

Prof. Dr. Muhammad Akram

HEC Approved Ph.D. Supervisor

BRIEF BIOGRAPHY

Muhammad Akram has received MSc degrees in Mathematics and Computer Science, MPhil in (Computational) Mathematics and PhD in (Fuzzy) Mathematics. He is currently a Professor in the Department of Mathematics at the University of the Punjab, Lahore. He has also served the Punjab University College of Information Technology as Assistant Professor and Associate Professor. Dr. Akram's research interests include fuzzy numerical methods, fuzzy graphs, fuzzy algebras, and fuzzy decision support systems. He has published 10 monographs and 461 research articles in international scientific journals. Some of his papers have been published in high impact journals, including Knowledge-Based Systems, Information Sciences, Expert systems with applications, Applied Soft Computing, International Journal of Intelligent Systems, Computers & Mathematics with Applications, Journal of Intelligent and Fuzzy Systems, Soft Computing, Neural Computing and Applications. Dr Akram's total impact factor is more than 995. His current H-index on Google scholar is 48 and i10-index is 307. According to reports from Stanford University for years 2020 and 2021, Dr. Akram is ranked in the top 2% of scientists for years 2020 and 2021 in the world in Artificial Intelligence and Image Processing. He has been an Editorial Member of several international academic journals. Reviewer/Referee for 154 International Journals including Mathematical Reviews (USA) and Zentralblatt MATH (Germany). Sixteen students have successfully completed their Ph.D. research work under his supervision. Currently, he is supervising 5 PhD students.

RESEARCH PROFILE

•Number of Published Books by International Publisher	10
•Number of International/HEC recognized Journal publications	461
•Total impact factor	995
•Number of Communicated Journal publications	25
•Number of International Conferences publications	08
• H -index	48
•Number of Foreign Research Collaborators	30
•Number of National Research Collaborators	20
•Reviewer/Referee for International Journals including Mathematical Reviews(USA) and Zentralblatt MATH (Germany).	154

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Education

First class throughout academic career.

Ph.D, *GCU*, Lahore.

M. Phil Mathematics, *GCU*, Lahore.

M.Sc Mathematics, *Punjab University*, Lahore.

M.Sc Computer Science, *Balochistan University*, Quetta.

B.Sc, *University of the Punjab*, Lahore.

PROFESSIONAL EXPERIENCES

- 23Nov.2014- Present **Professor**, *Department of Mathematics*, Punjab University.
- 10May 2012- 22Nov.2014 **Associate Professor**, *Department of Mathematics*, Punjab University.
- 14Oct.2002- 9May 2012 **Assistant Professor**, *Punjab University College of Information Technology (PUCIT)*, Lahore Campus.
- Sep.1997- 2001 **Coordinator of Mathematics**, *Center in Computer Excellence (Approved study Center of AIOU)*, Lahore.
- 2003–2005 **Degree supervisor of BS (CS) program**, *PUCIT*.
- 2006–2010 **Chairman of Disciplinary Committee**, *PUCIT*.
- 2006–2010 **Chairman of stock taking verification committee**, *PUCIT*.
- 2003–2006 **Member of college council**, *PUCIT*.
- 2006–2013 **Member of admission committee**, *PUCIT*.
- 2010–2012 **Co-chair of needy based scholarship committee**, *PUCIT*.
- 2015–Present **Member of departmental doctoral programme committee**, *DPC*.
- 2015–Present **Member of Board of Studies in Mathematics**.
- 2015–Present **Member of University's Academic Council**.
- 2015–Present **Member of University's Senate**.

Awards

- + Among World's Top 2 % Scientists for years 2020 and 2021 in the field of Artificial Intelligence and Image Processing.
- + Won Second position in matriculation at Tahsil level and achieved merit scholarship from Gujranwala board
- + Departmental Best Teacher Award for Year 2015
- + Achieved Rs.20,000 research incentive award from PU Lahore for Year 2004

