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Overview

A highly motivated detail-oriented professional with excellent organizational and results-oriented abilities. My educational background and diverse experiences have provided me with wide knowledge and a strong set of skills that allow me to contribute to many fields of image processing – based Machine Learning (ML) and how it may be used to characterize various materials’ degradations, digital video, and VLSI design (algorithmic and architecture levels), FPGA, smart traffic system design, cybersecurity based Additive Manufacturing, and Internet of Video Things (IoVT).

Research Interest:

- **Machine-Learning Models for Corrosion Classification Levels:** Developed machine learning-based algorithms to inspect and determine undesirable alloy phases distributed along grain boundaries for the Al-5XXX series. These machine-learning algorithms can detect different levels of corrosion for such alloy series.
- **Agriculture–Based Image Processing and Machine Learning:** Develop a system that can monitor and determine the effect of adding chemical materials to plants and soils. This work can be extended to characterize various materials’ degradations.
- **Machine Vision–based Detection and Measurement of Welding Scene Features:** Developed machine vision-based algorithms to detect geometric measurements of arc welding scene features using Carderock’s patented attenuated-long wave infrared radiation imaging technique.
- **Smart traffic-Based Artificial Intelligence (AI) and Machine Learning:** Develop smart systems-based Deep Learning algorithms that can automatically count different objects. Such systems and algorithms are very helpful in designing new smart cities.
- **Internet of Video Things (IoVT):** Design video surveillance systems, for homeland security applications that match the allowed hardware complexity of the Internet of Video Things (IoVT) infrastructure.
- **Digital Video Processing Algorithms/Architectures levels:** Develop video processing algorithms and architectures. My research involves Video Compression algorithms and architectures, specifically Motion Estimation and Compensation, DCT transform, and Vector Quantization.
- **VLSI and FPGA Design (Low-Power and High-Speed Performance Embedded Systems):** Design video systems taking into consideration optimizing the encoding speed and studying the effect on both the area and power consumption of the designed systems. Systems are tested and implemented in either FPGA or ASIC flow design.
- **Wireless and Digital Communication Systems:** Design several techniques and systems that help in compressing the transmitted bit-rate of a speech signal over wireless communication channels.

Education

- **Ph.D.** Computer Engineering. University of Louisiana at Lafayette, Lafayette, LA, USA, 2010. Dissertation Title: “Efficient Smart Algorithms and Architectures for Real-time Video Transmission in Pixel and Frequency Domains”.
- **M.S.** Computer Engineering. University of Louisiana at Lafayette, Lafayette, LA, USA, 2007.
- **M.S.** Electrical Communication Engineering. Mansoura University, Mansoura, Egypt, 2002.
- **B.Sc.** Electronics Engineering. Mansoura University, Mansoura, Egypt, 1999.

Honors and Awards

- Tenure and promotion in the Electrical Engineering Department at Southern University and A&M College on June 24, 2022. Promotion from Assistant to Associate Professor. Please see the recording from min 26 to min 33: <https://www.youtube.com/watch?v=yMEeVM372TE&t=1669s>
- The 2019 Partnering, Research, Innovation, Development, and Entrepreneurship award (P. R. I. D. E) by Southern University and A&M College – USA.
- Listed in Marquis Who's Who in America 2009 and 2010.
- Third place winner in “the student paper contest” at the University of Louisiana at Lafayette in 2009 and 2008.
- Honored Student, The University of Louisiana at Lafayette Honors Convocation Committee (2006) and (2007).
- First Rank Graduate in MS, Mansoura University, Mansoura, Egypt (2003).
- Second Rank Graduate in BS, Mansoura University, Mansoura, Egypt (1999).

Appointments and Teaching Experience

- **June 24 to Present: Associate Professor**, Southern University and A&M College, Department of Electrical Engineering, Baton Rouge, LA, USA.
- **April 21, 2022 – April 20, 2024: Faculty Senator** on behalf of the College of Sciences and Engineering, Southern University and A&M College
- **August 2017 to June 2022: Assistant Professor**, Southern University and A&M College, Department of Electrical Engineering, Baton Rouge, LA, USA.
- **July 2016 to July 2017: Assistant Professor**, Mansoura University, Electronics and Communications Department, Egypt,
- **September 2016 to June 2017: Adjunct Assistant Professor**, Zewail City of Science and Technology - University of Science and Technology - Zewail City, Egypt.
- **September 2012 to June 2016: Assistant Professor**, University of Bahrain, Computer Engineering Department, Kingdom of Bahrain.
- **October 2010 to July 2012: Assistant Professor**, Umm Al-Qura University, Computer Science Department, Makkah, Kingdom of Saudi Arabia.
- **January 2005 to May 2010: Teaching Assistant**, College of Engineering – Electrical and Computer Engineering Department, University of Louisiana at Lafayette (ULL), Lafayette, LA, USA.
- **January 2001 to January 2005: Teaching Assistant**, Mansoura University, Electronics and Communications Department, Egypt.

