best conference in the Web area.

- Nabil J. Sarhan and Chita R. Das. A Simulation-Based Analysis of Scheduling Policies for Multimedia Servers. In *Proceedings of the 36th Annual Simulation Symposium* (ANSS 2003), pages 183 - 190, Orlando, Florida, USA, March 30 - April 2, 2003. DOI: 10.1109/SIMSYM.2003.1192812. Acceptance Rate: 39%.

- Nabil J. Sarhan and Chita R. Das. Adaptive Block Rearrangement Algorithms for Video-On-Demand Servers. In *Proceedings of the 2001 International Conference on Parallel Processing* (ICPP 2001), pages 452 - 459, Valencia, Spain, September 2001. DOI: 10.1109/ICPP.2001.952092.

Editorships

- NOSSDAV '18: Proceedings of the 28th ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video, Association for Computing Machinery, Amsterdam, Netherlands, June 12-15, 2018, ISBN: 978-1-4503-5772-2. Link. (As Program Chair)

- Special Issue on Cloud Computing for Multimedia, *IEEE COMSOC MMTC E-Letter*, Vol. 8, No. 6, November 2013. (As Guest Editor)

- Special Issue on Real-time Multimedia Computing, *Multimedia Tools and Applications Journal*, 65(2), July 2013. (As Guest Editor with SooKyun Kim, Henry Duh, and Vladimir Hahanov). DOI: https://doi.org/10.1007/s11042-013-1428-6. Journal metrics: Impact factor: 2.577 (2021).

- Proceedings of the 15th International Conference on Internet and Multimedia Systems and Applications, May 16 – 18, 2011, Washington, DC, USA, ISBN 978-88986-871-7. (As the Editor).

- IEEE Computer Society Multimedia Communications Technical Committee R-Letter, Vol. 3, No 3, June 2012. (As Co-Director of the Editorial Board)

- IEEE Computer Society Multimedia Communications Technical Committee R-Letter, Vol. 3, No 2, April 2012. (As Co-Director of the Editorial Board)

- IEEE Computer Society Multimedia Communications Technical Committee R-Letter, Vol. 3, No 1, February 2012. (As Co-Director of the Editorial Board)

- IEEE Computer Society Multimedia Communications Technical Committee R-Letter, Vol. 2, No 6, December 2011. (As Co-Director of the Editorial Board)

- IEEE Computer Society Multimedia Communications Technical Committee R-Letter, Vol. 2, No 5, October 2011. (As Co-Director of the Editorial Board)

- IEEE Computer Society Multimedia Communications Technical Committee R-Letter, Vol. 2, No 4, August 2011. (As Co-Director of the Editorial Board)

- IEEE Computer Society Multimedia Communications Technical Committee R-Letter, Vol. 2, No 3, June 2011. (As Co-Director of the Editorial Board)

- IEEE Computer Society Multimedia Communications Technical Committee R-Letter, Vol. 2, No 2, April 2011. (As Co-Director of the Editorial Board)

- IEEE Computer Society Multimedia Communications Technical Committee R-Letter, Vol. 2, No 1, February 2011. (As Co-Director of the Editorial Board)

- IEEE Computer Society Multimedia Communications Technical Committee R-Letter, Vol. 1, No 2, December 2010. (As Co-Director Editorial Board)

- IEEE Computer Society Multimedia Communications Technical Committee R-Letter, Vol. 1, No 1, October 2010. (As Co-Director Editorial Board)

Book Chapters

- Nabil. J. Sarhan. Multimedia Streaming. In *Handbook of Computer Networks*, Editor: Hossein Bidgoli, pp. 282-292, John Wiley & Sons, Inc., 23 November 2007. Print ISBN:9780471784593, Online ISBN: 9781118256114. DOI: https://doi.org/10.1002/9781118256053.ch17.

Magazine Articles

- Nabil. J. Sarhan. Is 3D Here to Stay? Analysis of 3D Video Projection Technologies. *ESD Technology Century*, Vol. 15 No. 3, Fall 2010.

- Nabil. J. Sarhan. Do You ... YouTube? YouTube and the Technology Behind It. *ESD Technology Century*, Vol. 14, No. 2, April-May 2009. (Featured as the main article on the cover page.)

Invited Articles

- Nabil. J. Sarhan. Recent and Future Trends in Mobile Video Streaming. *IEEE Computer Society Multimedia Communications Technical Committee e-Letter*, Special Issue on Multimedia Streaming over Mobile Networks, Vol. 8, No. 5, September 2013.

- Nabil. J. Sarhan. Broadcast and Multicast Based Mobile Video Distribution. *IEEE Computer Society Multimedia Communications Technical Committee e-Letter*, Vol. 4, No. 8, September 2009.

Invited Panels

- Panelist, "AI in Higher Education: Promise, Pitfalls, and Practical Realities", Wayne State University, February 26, 2026.

- Panelist, "Automated Wayne State Video Surveillance (WAVS) System", IEEE SEM Humanitarian Technology Conference, July 9, 2016.

- Panelist, "Challenges and Applications of Mobile Video Technologies", ACM Workshop on Mobile Video (MoVid), Oslo, Norway, February 2013.

