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Education

2014 – 2019 🔖 **Ph.D. Electrical Engineering, Michigan State University, East Lansing, MI, USA**.
Thesis title: *Community Detection in Temporal and Multi-layer networks.*

2006 – 2007 🔖 **M.Sc. Electrical Engineering, Michigan State University, East Lansing, MI, USA** .
Thesis title: *Augmenting Information Channels to Improve Cochlear Implant Patients Performance Under Adverse Conditions*.

2000 – 2005 🔖 **B.Sc. Electrical Engineering, Jordan University of Science and Technology, Irbid, Jordan**.

Academic Experience

2019 –Present 🔖 **Assistant Professor,** Department of Electrical Engineering, Jordan University of Science and Technology.

2014 – 2019 🔖 **Research assistant,** Department of Electrical and Computer Engineering, Michigan State University.

2009 – 2014 🔖 **Full-time lecturer,** Department of Electrical Engineering, Jordan University of Science and Technology.

2009 – 2009 🔖 **Part-time lecturer,** Department of Electrical Engineering, Jordan University of Science and Technology.

2006 – 2007 🔖 **Research assistant,** Department of Electrical and Computer Engineering, Michigan State University.

Research Publications

Journal Articles

1. **Al-Sharoa, Esraa** and M. Al-wardat, "Enhanced subspace clustering in multiplex networks via tensor weighted schatten p-norm," *Available at SSRN 4564577,*

2. A. Al Bataineh, D. Kaur, M. Al-khassaweneh, and **Al-Sharoa, Esraa**, "Automated cnn architectural design: A simple and efficient methodology for computer vision tasks," *Mathematics*, vol. 11, no. 5, p. 1141, 2023.

3. **Al-Sharoa, Esraa** and S. Aviyente, "A unified spectral clustering approach for detecting community structure in multilayer networks," *Symmetry*, vol. 15, no. 7, p. 1368, 2023.

4. **Al-Sharoa, Esraa** and B. Rahahleh, "Community detection in networks through a deep robust auto-encoder nonnegative matrix factorization," *Engineering Applications of Artificial Intelligence*, vol. 118, p. 105 657, 2023.

5. **Al-Sharoa, Esraa**, M. Al-wardat, M. Al-khassaweneh, and A. Al Bataineh, "Discovering community structure in multiplex networks via a co-regularized robust tensor-based spectral approach," *Applied Sciences*, vol. 13, no. 4, p. 2514, 2023.

6. M. Al-khassaweneh, M. Bronakowski, and **Al-Sharoa, Esraa**, "Multivariate and dimensionality-reduction-based machine learning techniques for tumor classification of rna-seq data," *Applied Sciences*, vol. 13, no. 23, p. 12 801, 2023.

7. **Al-Sharoa, Esraa M** and S. Aviyente, "Community detection in fully-connected multi-layer networks through joint nonnegative matrix factorization," *IEEE Access*, vol. 10, pp. 43 022–43 043, 2022.

8. **Al-Sharoa, Esraa M** and M. A. Al-Wardat, "Multi-view robust tensor-based subspace clustering," *IEEE Access*, vol. 10, pp. 134 292–134 306, 2022.

9. **Al-Sharoa, Esraa M**, A. Bara'M, and M. A. Alkhassaweneh, "Robust community detection in graphs," *IEEE Access*, vol. 9, pp. 118 757–118 770, 2021.

10. **Al-Sharoa, Esraa**, M. A. Al-khassaweneh, and S. Aviyente, "Detecting and tracking community structure in temporal networks: A low-rank+ sparse estimation based evolutionary clustering approach," *IEEE Transactions on Signal and Information Processing over Networks*, vol. 5, no. 4, pp. 723–738, 2019.

11. **Al-Sharoa, Esraa**, M. Al-Khassaweneh, and S. Aviyente, "Tensor based temporal and multilayer community detection for studying brain dynamics during resting state fmri," *IEEE Transactions on Biomedical Engineering*, vol. 66, no. 3, pp. 695–709, 2018.

Conference Proceedings

1. **Al-Sharoa, Esraa**, "Graph clustering based on frobenius norm low-rank approximation," in *2023 14th International Conference on Information and Communication Systems (ICICS)*, IEEE, 2023, pp. 1–5.