Courses Taught

- computer Networks
- Microprocessors, Computer Design, and Implementation
- Digital Logic Design Circuits
- Design and Analysis of Algorithms
- Electromagnetic Waves
- Signals and Systems
- Digital communication system
- Electrical Circuits I/II
- VLSI design of embedded systems
- Computer Architecture and Organization
- Electronics I/II/III
- Digital Signal Processing
- Programming Languages
- Image Processing and Computer Vision
- Troubleshooting
- Robotic Design and Implementation - Mechatronics
- An Introduction to Cybersecurity
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Pending Grant

- Sustainable Transportation Research Center with High-Performance-Smart-Materials – U.S. Department of Transportation (2022-2027), (Role: Co-PI) (\$ 1,650,000)
- Excellence in Research: Drowsiness, and Drunk Drivers Detection-Based Machine Learning (D4-ML) System – National Science Foundation (NSF) (2023 – 2026), (Role: PI) (\$ 554,904)
- IBM Masters Fellowship Award Recipients, 2021-2022. (Role: Supervise undergraduate student; Chinwe Aghadinuno). (\$12,500)
- Targeted Infusion Project: Re-Implementing A Successful STEM Educational Model in the Electrical Engineering Program at Southern University and A&M College – National Science Foundation (NSF) (2023 – 2026), (Role: PI)

Awarded Grant

- HEERF Graduate Research Assistantship 2021-2022. (Role: Supervise and mentor a graduate student; Sri Divya Reddy Mettu. (\$16,800)
- Using Sensor Networks and Machine Learning to Characterize Agricultural Responses to Stimuli – Funded by US Federal Government (2021 – 2023), BAA ID#: CGR-2020-0001-P1. (Role: Co-PI) (\$ 350,000)
- IBM Masters Fellowship Award Recipients, 2021-2022. (Role: Supervise undergraduate student; Ebenezer Essel). (\$12,500)
- High-Fidelity Fatigue, Drowsiness, and Drunk Drivers Detection (FD4) System, - Funded by Louisiana Transportation Research Center (LTRC) (2021 – 2022), (Role: PI) (\$ 30,000)
- Supervised Undergraduate Research Experiences (SURE) Competition, BOARD OF REGENTS, Baton Rouge 2020-2021. (Role: Supervise undergraduate student; LaBrea Brumfield). (\$5,000)
- Supervised Undergraduate Research Experiences (SURE) Competition, BOARD OF REGENTS, Baton Rouge 2020-2021. (Role: Supervise undergraduate student; Dailynn Thomas). (\$5,000)
- Enhancing Computer Engineering and Big Data Education (CEBDE) at Southern University and A&M College, Microsoft Impact2020 (2020 – 2021). (Role: Co-PI) (\$ 200,000).
- Enhancing Additive Manufacturing Education with Cybersecurity and Virtual Reality – Funded by the National Science Foundation (NSF) (2019 – 2024), Award Id: 1915520. (Role: Senior Investigator) (\$1.65 Million)
- Targeted Infusion Project: A Computer Engineering Research Lab (CERL) at Southern University and A&M College (SUBR) – Funded by the National Science Foundation (NSF) (2019 – 2021), Award Id: 1912397. (Role: PI) (\$ 396,190)
- Evaluation of Counting Device for Pedestrians and Bicyclists - Funded by Louisiana Transportation Research Center (LTRC) (2018 – 2019), Award Id: LTRC 19-1SA. (Role: PI) (\$ 85,792)
- Automatic Recognition of Arabic handwriting in Historical Manuscripts - Funded by the King Abdul-Aziz City for Science and Technology (KACST) (2014 - 2015). (Role: Co-PI) (\$ 379,337)
- Fast and Smart Security Cameras for Video Surveillance systems in Hajj Rites – Funded by The Custodian of the Two Holy Mosques Institute of Hajj researches – KSA (2014-2015). (Role: PI) (\$ 35,000)
- ASIC Design of a Low Complexity High-Speed H.265/HEVC for Wireless Transmission Video Surveillance System - Funded by University of Bahrain (2014 -2015). (Role: PI) (\$ 13,297)
- Fast video surveillance system for Hajj rites security - Funded by the Transportation and Crowd Management Center of Research Excellence (2014 - 2015). (Role: PI) (\$ 26,595)
- US-Bahrain Cooperative Research with Central Michigan University: Intelligent Video Surveillance Systems for Hajj — Funded by the National Science Foundation (NSF) (2013 – 2014), Award Id: 1341126. (Role: Co-PI) (\$ 36,649)
- Fast Video Surveillance system for roadway security monitoring — Funded by University of Bahrain (2012 - 2013). (Role: PI) (\$ 13,297)
- Desktop and Mobil-phone Secure Backup System hosted on a Storage Cloud — Funded by the Center of Research for Hajj and Omrah – Kingdom of Saudi Arabia (KSA) (2011 - 2012). (Role: Co-PI) (\$ 132,978)

Ph.D. Students Supervision

- Eman AbdelAziz, “**To be announced – thesis will be in Data – Mining**”, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt, Expecting graduation in (2024).
- Opeyemi P. Ojajuni, “**Fostering 21st-Century Skills and Computational Skills in Science, Technology, Engineering, and Mathematics (STEM) Students Using the Internet of Things (IoT) Technology**”, Southern University and A&M College, Electrical Engineering Department, Expecting graduation in (2024).
- Sri Divya Reddy Mettu, “**Assessing the Computer Science (CS) Under-Graduate Students Attitudes towards Virtual Reality (VR) tool to Promote Computational Thinking (CT) and Programming Skills (PS) using Sentiment Analysis**”, Southern University and A&M College, Electrical Engineering Department, Expecting graduation in (2024).