- Panelist, "Content Distribution (P2P versus Infrastructure) and the Mobile Age", SPIE/ACM Multimedia Computing and Networking (MMCN), San Jose, California, USA, January 2008.

Selected Technical Presentations

- "Demystifying AI: Advances and Challenges", Guest Presentation, Vellore Institute of Technology (VIT), India, February 26, 2025 (Online).

- "Developing Effective Canvas Quizzes and Exams", Teaching Highlight on YouTube, July 17, 2024.

- "Analysis of Deep Learning Accuracy". IEEE SEM Spring Section Conference, May 2, 2019.

- "Towards Energy Adapted Video Streaming". IEEE SEM Spring Section Conference, May 2, 2019.

- "Dependency-aware Scheduling for Tasks with Constraints in Big Data Clusters". The 6th Annual Big Data & Business Analytics Summit, March 22, 2019 (Poster).

- “Experimental Analysis of Bandwidth Allocation in Automated Video Surveillance Systems”, ACM Multimedia, October 2017

- “A Clustering Approach for Controlling PTZ Cameras in Automated Video Surveillance”. IEEE International Symposium on Multimedia (ISM 2016), San Jose, December 2016.

- “Cross-Layer Optimization for Automated Video Surveillance”. IEEE International Symposium on Multimedia (ISM 2016), San Jose, December 2016.

- “Design and Analysis of Scalable and Interactive Near Video-on-Demand Systems”. IEEE International Conference on Multimedia and Expo, San Jose, California, July 2013.

- “Aggregate Power Consumption Modeling of Live Video Streaming Systems”. ACM Multimedia Systems (MMSys 2013), Oslo, Norway, February 27 - March 1, 2013.

- “Efficient Control of PTZ Cameras in Automated Video Surveillance Systems”. IEEE International Symposium on Multimedia (ISM 2012), Irvine, California, December 11, 2012.

- “Detailed Comparative Analysis of VP8 and H.264”. IEEE International Symposium on Multimedia (ISM 2012), Irvine, California, December 12, 2012 (presented by my student).

- “Cross-Layer Optimization and Effective Airtime Estimation for Wireless Video Streaming”. International Conference on Computer Communications and Networks (ICCCN 2012), Munich, Germany, July 2012.
- “Client-Driven Price Selection for Scalable Video Streaming with Advertisements”. International MultiMedia Modeling Conference (MMM 2012), Klagenfurt, Austria, January 2012.

- “Vehicular Multimedia and Communication Systems: Recent and Future Trends”. International Conference on Advanced Research & Applications in Mechanical Engineering (ICARAME 2011), Louaize, Lebanon, June 13, 2011.

- “Waiting-Time Prediction and QoS-Based Pricing for Video Streaming with Advertisements”. IEEE International Symposium on Multimedia (ISM 2010), Taichung, Taiwan, December 13, 2010. (Video Presentation)

- “Characterization of Social Video”. SPIE Multimedia Computing and Networking (MMCN), San Jose, California, USA, January 19, 2009.

- "Alternative Pricing and Scalable Delivery Strategies for Media Streaming with Advertisements". Workshop on Hot Topics in Multimedia Research, Darmsdat, Germany, June 21, 2008.

- "Predictive Cost-Based Scheduling for Scalable Video Streaming". IEEE International Conference on Multimedia & Expo (ICME 2008), Hannover, Germany, June 25, 2008.

- "A Scalable Delivery Framework and a Pricing Model for Streaming Media with Advertisements". SPIE/ACM Multimedia Computing and Networking (MMCN 2008), San Jose, California, USA, January 31, 2008.

- "Analysis of Waiting-Time Predictability in Scalable Media Streaming". ACM Multimedia, Augsburg, Germany, September 2007.

- "Efficient Cost-Based Scheduling for Scalable Media Streaming". SPIE/ACM Multimedia Computing and Networking Conference (MMCN 2007), San Jose, California, USA, February 1, 2007.

- "A New Class of Scheduling Policies for Providing Time of Service Guarantees in Video-On-Demand Servers". International Conference on Management of Multimedia Networks and Services (MMNS), San Diego, California, October 5, 2004.

- "An Integrated Resource Sharing Policy for Multimedia Storage Servers Based on Network-Attached Disks". International Conference on Distributed Computing Systems (ICDCS 2003), Providence, Rhode Island, May 20, 2003.

- "On the Design of Scalable and High Performance Multimedia Servers", University of Arkansas, Little Rock, May 15, 2003.

- "A Simulation-Based Analysis of Scheduling Policies for Multimedia Servers'. Annual Simulation Symposium (ANSS 2003), Orlando, Florida, April 1, 2003.

- "Multimedia Systems and Networking: Challenges, Studies, and Future Work", ECE Seminar, Wayne State University, Detroit, Michigan, February 11, 2004.

Invited Talks

- School Presentation, "Demystifying Artificial Intelligence for Kids: How to teach computers how to do things?", STEM Night, IIA School, Detroit, MI, Sept. 26, 2019.

- "Towards Highly Scalable and Interactive Video Streaming Systems", IEEE SEM Spring Conference, University of Michigan – Dearborn, April 28, 2015.

