Aman Ullah, Ph.D.

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Employment History

2024–present	🔖	**Associate Research Professor,** Guangdong University of Petrochemical Technology 525000, China.
2022–2024	🔖	**Postdoc Research Fellow,** Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Huzhou 313001, China.
2013 – 2016	🔖	**Computer Instructor,** Stems Education System Peshawar Pakistan.

Education

2018 – 2022	🔖	**PhD, Computer Science & Engineering**, Central South University, Hunan, China. Thesis title: *Research on complex networks key nodes and community structure mining*
2014 – 2017	🔖	**Master of Software Engineering,** Abasyn University Peshawar, Pakistan. Thesis title: *A Comparative Study for Software Cost Estimation Using COCOMO-II and Walston-Felix models*.
2008 – 2012	🔖	**Bachelor of Computer Science & Technology**, Gomal University KPK, Pakistan. Thesis title: *Distance Education System*.

Research Interests

🔖 I am interested in network mining/graph mining and social complex networks. As a researcher in this field, I am particularly interested in exploring complex systems and modelling novel problems, as well as proposing scalable algorithms for identifying influential nodes and detecting communities in real-world complex networks. One area of particular interest to me is the study of social systems, which provide an excellent example of complex networks.

Research Publications

Journal Articles

1. **A. Ullah**, S. U. Din, N. Khan, C. B. Mawuli, and J. Shao, "Towards investigating influencers in complex social networks using electric potential concept from a centrality perspective," *Information Fusion*, vol. 109, p. 102 439, 2024, ISSN: 1566-2535. 🔗 DOI: https://doi.org/10.1016/j.inffus.2024.102439.

2. **A. Ullah**, J. Sheng, B. Wang, S. U. Din, and N. Khan, "Leveraging neighborhood and path information for influential spreaders recognition in complex networks," *Journal of Intelligent Information Systems*, 2023. 🔗 DOI: https://doi.org/10.1007/s10844-023-00822-z.

3. S. U. Din, **A. Ullah**, C. B. Mawuli, Q. Yang, and J. Shao, "A reliable adaptive prototype-based learning for evolving data streams with limited labels," *Information Processing Management*, vol. 61, no. 1, p. 103 532, 2024, ISSN: 0306-4573. 🔗 DOI: https://doi.org/10.1016/j.ipm.2023.103532.

4. **A. Ullah**, B. Wang, J. Sheng, J. Long, N. Khan, and M. Ejaz, "A novel relevance-based information interaction model for community detection in complex networks," *Expert Systems with Applications*, vol. 196, p. 116 607, 2022, ISSN: 0957-4174. 🔗 DOI: https://doi.org/10.1016/j.eswa.2022.116607.

[5] **A. Ullah**, B. Wang, J. Sheng, J. Long, N. Khan, and Z. Sun, "Identifying vital nodes from local and global perspectives in complex networks," *Expert Systems with Applications*, vol. 186, p. 115 778, 2021, ISSN: 0957-4174. DOI: https://doi.org/10.1016/j.eswa.2021.115778.

[6] **A. Ullah**, B. Wang, J. Sheng, and N. Khan, "Escape velocity centrality: Escape influence-based key nodes identification in complex networks," *Applied Intelligence*, vol. 52, no. 14, pp. 16 586–16 604, 2022. URL: https://doi.org/10.1007/s10489-022-03262-4.

[7] **A. Ullah**, B. Wang, J. Sheng, J. Long, N. Khan, and Z. Sun, "Identification of nodes influence based on global structure model in complex networks," *Scientific Reports*, vol. 11, no. 1, p. 6173, 2021. URL: https://www.nature.com/articles/s41598-021-84684-x.

[8] **A. Ullah**, B. Wang, J. Sheng, J. Long, and N. Khan, "Identification of influential nodes via effective distance-based centrality mechanism in complex networks," *Complexity*, vol. 2021, pp. 1–16, 2021. URL: https://doi.org/10.1155/2021/8403738.

[9] **A. Ullah**, B. Wang, J. Sheng, J. Long, M. Asim, and Z. Sun, "Optimization of software cost estimation model based on biogeography-based optimization algorithm," *Intelligent Decision Technologies*, vol. 14, no. 4, pp. 441–448, 2020. URL: https://content.iospress.com/articles/intelligent-decision-technologies/idt200103.