Master Students Supervision

- Ebenezer Kojo Essel, “**Real-Time Driver Drowsiness Detection Using Thresholding and Machine Learning Classification**”, Southern University and A&M College, Electrical Engineering Department, Expecting graduation in Fall (2022).
- Akodu Moruf Olagunju, “**The application of Machine learning algorithms in healthcare classification: Prostate Cancer as a case study**”, Southern University and A&M College, Electrical Engineering Department, Graduated in Spring (2022).
- Sunday Bezaleel Anwansedo, “**Using Mobile-Based Application for Healthcare Management In Sub-Sahara Africa: A Case Study of Covid-19 Vaccine Distribution**”, Southern University and A&M College, Electrical Engineering Department, (2021).
- Surya Veera Reddy Sirigireddy, “**Predicting Material Composition by Analyzing Color in Copper Silver Gold Alloys**”, Southern University and A&M College, Electrical Engineering Department, (2021).
- Willson Junior Meli Ngong, “**Video-Based Automated Pedestrians Counting Algorithms for Smart Cities**”, Southern University and A&M College, Electrical Engineering Department, (2020).
- Ali H Al Majed, “**Smart Detection Algorithms Under Different Weather Conditions**”, Southern University and A&M College, Electrical Engineering Department, (2020).
- Raja Naga Rahul Paramkusam, “**Synthesis and Analytical Characterization of Graphene Oxide and Reduced Graphene Oxide for Gas Sensing Applications**”, Southern University and A&M College, Electrical Engineering Department, (2019).
- De’Shon Swafford, “**Fabrication of Zinc Oxide Varistor used in Gas Sensing Application**”, Southern University and A&M College, Electrical Engineering Department, (2019).
- Yeshak A. Dabels, “**Miniaturization of Chemical Identification bY Magnetoelastic Sensing (ChIMES) Technology**”, Southern University and A&M College, Electrical Engineering Department, (2018).
- Mohamed Nabil Hammad, “**High-Speed On-Chip Motion Estimation Co-Processor for H.265/HEVC Standard**”, University of Bahrain, Computer Engineering Department, (2016).

Publications

Selected Journal Papers

1. Jacob Steiner and **Yasser Ismail**, “Predicting the degree of sensitization of AA5456 alloys through convolution neural networks using microstructural images”, ready to be submitted in 2023.
2. Olagunju Akodu, Fred Lacy, Wael Elmedany, and **Yasser Ismail**, “Application of machine learning algorithms in healthcare classification: Prostate cancer as a case study”, ready to be submitted in 2023.
3. Surya Sirigireddy, **Yasser Ismail**, and Sudhir Trivedi, “Predicting Material Composition by Analyzing Color in Copper Silver Gold Alloys”, ready to be submitted in 2023.
4. Yasser Ismail, Phyllis Okwan, Albertha Lawson, and Fred Lacy, “Successful Educational Model for Improving Practical Skills of STEM Students at a Historically Black University”, Submitted to Journal of