- "Outstanding IEEE Professional Presentation: Scalable Delivery and Pricing for Streaming Media with Advertisements", IEEE Southeastern Michigan Conference (IEEE-SEM), University of Michigan, Dearborn, USA, April 2, 2008.

- "Graduate School: Is It Right for You", IEEE End of School Year Event, University of Michigan, Dearborn, USA, May 4, 2008.

Tutorials

- Nabil. J. Sarhan. Video Streaming over the Internet and Wireless Networks: Challenges and Approaches, International Conference on Information and Communication Systems, Amman, Jordan, December 20-22, 2009.

Conference Exhibitions

- Wayne State Automated Video Surveillance System, MiSN Homeland Security Market Leadership Conference, Dearborn, Michigan, November 4, 2009.

Educational Activities

- Serving as an Advisory Board Member on Engineering Programs at Henry Ford College since 2024

- Revised the description, outcomes, and assessment strategies for the M.S. degree in AI, March 9, 2026.

- Developed a new course, **Special Topics in Deep Learning Design**, in Fall 2025

- Developed a proposal for *Revised M.S. Degree in Computer Engineering*, April 2025.

- Serving as the **Overall Coordinator** of the College of Engineering M.S. Program in Artificial Intelligence and the **Director** of Systems and Hardware Track, since August 2022.

- Led the college efforts to develop the **College of Engineering M.S. Program in Artificial Intelligence**, 2021-2022.

- Serving as the **Chair of the Computer Engineering Area Committee,** which made significant improvements in the computer engineering curricula at both the graduate and undergraduate levels, 2017 – current.

- Developed a new ECE mandatory course titled "Object-Oriented Programming for Electrical and Computer Engineering (ECE 2050)".

- Led the efforts to modernize the Introduction to Microcomputers course and lab (the ECE 3620) by using ARM-based microcontrollers, 2020 - 2021.

- Served as the **Director of the ECE Graduate Program**, 2011 – 2013 and made the following contributions.

    - Developing a new graduate curriculum for the M.S. degrees in Electrical Engineering and Computer Engineering,

    - Developing several new policies for admission, plagiarism, overrides, grade performance requirements, form submission, Ph.D. prerequisite requirements, and Ph.D. Prelim Exam,

    - Substantially revising and enhancing almost all graduate forms for better clarity, level of detail, and formatting,

    - Substantially revising and enhancing the graduate handbook and all other documentation, and

    - Substantially revising and enhancing the graduate website.

- Served as the **Chair of the Computer Engineering Taskforce**, 2014 – 2016, which made significant changes to the Computer Option of the B.S. Degree in Electrical Engineering and the Ph.D. Preliminary Examination requirements and outline for Computer Engineering.
- Developed a research-oriented graduate course on multimedia computing and networking.

- Transformed the senior-level computer architecture course (ECE 4680) into a research and design-oriented course with built-in labs, with the most recent changes in the title and description in May 2019 to reflect new trends in the field.

- Transformed the computer networking course (ECE 5650) into a project-oriented course with built-in labs, with the most recent changes in the title and description in May 2019 to reflect new trends in the field. The course reflects new trends in the field by covering

Software-Defined Networking, OpenFlow, and Generalized Forwarding and switching to Python 3. The number of labs is increased from 3 to 5, starting Winter 2020.

- Revised the description and outline of ECE 7650 (Scalable and Secure Internet Services and Architectures", with the most change in the description in May 2019.

Courses Taught

- Special Topics in the Design of Deep Learning Systems (ECE 5995) at WSU
-
- Advanced Computer Architecture (ECE 7660) at WSU
- Scalable and Secure Internet Services and Architectures (ECE 7650) at WSU
- Special Topics on Multimedia (ECE 7995) at WSU
- Special Topics on Multimedia Networking (ECE 7995) at WSU
- Special Topics on Multimedia Systems and Networks (ECE 7995) at WSU
- Computer Networking and Network Programming (ECE 5650) at WSU
- Computer Architecture (ECE 4680) at WSU
- Data Structures and Algorithms (ECE 4050/CS 5050) at WSU
- Microcomputer Systems and Programming (CSE 312) At Penn State
- Computer Programming for Engineers (CMPSC 201c) at Penn State
- Introduction to Algorithmic Processes (CMPSC 101) at Penn State

Ph.D. Dissertations Supervised

- Baraa Ali, "Improving the Robustness of Compressed Deep Learning Models Against Class Imbalance", Date of defense: May 12, 2025.
- Hayder Hamandi, "Modeling and Enhancing Deep Learning Accuracy in Computer Vision Applications", Date of defense: July 5, 2022.
- Sina Davani, "Design of Computer Vision Systems for Optimizing the Threat Detection Accuracy", Date of defense: November 16, 2021.

- Hussein M. Khairallah, “Remote Screening and Self-Monitoring for Vision Loss Diseases based on Smartphone Applications”, Date of defense: July 23, 2018.

- Yousef Sharrab, “Video Stream Adaptation in Computer Vision Systems”, Date of Defense: January 26, 2017.

- Kamal Nayfeh, “A Scalable Solution for Interactive Video Streaming”, Date of Defense: November 29, 2016.