[10] Z. Sun, Y. Sun, X. Chang, *et al.*, "Finding critical nodes in a complex network from information diffusion and matthew effect aggregation," *Expert Systems with Applications*, vol. 233, p. 120 927, 2023, ISSN: 0957-4174. DOI: https://doi.org/10.1016/j.eswa.2023.120927.

[11] N. Khan, Z. Ma, **A. Ullah**, and K. Polat, "Dca-iomt: Knowledge-graph-embedding-enhanced deep collaborative alert recommendation against covid-19," *IEEE Transactions on Industrial Informatics*, vol. 18, no. 12, pp. 8924–8935, 2022. DOI: 10.1109/TII.2022.3159710.

[12] N. Khan, Z. Ma, **A. Ullah**, and K. Polat, "Similarity attributed knowledge graph embedding enhancement for item recommendation," *Information Sciences*, vol. 613, pp. 69–95, 2022, ISSN: 0020-0255. DOI: https://doi.org/10.1016/j.ins.2022.08.124.

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[15] Z. Sun, J. Sheng, B. Wang, **A. Ullah**, and F. Khawaja, "Identifying communities in dynamic networks using information dynamics," *Entropy*, vol. 22, no. 4, 2020, ISSN: 1099-4300. DOI: 10.3390/e22040425.

[16] J. Sheng, J. Hu, Z. Sun, *et al.*, "Community detection based on human social behavior," *Physica A: Statistical Mechanics and its Applications*, vol. 531, p. 121 765, 2019, ISSN: 0378-4371. DOI: https://doi.org/10.1016/j.physa.2019.121765.

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[19] R. U. Khan, S. Almakdi, M. Alshehri, *et al.*, "Probabilistic approach to covid-19 data analysis and forecasting future outbreaks using a multi-layer perceptron neural network," *Diagnostics*, vol. 12, no. 10, 2022, ISSN: 2075-4418. DOI: 10.3390/diagnostics12102539.

Conference Proceedings

1 **A. Ullah**, B. Wang, J. Sheng, J. Long, M. Asim, and F. Riaz, "A novel technique of software cost estimation using flower pollination algorithm," in *2019 International Conference on Intelligent Computing, Automation and Systems (ICICAS)*, 2019, pp. 654–658. 🔗 DOI: 10.1109/ICICAS48597.2019.00142.

2 **A. Ullah**, A. Salam, A. Khan, and S. Baseer, "A comparative study for software cost estimation using cocomo-ii and walston-felix models," in *The 1st International Conference on Innovations in Computer Science & Software Engineering,(ICONICS 2016)*, 2016, pp. 15–16.

Patents

1 **A. Ullah**, "An integrated mechanism for influential nodes identification in social complex network," 202211544190.4, 2022.

2 S. Uddin and **A. Ullah**, "An adaptable human activity recognition framework in sensory data streams," 202311544190.5, 2023.

Skills

Languages	🔖 Reading, writing and speaking competencies for **English**, **Urdu**, **Pashto**.
Coding	🔖 Python, PHP, Matlab MySQL, PostgreSQL, HSQL.
Publised Code	🔖 Identifying vital nodes from local and global perspectives in complex networks (https://codeocean.com/).
Misc.	🔖 Academic research, teaching, training, and publishing.

Talks

2019	🔖 Presenter: A Novel Technique of Software Cost Estimation Using Flower Pollination Algorithm, "in Chongqing, China"
2018	🔖 Presenter: Malicious Code Detection: Image Processing Using Deep Learning: International Conference on Computing and Artificial Intelligence (ICAAI), Chengdu, China, March 2018.
2019	🔖 Presenter: Artificial Intelligence challenges and implantation to the current trends, AI Seminar in UESTC, 2019.
2021	🔖 Latex and other research tools: Invited talk at Sichuan University. Seminar in UESTC, 2019.
2022	🔖 An Excellent team man with Effective Communication skills in CSU
	🔖 Key Node Identification in social complex networks, overview in YDRI
2023	🔖 The recent problems in social complex networks, overview in YDRI

Professional Activities

Journal Reviewer

Journal	🔖 IEEE Transactions on Network Science and Engineering
	🔖 Expert Systems with Applications
	🔖 Information Sciences
	🔖 Applied Intelligence
	🔖 Information Processing & Management

Professional Activities (continued)

🔖 Journal of Intelligent Information Systems

Miscellaneous Experience

Awards and Achievements

2021 🔖 **Outstanding international student** . Central South University Huan, China.

2018 🔖 **CSC Scholarship**. Chinese Government Scholarship.

References

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