5. Mahmoud Darwich, **Yasser Ismail**, Talal Darwich, and Magdy Bayoumi” Cost Minimization of Cloud Services for On-Demand Video Streaming” published in SN Computer Science Springer Journal, April 2022. <https://doi.org/10.1007/s42979-022-01140-x>
6. **Yasser Ismail**, Mohamed Hammad, Mahmoud Darwichand, and Wael Elmedany “Homeland Security Video Surveillance System Utilizing the Internet of Things (IoT) for Smart Cities” IET Computers & Digital Technique journal, Volume 15, Issue 4, Pages: 241-319, 04 April 2021.
7. Willson Meli, Fred Lacy, and **Yasser Ismail** “Video-Based Automated Pedestrians Counting Algorithms for Smart Cities” International Journal of Computing and Digital Systems (IJCDS), 2020.
8. Ali Al Majed, Fred Lacy, and **Yasser Ismail** “Smart Detection Under Different Weather Conditions” International Journal of Computing and Digital Systems (IJCDS), 2020.
9. Yeshak Dabels, **Yasser Ismail**, and Fred Lacy “CHIMES: Chemical Identification by Magneto Elastic Sensing” International Journal of Computing and Digital Systems (IJCDS), vol. 9, issue 4, July 2020.
10. Opeyemi Ojajuni, **Yasser Ismail** and Albertha Lawson, “Distributed Denial-of-Service (DDoS) Attack Detection and Mitigation for Internet of Things (IoT)” International Journal of Technology Diffusion (IJTD), 2020.
11. Chase Richardson, Ali Ghawwas, **Yasser Ismail**, Raynaud Henton, and Jiecai luo, " Multiple Smart Phones Inductive Charging Station System " International Journal of Computing and Digital Systems (IJCDS), vol. 7, issue. 6, November 2018.
12. Samar Ali, Ashraf Badawi, and **Yasser Ismail**, “Adaptive Multi-connection Scalable Video Coding for Wireless Area Networks,” International Journal of Computing and Digital Systems (IJCDS), vol. 7, issue. 3, May 2018.
13. **Yasser Ismail**, “6-DOF Robotic Arm Using Haptic Feedback Wired and Wireless Platforms,” International Journal of Computing Network Technology (IJCNT), vol. 4, issue. 2, May 2016.
14. **Yasser Ismail**, “FPGA Implementation of Fast and Efficient CODEC for H.264/AVC Real-Time Video Applications,” International Journal of Technology Diffusion (IJTD) - USA, vol. 7, issue. 1, March 2016.
15. **Yasser Ismail**, “A cost-effective Programmable SoC for H.265/HEVC Full Search Motion Estimation using Xilinx ZYNQ-7 ZC706 FPGA,” International Journal of Computing Network Technology (IJCNT), vol. 4, issue. 1, January 2016.
16. **Yasser Ismail**, Ahmed Abdelgawad, Sherif El-etriby, “High-speed on-chip multiple cosine transform generator,” Journal of Real-Time Image Processing, Springer, ISSN: 1861-8200, DOI 10.1007/s11554-015-0528-0, (print version), and ISSN: 1861-8219 (electronic version), September 2nd, 2015.
17. **Yasser Ismail**, “A complete Verification of a Full Search Motion Estimation Engine,” International Journal of Computing and Digital Systems, 2015. Int. J. Dig. Sys. 4, No. 4, pp. 221-232, Oct. 2015.
18. **Yasser Ismail**, “High-Speed Transform Coding on Chip for Wireless Video Surveillance Systems,” International Journal of Computing and Digital Systems, 2015. Int. J. Dig. Sys. 4, No. 2, pp. 81-89, Apr. – 2015.
19. **Yasser Ismail**, Wael El-Medany, Hessa Al-Junaid, and Ahmed Abdelgawad, “High-Performance Architecture for Real-time HDTV Broadcasting”, Journal of Real-Time Image Processing, Springer, Volume 11, Issue 4, pp 633–644, ISSN: 1861-8200 (print version), and ISSN: 1861-8219 (electronic version), May 27, 2014.
20. **Yasser Ismail**, “A Fast Diamond Motion Estimation Search Algorithm for Real-Time Video Applications”, International Journal of Computing and Digital Systems, Dig. Sys. 3, No. 2, pp. 101-110, May 1st, 2014.

21. **Yasser Ismail**, "A Novel Lattice Architecture for High-Speed Discrete MultiTone (DMT) Modulation", International Journal of Computing and Digital Systems, Dig. Sys. 2, No. 2, pp. 11-18, April 2013.
22. **Yasser Ismail**, Jason McNeely, Mohsen Shaaban, and Magdy A. Bayoumi, "Fast Motion Estimation Algorithm Using Dynamic Models for H.264 Video Coding," IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), Volume 22, Issue 1, pp. 28 – 42, January 2012.
23. Sumeer Goel, **Yasser Ismail**, and Magdy A. Bayoumi, " High-speed Motion Estimation Architecture for Real-time Video Transmission," Oxford Journals - The Computer Journal (2012) 55(1): 35-46 first published online April 29, 2011.
24. **Yasser Ismail**, Mohsen Shaaban, Jason McNeely, and Magdy A. Bayoumi, "An Efficient Adaptive High-Speed Manipulation Architecture for Fast Variable Padding Frequency Domain Motion Estimation," IEEE Transactions on Very Large Scale Integration (VLSI) Systems. Volume: PP, Issue: 99, pp. 1 – 10, 2010.
25. **Yasser Ismail**, Mohamed Elgamel, and Magdy Bayoumi, "Fast Variable Padding Motion Estimation Using Smart Zero Motion Prejudgment technique for Pixel and Frequency Domains," IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), Volume 19, Issue 5, pp. 609 – 626, May 2009.

Project Reports

1. **Yasser Ismail**, Fred Lacy, and Phyllis Okwan, "Targeted Infusion Project: Establishment of a Computer Engineering Research Lab (CERL) at Southern University and A&M College", Final report (2023 – 2026) published by National Science Foundation (NSF) – September 2022.
https://www.nsf.gov/awardsearch/showAward?AWD_ID=1912397
2. **Yasser Ismail**, "High-Fidelity Fatigue, Drowsiness, and Drunk Drivers Detection (FD⁴) System" Final report (2021-2022) – Louisiana Department of Transportation and Development (LTRC Project Number: 22-2TIRE) – June 2022. https://www.ltrc.lsu.edu/pubs_final_reports.html#tire
3. **Yasser Ismail** "Evaluation of Counting Device for Pedestrians and Bicyclists", Final report (2019-2020) published by – March 2021. https://www.ltrc.lsu.edu/pubs_annual_reports.html#

Books

1. **Yasser Ismail**, et al., " Cloud Computing - New Perspectives for AI and Cybersecurity" to appear in IntechOpen, 2023.
2. **Yasser Ismail**, et al., " Internet of Things (IoT) for Automated and Smart Applications" IntechOpen, ISBN: 978-1-78984-096-4, Website: <https://www.intechopen.com/books/internet-of-things-iot-for-automated-and-smart-applications>, 2019.
3. **Yasser Ismail** and M. Bayoumi, "Smart Algorithms and Architectures for Real-Time Video Transmission," VDM Verlag, Saarbrücken, ISBN-NR.: 978-3-639-34323-6, Germany, 2011.