- Musab Al-Hadrusi, “Design and Analysis of Scalable Video Streaming Systems”, March 18, 2013.

- Mohammad Alsmirat, “Maximizing Resource Utilization in Video Streaming Systems”, March 18, 2013.

- Bashar Qudah. "Enhanced Resource Sharing for Scalable Video-on-Demand Services". Date of Defense: January 26, 2009.

M.S. Theses Supervised

- Sina G. Davani, “Towards Optimal PTZ Camera Scheduling in Automated Video Surveillance”, Date of defense: December 18, 2017

- Loren Garavaglia, “Analysis of Cross-layer Optimization of Facial Recognition Accuracy in Automated Video Surveillance”, Date of defense: August 3, 2017

- Saleh Abdel-Gader Amareen, “Efficient Algorithms for Coding Unit Size Selection in HEVC Using Entropy and Number of Blocks”, Date of defense: January 7, 2015

- Jeffrey R. Ostrowski. “Characterization of Social Video”. Date of defense: September 15, 2008

Service on External Ph.D. Dissertation Committees

- External Evaluator, Ph.D. Dissertation, Simon Fraser University, Canada, Student Name: Mohammed Shatnawi, "Improving the Reliability of Online Multimedia Communication Services. Date of Defense: November 15, 2018

- External Committee Member, Ph.D. Dissertation, Computer Science, University of Ottawa, Student Name: Atif Alamri, Date of defense: June 30, 2010

Service on Other Ph.D. Dissertation Committees

- Saeedeh Makhsuci, “Power Amplifier Designs for 5G V2X Wireless Communications, and SDR Transmitter Development”, Department of Electrical and Computer Engineering, Date of Defense: September 24, 2024.

- Hussein Kokash, “Flow Instabilities and Vortical Dynamics Analysis in the Wake of Bluff Bodies: from Cylinders to Airfoils”, Department of Mechanical Engineering, Date of Defense: May 2024.

- Shiva Maleki Varnosfaderani, “Epilepsy Prediction based on Deep Learning Techniques”, Department of Electrical and Computer Engineering, Date of Defense: October 11, 2023.

- Shiva Maleki Varnosfaderani, “Epilepsy Prediction based on Deep Learning Techniques”, Department of Electrical and Computer Engineering, Date of Defense: October 11, 2023.

- Haysam M. Kadry, “Autonomous Spatiotemporal Magnetless Circulators for Full-Duplex Communication”, Department of Electrical and Computer Engineering, Date of Defense: October 18, 2022.

- Hamza Al-Maharmeh, “Energy-Efficient Mixed-Signal Techniques for Artificial Neural Network Accelerators in Edge Computing”, Department of Electrical and Computer Engineering, Date of Defense: October 14, 2022.

- Mostafa Daneshgar Rahbar, Ph.D. Dissertation, Department of Electrical and Computer Engineering, Date of Defense: October 16, 2020.

- Guoyao Xu, Department of Electrical and Computer Engineering, Date of Defense: February 8, 2019.

- Nasser Alkhaldi, Department of Electrical and Computer Engineering, Defense: January 24, 2019
- Kun Wang, Department of Electrical and Computer Engineering, Date of defense: November 23, 2015.

- Yuehai Xu, Department of Electrical and Computer Engineering, Date of defense: August 27, 2014

- Massoud Hassan Alatrash, Department of Electrical and Computer Engineering, Date of defense: October 24, 2013

- Xiangping Bu, Department of Electrical and Computer Engineering, Date of defense: June 25, 2013

- Xuechen Zhang, Department of Electrical and Computer Engineering, Date of defense: August 28, 2012

- Jiayu Gong, Department of Electrical and Computer Engineering, Date of defense: September 1, 2011

- Minghua Xu, Department of Electrical and Computer Engineering, Date of defense: August 30, 2010

- Atif Alamri, Department of Computer Science, University of Ottawa, Date of defense: June 30, 2010

- Nassim Khaled, Department of Mechanical Engineering, Date of defense: June 28, 2010

- Safwan Al-Omari, Department of Computer Science, Date of defense: December 17, 2008

- Mohammed Akkal, Department of Electrical and Computer Engineering, Date of defense: September 4, 2008

- Minghua Xu, Department of Electrical and Computer Engineering, Date of defense: December 6, 2006

- Song Fu, Department of Electrical and Computer Engineering, Date of defense: May 14, 2008

- Haiying Shen, Department of Electrical and Computer Engineering, Date of defense: March 29, 2006

- Jianbin Wei, Department of Electrical and Computer Engineering, Date of defense: July 10, 2006
- Xiliang Zhong, Department of Electrical and Computer Engineering, Date of defense: June 07, 2007

Service on Other M.S. Thesis Committees

- Tareq Dardona (Electrical and Computer Engineering), December 13, 2018

- Jianqiang Ou (Electrical and Computer Engineering), Date of defense: April 6, 2016
- Yudi Xie (Electrical and Computer Engineering), Date of defense: December 14, 2015
- David Wang (Electrical and Computer Engineering), Date of defense: November 3, 2010
- Mumtaz Dawoodi (Electrical and Computer Engineering), Date of defense: February 17, 2010
- Abdurrahman Arif (Electrical and Computer Engineering), Date of defense: January 29, 2009
- Renelius Bell (Electrical and Computer Engineering), Date of defense: November 17, 2008
- Jianbin Wei (Electrical and Computer Engineering), Date of defense: November 24, 2003
- Shixiang Zou (Electrical and Computer Engineering), Date of defense: October 29, 2004
- Abhishek Jindal (Electrical and Computer Engineering), Date of defense: June 30, 2004

Membership of Professional Societies

- **Senior Member**, IEEEE

Professional Activities

Service on Advisory Boards:

- Advisory Board Member, Engineering Programs, Henry Ford College.