2. **Al-Sharoa, Esraa**, M. Al-khassaweneh, and S. Aviyente, "Low-rank estimation based evolutionary clustering for community detection in temporal networks," in *ICASSP 2019- 2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, 2019, pp. 5381–5385.

3. **Al-Sharoa, Esraa**, M. Al-khassaweneh, and S. Aviyente, "Temporal block spectral clustering for multi-layer temporal functional connectivity networks," in *2018 IEEE Statistical Signal Processing Workshop (SSP)*, IEEE, 2018, pp. 503–507.

4. **Al-Sharoa, Esraa**, M. Al-Khassaweneh, and S. Aviyente, "A tensor based framework for community detection in dynamic networks," in *2017 IEEE international conference on acoustics, speech and signal processing (ICASSP)*, IEEE, 2017, pp. 2312–2316.

5. **Al-Sharoa, Esraa**, M. Al-khassaweneh, and S. Aviyente, "Detecting brain dynamics during resting state: A tensor based evolutionary clustering approach," in *Wavelets and Sparsity XVII*, SPIE, vol. 10394, 2017, pp. 58–71.

6. **Al-Sharoa, Esraa** and S. Aviyente, "Evolutionary spectral graph clustering through subspace distance measure," in *2016 IEEE Statistical Signal Processing Workshop (SSP)*, IEEE, 2016, pp. 1–5.

7. K. Arunachalam, R. Dayana, **Al-Sharoa, E, *et al.***, "Development of algorithms for automatic analysis of array probe eddy current data," in *25th Annual EPRI Steam Generator Workshop, Marco Island, Florida, USA*, 2006.

Books and Chapters

1. **Al-Sharoa, Esraa M**, *Community Detection in Temporal Multi-Layer Networks*. Michigan State University, 2019.

2. **Al-Sharoa, Esraa M**, *Augmenting Information Channels to Improve Cochlear Implant Patients Performance Under Adverse Conditions*. Michigan State University. Department of Electrical Engineering, 2007.

Skills

Languages	▉	Strong reading, writing and speaking competencies for English and Arabic.
Coding	▉	MATLAB, C++, LtSpice, LaTeX, …
Misc.	▉	Academic research, teaching, training, consultation, LaTeX typesetting and publishing.

Miscellaneous Experience

Awards and Achievements

2023	▉	**Best Paper Award**, The 14th International Conference on Information and Communication Systems.
2018	▉	**Top-Up Award**, Michigan State University.
2017	▉	**Faculty for the Future Fellowship Award**, Schlumberger Foundation.
2016	▉	**Faculty for the Future Fellowship Award**, Schlumberger Foundation.
2015	▉	**Faculty for the Future Fellowship Award**, Schlumberger Foundation.
2014	▉	**Faculty for the Future Fellowship Award**, Schlumberger Foundation.

Membership in Professional Organizations

2023 to date	▉	**Member of Association for Computing Machinery (ACM).**
2021 to date	▉	**Member of Women in Engineering Society, IEEE.**
2017 to date	▉	**Member of Young Professionals Society, IEEE.**
	▉	**Member of Signal Processing Society, IEEE.**
	▉	**Member of Institute of Electrical and Electronics Engineers (IEEE).**
2007 to date	▉	**Member of Jordanian Engineers Association.**

Service Activities

- ▉ The Secretary for IEEE Women in Engineering (WIE)- Jordan Section.
- ▉ The Treasurer for IEEE Women in Engineering (WIE)- Jordan Section.
- ▉ Reviewer for IEEE Journal of Biomedical and Health Informatics.
- ▉ Reviewer for IEEE Transactions on Medical Imaging.
- ▉ Reviewer for IEEE Wireless Communications Letters.
- ▉ Reviewer for Human Brain Mapping Journal.
- ▉ Reviewer for Digital Signal Processing Journal, Elsevier.

Professional Development Activities

2023	▉	**Training course on "Introduction to the eLearning system**, The Center for E-Learning and Open Educational Resources, Jordan University of Science and Technology.
2022	▉	**Training course on Introduction to the eLearning system**, Deanship of Academic Development and Quality Assurance, Jordan University of Science and Technology.
2021	▉	**Training course on Designing Effective E-Learning**, Deanship of Academic Development and Quality Assurance, Jordan University of Science and Technology.