Book Chapter

1. Book title: Cloud Computing - New Perspectives for AI and Cybersecurity
Chapter title: Introductory Chapter: Cloud Computing Applications – based AI and Cybersecurity
Authors: Yasser Ismail to appear in IntechOpen, 2023.
2. Book title: Smart Algorithms and Architectures for Real-Time Video Transmission
Chapter title: Introductory Chapter: Internet of Things (IoT) Importance and Its Applications
Authors: Yasser Ismail
3. Book title: The Future of Television - Convergence of Content and Technology
Chapter title: High-Efficient Video Transmission for HDTV Broadcasting
Authors: Yasser Ismail
4. Book title: Search Algorithms (ISBN 980-953-307-672-5)
Chapter title: Fast Motion Estimation System Using Dynamic Models for H.264/AVC Video Coding
Authors: Yasser Ismail
5. Book title: Search Algorithms and Applications (ISBN 978-953-307-483-2)

Selected Conference papers

1. wafa alzuabi, **Yasser Ismail**, and Wael Elmedany “Privacy and Security Issues in Blockchain-based IoT Systems: Challenges and Opportunities”, Accepted in the International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT 2022), Bahrain, November 20-21, 2022. <http://iiict.uob.edu.bh/3ict22/>
2. Noora Alromaihi, **Yasser Ismail**, and Wael Elmedany “Literature Review of Blockchain-based Cloud Computing: Data Security Issues and Challenges”, Accepted in the International Conference on Data Analytics for Business and Industry, Bahrain, October 25-26, 2022. <https://data.uob.edu.bh/>
3. Ebenezer Essel, Fred Lacy, Wael Elmedany, Fatema Albalooshi, and **Yasser Ismail**, “Driver Drowsiness Detection using Fixed and Dynamic Thresholding”, Accepted in the International Conference on Data Analytics for Business and Industry, Bahrain, October 25-26, 2022. <https://data.uob.edu.bh/>
4. Ebenezer Essel, Langston Fogg, and **Yasser Ismail**, "Driver Drowsiness Detection using Machine Learning Models", LS-PAC Models 2022 Diversity in STEM Conference, July 21 - 23, New Orleans, 2022.
5. Mahmoud Darwich, **Yasser Ismail**, Talal Darwich, and Magdy Bayoumi “Improving Hierarchy Storage for Video Streaming in Cloud” IEEE Virtual World Forum on Internet of Things, New Orleans, 2021.
6. M. Hammad, W. Elmedany and **Y. Ismail**, "Design and Simulation of AES S-Box Towards Data Security in Video Surveillance Using IP Core Generator," 2021 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT), 2021, pp. 469-476, doi: 10.1109/3ICT53449.2021.9581825.
7. M. Hammad, W. El-medany and **Y. Ismail**, "Intrusion Detection System using Feature Selection With Clustering and Classification Machine Learning Algorithms on the UNSW-NB15 dataset," the 2020 International Conference on Innovation and Intelligence for Informatics, Computing and Technologies (3ICT), 2020, pp. 1-6, doi: 10.1109/3ICT51146.2020.9312002.
8. Mahmoud Darwich, **Yasser Ismail**, Talal Darwich, and Magdy Bayoumi “Cost-Efficient Storage for On-Demand Video Streaming on Cloud” IEEE Virtual World Forum on Internet of Things, New Orleans, 2020.
9. Opeyemi Ojajuni, **Yasser Ismail**, and Albertha Lawson “Distributed Denial-of-Service (DDoS) Attack Detection and Mitigation for Internet of Things (IoT),” 76th Joint Meeting of BKK and NIS, Beta Kappa Chi and National Institute of Science, March 28-30, 2019 - Atlanta, GA.
10. **Y. Ismail**, M. Hammad, and W. El-Medany, "Homeland Security Video Surveillance System for Smart Cities," 2018 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT), 2018, pp. 1-4, doi: 10.1109/3ICT.2018.8855732.
11. Md Anam Mahmud, Ahmed Abdelgawad, Kumar Yelamarthi, and **Yasser A. Ismail**, " Signal Processing Techniques for IoT-based Structural Health Monitoring," 29th International Conference on Microelectronics (ICM), pp: 1-5, Beirut, Lebanon, 10-13 Dec. 2017.
12. A. Abdelgawad, **Y. Ismail**, K. Yelamarthi, "Moving Target Tracking using a Mobile Robot," IEEE International Symposium on Monitoring & Surveillance Research, June 2015.
13. **Yasser Ismail**, Wael El-Medany, Hessa Al-Junaid, and Ahmed Abdelgawad “Fast Co-Processor for Real-Time Video Transmission,” Proc. of the IEEE International Conference on Electronics, Circuits, and Systems, ICECS, Abu Dhabi, UAE, pp. 945 – 949, December 8-11, 2013.
14. Wael El-Medany and **Yasser Ismail** “Mobile Learning Laboratory for Hardware Courses,” IEEE International Conference on e-Learning "Best Practices in Management, Design and Development of e-Courses: Standards of Excellence and Creativity", pp.51,54, 7-9 May 2013