Service to Professional Societies

- **Chair, Interest Group on Media Streaming**, IEEE Multimedia Communication Technical Committee, 2012 - 2014.

Editorships

- **Guest Editor**, *Multimedia Tools and Applications Journal*, *Special Issue on Real-time Multimedia Computing*, 65(2), July 2013. (With SooKyun Kim, Henry Duh, and Vladimir Hahanov)

- **Guest Editor**, Special Issue on Cloud Computing for Multimedia, IEEE COMSOC MMTC E-Letter, Vol. 8, No. 6, November 2013.

Editorial Board Memberships

- **Editor**, *ETRI Journal*, 2017 – now.

- **Associate Editor**, *IEEE Transactions on Circuits and Systems for Video Technology*, 2012-2015.

- **Co-Director, IEEE Multimedia Communication Technical Committee Review Board**, 2010 – 2012

- **Associate Editor**, The Journal of Future Game Technology, 2011-2015

Conference Organization

- Steering Committee Member, International Conference on Multimedia Computing, Networking and Applications (MCNA)

- **Chair**, ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV), 2018.

- **General Chair**, Fifth IEEE International Workshop on Quality of Experience for Multimedia Communications (QoEMC 2016), in conjunction with IEEE Globecom 2016, Washington DC, USA, December 8, 2016

- **Publicity Chair**, Workshop on Quality of Experience-based Management for Future Internet Applications and Services part of IEEE International Conference on Communications (ICC 2016), 2016

- **Chair**, Multimedia Computing and Communications (MCC) Symposium, 2015

- **Publicity Chair**, IEEE Workshop on Quality of Experience-based Management for Future Internet Applications and Services (QoE-FI), part of IEEE International Conference on Communications (IEEE ICC 2015), 2015

- **Co-Chair**, Technical Program Committee, International Conference on Computing, Networking and Communication (ICNC 2014), 2014

- **Chair**, Green Computing, Networking, and Communications Symposium (GCNC 2014), 2014

- **Publicity Chair**, The 2nd International Conference on Intelligent Information System and Technology (ICIIST 2014), 2014

- **Invited Speaker and Panel Co-Chair**, IEEE Globecom 2013 Workshop on Cloud Computing Systems, Networks, and Applications (CCSNA), 2013

- **Publicity Chair**, International Conference on Intelligence Fusion (ICIF2013), 2013

- **Session Chair**, IEEE International Symposium on Multimedia (ISM 2012), 2012

- **Publicity Chair**, International Conference on Computer Convergence Technology (ICCCT 2011), 2012
- **Chair**, 14th International Conference on Internet and Multimedia Systems and Applications (IMSA 2011), 2011

- **Session Chair**, 6th International Conference on Human-Computer Interaction (HCI), 2011

- **Session Chair**, International Conference on Advanced Research & Applications in Mechanical Engineering (ICARAME 2011), 2011.

- **Publicity Chair**, International Conference on Computer Convergence Technology (ICCCT 2011), 2011

- **Track Chair**, Distributed Multimedia Track, International Conference on Embedded and Multimedia Computing (EMC-10), 2010

- **Session Chair**, Multimedia Computing and Networking (MMCN), 2009

- **Session Chair**, SPIE/ACM Multimedia Computing and Networking (MMCN), 2008

- **Session Chair**, IEEE International Conference on Multimedia & Expo (ICME), 2008

- **Session Chair**, International Conference on Internet and Multimedia Systems and Applications (IMSA), 2004

- **Publicity Chair**, International Conference on Intelligence Fusion (ICIF2013), 2013

Service to Funding Agencies

- Proposal Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC), 2021
- Panelist, National Science Foundation (NSF, IIS Program), USA, 2014
- Panelist, National Science Foundation (NSF, NeTS Program), USA, 2014
- Grant Progress Reviewer, Strategic Network (Large Proposal), Natural Sciences and Engineering Research Council of Canada, Canada, 2013
- Reviewer, The Ontario Centres of Excellence, Canada, 2011
- Site Review Committee Member, Strategic Network (Large Proposal), Natural Sciences and Engineering Research Council of Canada, Canada, 2010
- Panelist, Phase II Contract Proposals, National Institute of Health (NIH)/ National Institute of Alcohol Abuse and Alcoholism (NIAAA), USA 2010
- Panelist, National Science Foundation (NSF), USA, 2010
- Panelist, National Science Foundation (NSF), USA, 2009
- Reviewer, Natural Sciences and Engineering Research Council, Canada, 2009
- Panelist, National Science Foundation (NSF), USA, 2008
- Panelist, Contract Proposals, National Institute of Health (NIH)/ National Institute of Alcohol Abuse and Alcoholism (NIAAA), USA, 2008
- Grant Proposal Reviewer, Kentucky Science and Technology Foundation R&D Excellence Program, USA, 2006

Other Services to Technical Journals and Magazines

- Reviewer, ACM Transactions on Multimedia Computing, Communications and Applications (TOMM), 2 papers, 2024
- Reviewer, Analog Integrated Circuits and Signal Processing, 2020

- Reviewer, SN Applied Sciences, Springer, 2020
- Reviewer, Transactions on Multimedia Computing, Communications and Applications (ACM TOMM), 2017 (2 papers)

- Reviewer, IEEE Transactions on Mobile Computing, 2017

- Reviewer, IEEE Transactions on Multimedia, 2016

- Reviewer, IEEE Transactions on Parallel and Distributed Systems, 2016

- Reviewer, Transactions on Multimedia Computing, Communications and Applications (ACM TOMM), 2015

- Reviewer, Science China, Information Sciences, 2014

- Reviewer, IEEE Internet Computing, 2014

- Reviewer, Transactions on Multimedia Computing, Communications and Applications (ACM TOMM), 2014

- Reviewer, ACM Transactions on Multimedia Computing Communications and Applications, Special Issue on Multiple Sensorial (MulSeMedia) Multi-modal Media: Advances and Applications, 2013

- Reviewer, IEEE Transactions on Parallel and Distributed Systems, 2013

- Reviewer, IEEE Communications Magazine, 2012

- Reviewer, ACM Transactions on Multimedia Computing Communications and Applications (3 papers), 2012

- Reviewer, IEEE Transactions on Parallel and Distributed Systems (2 papers), 2012

- Reviewer, Multimedia Systems Journal, 2012

- Reviewer, International Journal of Modeling and Simulation, 2012
- Reviewer, ACM Transactions on Multimedia Computing Communications and Applications, 2011

- Reviewer, IEEE Transactions on Parallel and Distributed Systems, 2011 (2 papers)

- Reviewer, Multimedia Systems Journal, 2011

- Reviewer, IEEE/ACM Transactions on Networking, 2010
- Reviewer, ACM Transactions on Multimedia Computing Communications and Applications (3 papers), 2010
- Reviewer, Multimedia Systems Journal, 2010
- Reviewer, Journal of Multimedia, 2010
- Reviewer, IEEE Multimedia Magazine, 2009
- Reviewer, IEEE Transactions on Parallel and Distributed Systems, 2009
- Reviewer, ACM Transactions on Multimedia Computing Communications and Applications (3 papers), 2009
- Reviewer, IEEE/ACM Transactions on Networking, 2009
- Reviewer, Journal of Advanced Media and Communication, 2009
- Reviewer, Elsevier Information Systems, 2009
- Reviewer, ACM Transactions on Multimedia Computing Communications and Applications, 2008
- Reviewer, IEEE Transactions on Parallel and Distributed Systems, 2008
- Reviewer, IEEE Multimedia Magazine, 2007
- Reviewer, IEEE Transactions on Multimedia (2 papers), 2007
- Reviewer, IEEE Transactions on Parallel and Distributed Systems, 2007
- Reviewer, ACM Transactions on Knowledge and Data Engineering, 2007
- Reviewer, ACM Transactions on Multimedia Computing Communications and Applications, 2007 (2 papers)
- Reviewer, IEEE Transactions on Computers (2 papers), 2006
- Reviewer, IEEE Transactions on Parallel and Distributed Systems, 2006
- Reviewer, IEEE Signal Processing Letters, 2006
- Reviewer, IEEE Transactions on Computers, 2005

- Reviewer, IEEE Transactions on Multimedia, 2005
- Reviewer, Journal of Parallel and Distributed Computing (JPDC), 2004

Other Conference Service

- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2026
- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2025
- Technical Program Committee Member, ACM Multimedia Systems 2024
- Technical Program Committee Member, ACM Multimedia, 2023
- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2023
- Technical Program Committee Member, ACM Multimedia, 2020
- Technical Program Committee Member, ACM Multimedia, 2019
- Technical Program Committee Member, IEEE International Conference on Multimedia and Expo (ICME), 2019
- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2018
- Technical Program Committee Member, IEEE International Conference on Multimedia and Expo (ICME), 2018
- Technical Program Committee Member, ACM Multimedia, 2017
- Technical Program Committee Member, IEEE International Conference on Multimedia and Expo (ICME), 2017
- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2017
- Technical Program Committee Member, ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV), 2017.
- Technical Program Committee Member, ACM Workshop on Mobile Video (MoVid), 2017.