15. **Yasser Ismail** and Sherif El-etriby "Fast diamond search algorithm for real-time video coding," Proc. of the IEEE Workshop ICNC, Maui, Hawaii, USA, pp. 729 – 733, 30 January 2012.
16. **Yasser Ismail**, Sherif El-etriby, and Magdy A. Bayoumi, " Frequency Domain: Efficient and High-Speed Technology For Video Transmission," Proc. of the IEEE Workshop on Signal Processing Systems (SIPS), Beirut, Lebanon, pp. 278 – 282, October 2011.
17. **Yasser Ismail** and Magdy A. Bayoumi, " Efficient high-speed lattice-CORDIC IFFT architecture for DMT transmitter," Proc. of the IEEE Workshop on Signal Processing Systems (SIPS), San Francisco, CA, USA, pp. 151 - 155, October 6-8, 2010.
18. **Yasser Ismail**, Jason McNeely, Mohsen Shaaban, and Magdy A. Bayoumi, "A Fast-Discrete Transform Architecture for Frequency Domain Motion Estimation," IEEE Int. Conference on Image Processing (ICIP), San Francisco Bay Area, California, U.S.A, pp. 1249 – 1252, September 26-29, 2010.
19. **Yasser Ismail**, Jason McNeely, Mohsen Shaaban, Mohamed Elgamel, and Magdy A. Bayoumi, " An efficient area manipulation architecture for frequency domain encoding process," IEEE International Symposium on Circuits and Systems (ISCAS 2010), Paris, France, pp. 2638 – 2641, 2010.
20. **Yasser Ismail**, Mohsen Shaaban, Jason McNeely, and Magdy A. Bayoumi, "An Efficient Manipulation architecture for Real-Time Video Coding in Frequency Domain," IEEE Int. Conference on Image Processing (ICIP), Cairo, Egypt, PP. 3281 – 3284, November 7-11, 2009.
21. **Yasser Ismail**, Jason McNeely, Mohsen Shaaban, and Magdy A. Bayoumi, "Enhanced Efficient Diamond Search Algorithm for Fast Block Motion Estimation," IEEE International Symposium on Circuits and Systems (ISCAS 2009), Taipei International Convention Center, Taiwan, pp. 3198 – 3201, 24 - 27 May 2009.
22. Jason McNeely, **Yasser Ismail**, Magdy A. Bayoumi, and Peiyi Zhao, "Power Analysis of The Huffman Decoding Tree," Proc. of the IEEE Int. Conference on Image Processing (ICIP), San Diego, California, U.S.A, pp. 1416 – 1419, October 12–15, 2008.
23. **Yasser Ismail**, Jason McNeely, Mohsen Shaaban, Magdy Bayoumi, "A Generalized Fast Motion Estimation Algorithm using External and Internal Stop Search Techniques for H.264 Video Coding Standard," IEEE International Symposium on Circuits and Systems (ISCAS 2008), Seattle, Washington, pp. 3574 – 3577, May 18-21, 2008.
24. **Yasser Ismail**, Mohamed Elgamel, and Magdy A. Bayoumi, "An Adaptive Block Size Phase Correlation Motion Estimation Using Smart Multireference Frames Selection in Frequency Domain," Proc. of IEEE Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, California, pp. 239 – 242, November 4-7, 2007.
25. **Yasser Ismail**, Mohamed Elgamel, and Magdy A. Bayoumi, "adaptive techniques for a fast Frequency Domain Motion Estimation," Proc. of IEEE Workshop on Signal Processing Systems (SIPS), Shanghai, China, pp. 331-336, October 17-19, 2007.
26. **Yasser Ismail**, Mohamed Elgamel, and Magdy A. Bayoumi, "A Fast Block-Based Motion Estimation Using Early Stop Search Techniques for H.264/AVC Standard," Proc. of the 48th IEEE International Midwest Symposium on Circuits and Systems, Montreal, Canada, pp. 397 – 400, Aug 5-8, 2007.
27. **Yasser Ismail**, M. Shaaban, and M. Bayoumi, "An Adaptive Block Size Phase Correlation Motion Estimation Using Adaptive Early Search Termination Technique," IEEE International Symposium on Circuits and Systems (ISCAS), New Orleans, pp.3423–3426, May 2007.
28. J.Luis TecpanecatI-Xihuitl, Ruth M. Aguilar-Ponce, **Yasser Ismail**, and Magdy A. Bayoumi "Efficient Mutliplierless Polyphase FIR Filter based on New Distributed Arithmetic Architecture," Proc. of IEEE Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, California, pp. 958 – 962, November 4-7, 2007.
29. S. Goel, **Yasser Ismail**, P. Devulapalli, J. McNeely, and M. Bayoumi, "An Efficient Data Reuse Motion

Estimation Engine,” Proc. of IEEE Signal Processing Systems Design and Implementation, 2006, SIPS, Banff, Canada, pp.383-386, Oct. 2006.