- Technical Program Committee Member, IEEE International Conference on Multimedia & Expo (ICME), 2016
- Technical Program Committee Member, ACM Multimedia, 2016
- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2016
- Technical Program Committee Member, ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV), 2016
- Technical Program Committee Member, ACM Workshop on Mobile Video (MoVid), 2016.
- Technical Program Committee Member, IEEE Workshop on Quality of Experience-based Management for Future Internet Applications and Services (QoE-FI), part of IEEE International Conference on Communications (IEEE ICC), 2015
- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2015
- Technical Program Committee Member, IEEE International Conference on Multimedia & Expo (ICME), 2015
- Technical Program Committee Member, ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV), 2015
- Technical Program Committee Member, ACM Workshop on Mobile Video (MoVid), 2015
- Technical Program Committee Member, The International Conference on Digital Telecommunications (ICDT), 2015
- Technical Program Committee Member, IEEE International Conference on Multimedia & Expo (ICME 2014), 2014
- Technical Program Committee Member, ACM Workshop on Mobile Video (MoVid), 2014
- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2014
- Technical Program Committee Member, The International Conference on Digital Telecommunications (ICDT), 2014
- Panelist, ACM Workshop on Mobile Video (MoVid), 2013

- Technical Program Committee Member, IEEE International Conference on Multimedia & Expo (ICME 2013), 2013
- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2013
- Technical Program Committee Member, ACM Workshop on Mobile Video (MoVid), 2013
- Technical Program Committee Member, International Conference on Advances in Computing, Communications and Informatics (ICACCI-2013), 2013
- Technical Program Committee Member, The Eighth International Conference on Digital Telecommunications (ICDT 2013), 2013
- Technical Program Committee Member, IEEE International Conference on Multimedia & Expo (ICME 2012), 2012
- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2012
- Technical Program Committee Member, ACM Workshop on Mobile Video (MoVid'12), 2012
- Technical Program Committee Member, The Seventh International Conference on Digital Telecommunications (ICDT 2012), 2012
- Technical Program Committee Member, ACM Multimedia, 2011
- Technical Program Committee Member, International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2011), 2011
- Technical Program Committee Member, IEEE International Conference on Multimedia & Expo (ICME 2011), 2011
- Technical Program Committee Member, International Workshop on Pervasive Computing and Multimedia Systems (IEEE-PCMS 2011), 2011
- Technical Program Committee Member, Sixth International Conference on Digital Telecommunications (ICDT 2011), 2011
- Technical Program Committee Member, IEEE Wireless Communications and Networking Conference (IEEE WCNC 2011), 2011

- Technical Program Committee Member, International Workshop on Semantic Computing and Multimedia Systems (IEEE-SCMS), 2010

- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2011

- Technical Program Committee Member, ACM Multimedia, 2010

- Technical Program Committee Member, International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2010), 2010

- Technical Program Committee Member, ACM Multimedia Systems (MMSys), 2010

- Technical Program Committee Member, ACM Multimedia, 2009

- Technical Program Committee Member, AfricaIMSA2010, 2010

- Technical Program Committee Member, IEEE Wireless Communications and Networking Conference (IEEE WCNC 2010), 2010

- Technical Program Committee Member, Multimedia Computing and Networking (MMCN), 2009

- Technical Program Committee Member, International Workshop on Semantic Computing and Multimedia Systems (SCMS), 2009

- Technical Program Committee Member, ACM Multimedia, 2008
- Panelist, "Content Distribution (P2P versus Infrastructure) and the Mobil Age", SPIE/ACM Multimedia Computing and Networking (MMCN), 2008

- Technical Program Committee Member, World Wide Web Conference (WWW), 2006

- Technical Program Committee Member, World Wide Web Conference (WWW), 2005

- Technical Program Committee Member, International Conference on Internet and Multimedia Systems and Applications (IMSA), 2009

- Technical Program Committee Member, International Conference on Optical and Wireless Communications (WOC), 2009

- Technical Program Committee Member, International Conference on Distributed and Intelligent Multimedia Systems (DIMS), 2008

- Technical Program Committee Member, International Conference on Optical and Wireless Communications (WOC), 2008

- Technical Program Committee Member, International Conference on Internet and Multimedia Systems and Applications (IMSA), 2008

- Technical Program Committee Member, International Conference on Optical and Wireless Communications (WOC), 2007

- Technical Program Committee Member, International Conference on Internet and Multimedia Systems and Applications (IMSA), 2007

- Technical Program Committee Member, International Workshop on Systems and Network Security (SANS), 2005

- Reviewer, IEEE Wireless Communications and Networking Conference (WCNC), 2007

- Reviewer, IEEE International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS), 2006

- Reviewer, IEEE Wireless Communications and Networking Conference (WCNC), 2005

- Reviewer, International Parallel and Distributed Processing Symposium (IPDPS), 2003

- Reviewer, International Conference on Parallel Processing (ICPP), 2001

Service to External Universities

- External Reviewer, Master of Science Program in Computer Engineering, University of Michigan – Dearborn, February 2024.

- External Tenure and Promotion Evaluator, Oakland University, 2020

- External Evaluator, Ph.D. Dissertation, Simon Fraser University, Canada, Student Name: Mohammed Shatnawi, "Improving the Reliability of Online Multimedia Communication Services. Date of Defense: November 15, 2018

- External Reviewer, Faculty Reappointment, Oakland University, 2017

- External Reviewer, Tenure and Promotion Faculty Application, University of Michigan-Dearborn, 2013

- External Ph.D. Dissertation Committee Member, Computer Science, University of Ottawa, Student Name: Atif Alamri, Date of defense: June 30, 2010

Service to Publishers

- Book Reviewer, Thomson Learning, High Holborn House, London, Book Title: "Foundations of Multimedia, by Michael Macaulay", 2007.