30. S. Goel, **Yasser Ismail**, and M. Bayoumi, "Adaptive search window size algorithm for fast motion estimation in H.264/AVC standard," Proc. of the 48th IEEE Intl. Midwest Symposium on Circuits and Systems, Ohio, pp. 1557-1560, Aug. 2005.

Courses developed at Southern University and A&M College

- **Apple Course Sharing** – expected creation date: Spring 2023: The course is a collaborative course with Apple that will allow students to perform industry-based research and will provide students with important information that is relevant to industry standards.
- **ELEN 435: Image processing and Computer Vision.** (Credit, 3 hours) (Lecture, 3 hours). This course is intended to teach students the concepts of visual information, feature extraction, Image enhancement in the spatial domain, Image enhancement in the frequency domain, Image restoration, Color image processing, Image compression, Morphological image processing, Image segmentation, and image representation.
- **ELEN 464: Mechatronics.** (Credit, 3 hours) (Lecture, 3 Hours) – Covers computer control of electromechanical systems, automatic data acquisition. Computerized instrumentation and testing. The embedded computer might be a combination of microprocessors, microcontrollers, personal computers, and /or programmable controllers. Students are required to test to design, assemble, and test actual systems.
- **MEEN 4xx: Additive Manufacturing Security & Security Framework.** This course is designed for the purpose of the NSF Award Id: 1912397. It will provide students with the knowledge of Additive Manufacturing applications and how to make them more secure. Virtual Reality simulations will be used to demonstrate possible risks from cyberattacks and their consequences.

Professional development

- Session chair at the IEEE 8th World Forum on Internet of Things (WF-IoT 2022), 26 October – 11 November 2022, Yokohama, Japan.
- Summer Fellow in the ONR-sponsored Summer Faculty Research Program at the Naval Surface Warfare Center – Carderock Division, West Bethesda, MD, USA, 20817, June 6 – August 8, 2022.
- NASA Proposal Development workshop, Hilton Baltimore BWI Airport, MD, June 24, 2022.
- Railway Engineering Education Symposium (REES 2022), University of Illinois at Chicago (UIC), Urban, Chicago, IL, June 15 – 16, 2022.
- IBM HBCU Cyber Security Leadership one-day workshop, Southern University and A&M College, June 8, 2022.
- Two days – Quality Education for Minorities (QEM) Network MSI Virtual Proposal Development Workshop, April 14-15, 2022.
- Associate Editor – IJCDS Journal (International Journal of Computing and Digital Systems) – March 2022 – Present, <https://journal.uob.edu.bh/handle/123456789/12>
- Completion of an online Cyber Awareness Challenge training, March 9, 2022.
- HBCU-EiR Webinar attendance on September 7, 2022. A full proposal was submitted on October 4, 2022, as a result of this Webinar.
- NSF Panel Reviewer: Serve as a reviewer for NSF Panels 2019, 2020, 2021, and 2022.
- Summer Fellow in the ONR-sponsored Summer Faculty Research Program at the Naval Surface Warfare Center – Carderock Division, West Bethesda, MD, USA, 20817, June 1 – August 8, 2021.
- Successfully passed eleven (11) weeks of Machine Learning online course on the Coursera website. <https://www.coursera.org/learn/machine-learning/home/welcome>, 2021.
- Session chair at the IEEE 7th World Forum on Internet of Things (WF-IoT 2021), 26 – 31 July 2021, New Orleans, Louisiana, USA
- External Assessment Moderator for the CE Department at University of Bahrain (UoB), December 2020.
- Session chair at the IEEE 6th World Forum on Internet of Things, 5-9 April 2020, New Orleans, Louisiana,

USA

- Session chair at the 63rd IEEE International Midwest Symposium on Circuits and Systems, 2018, 2019, and 2020
- Member of the Organizing Committee of the Gulf States Math Alliance Conference held at Southern University and A&M College, February 14-16, 2020
- Track chair at the IEEE Green Technologies Conference, April 3-6, 2019, Lafayette, Louisiana, USA
- Certificate from Quality Matters (QM) of Independent Applying the QM Rubric (APPQMR), September 20, 2019
- Supervisor of the IEEE student chapter group at Southern University and A&M College 2018 – Current
- Editorial Board Member for Frontiers of Mechatronical Engineering FME, EnPress Publisher Editorial - USA, 2018 - current
- Serve on the technical program committee for MobiApps 2016 (Mobile Applications, Vienna, Austria 2016)
- Invited to serve as a lead guest editor for a special issue in mobile information systems – Hindawi publishing corporation September 2016.
- Member of Bahrain Society of academics 2014 – 2016
- Session chair at ICECS 2013, Abu Dhabi - UAE
- An active member in the IEEE student chapter at the University of Louisiana (2006-2009).
- Member of the Organizing Committee of ISCAS 2007 symposium, New Orleans, LA.