- Book Proposal Reviewer, Elsevier, 2015

Service on University Committees

- Member, **WSU Academy of Teachers**, since Fall 2022.

- Member, President's Award for Excellence in Teaching Selection Committee, Winter 2012
- Member, University Educational Development Grant, Winter 2014

- Member, University Academic Senate, Fall 2008 – Winter 2010.

- Member, University Facilities, Support Services, and Technology Committee, Fall 2008 – Winter 2010.

- Member, College of Engineering Director of Business Search Committee, Fall 2009 – Winter 2010.

- Member, University Graduate Professional Fellowship Review Panel, 2008

College/Department Committee Chaired

- **Overall Coordinator**, Interdisciplinary M.S. in AI Program, College of Engineering, Wayne State University, Detroit, August 2022 – Now.

- **Director**, Interdisciplinary M.S. in AI Program (Systems and Hardware Track), College of Engineering, Wayne State University, Detroit, August 2022 – Now

- **Team Leader of college efforts to develop the interdisciplinary M.S. in AI Program**, 2021 – current

- **Chair**, Computer Engineering Area Committee, 2017 – current.
- **Coordinator,** Computer Engineering Graduate Programs, 2021 – current
- Coordinator, Prelim Exam Committee on Computer Organization, since 2003
- Coordinator, Prelim Exam Committee on Data Structures and Algorithms, since 2015
- **Chair,** Faculty Search Committee, 2017/2018
- **Chair**, College Faculty Assembly, Fall 2010 – Winter 2012
- **Director of the Graduate Program** and the **Chair of Graduate Committee**, Electrical and Computer Engineering Department, August 2011 - January 2013.
- **Chair**, College Bylaws Subcommittee, Fall 2011 - Winter 2012.
- **Chair**, Graduate Committee, August 2011 – January 2013
- **Chair**, Computer Engineering Taskforce, 2014- 2016

College Committee Membership

- Member College Academic Operations Committee, 2022/2023, 2021/2022, 2020/2021, 2019/2020
- Member, College Ranking/Reputation Committee, 2020/2021
- Member, ECE-CS Curriculum Collaboration Committee, 2015/2016 – 2017/2018.
- Member, ECE-CS Curriculum Collaboration Committee, 2015/2016 – Current
- Member, College Graduate Program Committee, 2012 - 2014.
- Member, College Faculty Assembly Executive Committee, Fall 2008 – Winter 2010
- Member, Director of Business Affairs Search Committee, Fall 2009 – Winter 2010

- Member, College of Engineering Distance Learning Task Force, Winter 2010
- Member, College of Engineering Strategic Planning, Winter 2010.
- Member, College Computer Advisory Committee, 2003-2004, 2005-2006, 2006-2007, 2007-2008
- Member, College Retention Committee, 2006-2007

Department Committee Membership

- Member, Salary Committee, 2024/2025, 2023/2024, 2022/2023. 2020/2021
- Member, Faculty Search Committee, 2019/2020, 2016/2017
- Member, Graduate Curriculum Committee, almost regularly since 2003
- Member, Salary Committee, 2020/2021
- Member, ECE Budget Advisory Committee, 2015/2016
- Member, Undergraduate Curriculum Committee, 2024/2025, 2022/2023, 2004- 2016.
- Member, ECE Future Directions Taskforce, 2014/2015, 2014/2016
- ECE Seminar Coordinator, 2014/2015
- IEEE Faculty Counselor, 2006 – 2014
- Member, Tenure, Promotion, Budget, and Salary Committee, 2006-2007
- Member, Faculty Search Committee, 2004-2005, 2005-2006

Community Outreach

- Organized a four-day “AI Adventures Course: Python Programming for Artificial Intelligence” Workshop for Metro-Detroit School Students, Wayne State University, Summer 2025.

- Organized and taught a two-day “Python Programming” workshop, World Peace Association, Redford, Michigan, Summer 2025.

- Organized a four-day “AI Adventures Course: Python Programming for Artificial Intelligence” Workshop for Metro-Detroit School Students, Wayne State University, Summer 2024.

- Organized a two-day computer technology symposium, called "*Demystify Your Digital Life*" to promote STEM by targeting high school students, teachers, and parents, as well as new WSU students (with more than 80 attendees), Wayne State University, April 14 and April 19, 2021.

- Was featured in "Experts Weigh in on Current Job Market Trends", Zippia, March 11, 2021.

- Gave a School Presentation, “*Demystifying Artificial Intelligence for Kids: How to teach computers how to do things?*”, STEM Night, IIA School, Detroit, MI, Sept. 26, 2019.

- Organized a two-day computer technology symposium, called “*Demystify Your Digital Life*”, for high school students, their parents, and first- and second-year engineering students (with more than 65 attendees each day), Wayne State University, April 2008.