Synergistic Activities

• Department and College Services:

- A committee member in the SMED qualifying exam. Ph.D. student name: Opeyemi Ojajuni, March 7, 2022.
- Mentor two (2) students in CREST Summer REU program, Summer 2022.
- Participating in the MENG Seminar program through a presentation to graduate students of the Mechanical Engineering program, March 2, 2022.
- Serve as a commencement Assistant University Marshal for the College of Sciences and Engineering (CSE) 2018 – Current.
- Electrical Engineering Department committee member (member).
- The Electrical Engineering Department assessment committee (member) Spring-2018.
- The IEEE Student Advisory Committee (member) Spring-2018.
- The Electrical Engineering Department Recruiting/Outreach Committee (Chair) Spring-2018.
- The Engineers Week Committee (Chair) Spring-2018.
- The Electrical Engineering Department Arduino Club (Chair) Fall-2018 – Current.

• Journal Reviewer:

- Journal of Real-Time Image Processing (JRTIP), Springer.
- IEEE Transaction on Circuit and System for Video Technology (TCSVT).
- IEEE Transactions on Very Large-Scale Integration (VLSI) Systems.
- IEEE Transactions on Image Processing.
- International Journal of Computing and Digital Systems (IJCDS).
- International Journal of Technology Diffusion (IJTD).

• Technical Conference Reviewer:

- SCS: University of Bahrain "Smart Cities Symposium" 22-23 April 2018.
- ISCAS: IEEE International Symposium on Circuits and Systems.

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- ICASSP: IEEE International Conference on Acoustics, Speech and Signal Processing.
 - ICIP: IEEE International Conference on Image Processing.
 - SIPS: IEEE Workshop on Signal Processing Systems.
 - GCCCE: IEEE-GCC Conference and Exhibition.
 - ICECS: IEEE International Conference on Electronics, Circuits, and Systems.
 - MWSCAS: IEEE International Midwest Symposium on Circuits and Systems.

- **Conference Organizer**

- The IEEE 6th World Forum on the Internet of Things (IoT) - WF-IoT 2020, New Orleans, USA, June 2nd – June 16th, Chair of Edge and Fog Computing session.
- The 63rd IEEE International Midwest Symposium on Circuits and Systems, August 9 -12, 2020, MA, USA.
- The Gulf States Math Alliance Conference held at Southern University and A&M College, February 14-16, 2020.
- 62nd IEEE International Midwest Symposium on Circuits and Systems, Dallas, TX, USA, Aug. 4-7, 2019, Chair of Control Systems, Mechatronics, and Robotics session.
- The IEEE Green Technologies Conference, 3-6 April, Lafayette, LA, 2019.
- The 9th International Conference on Ambient Systems, Networks and Technologies (ANT 2018), Porto, Portugal May 8-11, 2018.
- M.Sc./Ph.D. students forum Chair: IEEE International Midwest Symposium on Circuits and Systems, Windsor, ON, Canada August 5th-8th, 2018.
- Serve on the technical program committee for DPNoc'17 (International Workshop on Design and Performance of Networks on Chip 2017). August 15-18, 2016, Montreal, Quebec, Canada.
- Organizing Committee for IEEE ICECS 2013, Abu Dhabi, UAE.
- Organizing Committee for IEEE ISCAS 2007, New Orleans, LA, USA.

- **Workshops Organizer and School Visits**

These workshops and visits are part of the Electrical Engineering (EE) Department Outreach to increase students' enrolment in the EE Department. More information may be found at <https://www.subr.edu/page/CERL>

- One-day workshop for undergraduate students of different courses in the EE Department at Southern University, April 28, 2022.
- One-day workshop, Southern University Lab School – April 12, 2022.
- One-day workshop, McKinley Middle Magnet school for Engineering professions. April 8, 2022.
- Baton Rouge Community College (BRCC) visit – STEM Day, March 29, 2022.
- One-day workshop, Scotlandville Middle Pre-Engineering School, August 18, 2021.
- One-day workshop, Broadmoor High School, October 25, 2021.
- One-day workshop, Broadmoor High School, October 28, 2021.

- **Collaborators & Other Affiliations**

- Ashok Srivastava, Louisiana State University, USA
- Jesmin Khan, Tuskegee University, USA
- Magdy Bayoumi, University of Louisiana at Lafayette, USA
- Ahmed Abdelgawad, Central Michigan University, USA
- Jason McNeely, University of Alaska Fairbanks, USA
- Ahmed Khattab, Cairo University, Egypt

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- Wael El-Medany, Bahrain University, Bahrain
 - Mahmoud Darwich, University of Mount Union, USA

Skills

- Cadence, Synopsys, HSPICE, MAGIC, Mentor Graphics.
- VHDL, Matlab, Unix-cshell, Wire Shark.
- C/C++, Perl, Python, Office tools.

Google Scholar

<https://scholar.google.com/citations?user=eZriCdIAAAAJ>

References

Prof. Fred Lacy (Ph.D. Entergy Corporation Endowed Professor and Chair – Southern University)

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