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- + Achieved Rs.70,000 research incentive award from PU Lahore for Year 2007
- + Achieved Rs.95,000 research incentive award from PU Lahore for Year 2008
- + Achieved Rs.195,000 research incentive award from PU Lahore for Year 2009
- + Achieved Rs.140,000 research incentive award from PU Lahore for Year 2010
- + Achieved Rs.200,000 research incentive award from PU Lahore for Year 2011
- + Achieved Rs. 172,500 research incentive award from PU Lahore for Year 2012
- + Achieved Rs. 213,333 research incentive award from PU Lahore for Year 2013
- + Achieved Rs. 214,670 research incentive award from PU Lahore for Year 2014
- + Achieved Rs. 135,000 research incentive award from PU Lahore for Year 2015
- + Achieved Rs. 149,625 research incentive award from PU Lahore for Year 2016
- + Achieved Rs. 220, 000 research incentive award from PU Lahore for Year 2017
- + Achieved Rs. 300, 000 research incentive award from PU Lahore for Year 2018
- + Achieved Rs. 340, 000 research incentive award from PU Lahore for Year 2019
- + Achieved Rs. 300, 000 research incentive award from PU Lahore for Year 2020
- + Achieved Rs. 340, 000 research incentive award from PU Lahore for Year 2021

Teaching

I am teaching following modules:

- + Abstract Algebra
- + Linear Algebra
- + Graph Theory
- + Differential Equations
- + Numerical Analysis
- + Operations Research
- + Discrete Mathematics
- + Fuzzy Systems

RESEARCH INTERESTS

- + Numerical algorithms for parabolic PDEs
- + Applications of fuzzy systems to numerical methods, graphs and algebraic structures
- + Fuzzy decision support / decision -making systems
- + Fuzzy linear programming models
- + Fuzzy numerical methods

Publications

A0. INTERNATIONAL BOOKS

1. Akram, M. and Dar K. H., *Generalized fuzzy K-Algebras*, VDM Verlag, 2010, pp.288 ISBN 978-3-639-27095-2
2. Akram, M., *Bifuzzy K-Algebras*, VDM Verlag, 2010, pp.142 ISBN 978-3-639-28648-9
3. Akram, M., *Computational Methods for Second-Order Parabolic equations*, VDM Verlag, 2010, pp.212 ISBN 978-3-639-2909-12
4. Akram, M. , *Fuzzy Lie Algebras*, Infosys Science Foundation Series in Mathematical Sciences, Springer, 2018.
5. Akram, M., *Single-Valued Neutrosophic Graphs*, Infosys Science Foundation Series in Mathematical Sciences, Springer, 2018.
6. Akram, M., *m-Polar Fuzzy Graphs*, Studies in Fuzziness and Soft Computing, Springer, **371**(2019).
7. Akram, M. and Zafar, F., *Hybrid Soft Computing Models Applied to Graph Theory*, Studies in Fuzziness and Soft Computing, DOI: 10.1007/978-3-030-16020-3, **380**(2020), Springer.
8. Akram, M. and Luqman, A, *Fuzzy Hypergraphs and Related Extensions* , Studies in Fuzziness and Soft Computing, DOI: 10.1007/978-981-15-2403-5, **390**(2020), Springer.
9. Akram, M., Sarwar, M. and Dudek, W.A., *Graphs for the Analysis of Bipolar Fuzzy Information*, Studies in Fuzziness and Soft Computing, Springer, DOI: 10.1007/978-981-15-8756-6, **401**(2021).
10. Akram, M., Shumaiza and Alcantud, JCR, *Multi-Criteria Decision Making Methods with Bipolar Fuzzy Sets*, Springer, 2022.

A1. INTERNATIONAL BOOK CHAPTERS

1. Akram, M and Shahzadi G., *Bipolar Neutrosophic Graphs*, In: Kahraman C., Otay I. (eds) Fuzzy Multi-criteria Decision-Making Using Neutrosophic Sets. Studies in Fuzziness and Soft Computing, **369**(2019), Springer.
2. Akram, M, Saleem, D. and Ghorai, G. *Energy of m -Polar Fuzzy Digraphs*, In: Pal M. Advanced Applications of Graph Theory in Modern Society, 2020, IGI Global.
3. Akram, M, *Decision Making Method Based on Spherical Fuzzy Graphs*, In: Kahraman C., Otay I. (eds) Spherical Fuzzy Sets Book. Studies in Fuzziness and Soft Computing, 2020, Springer.
4. Akram, M, Ali, M. and Allahviranloo, T., *Solution of Complex Bipolar Fuzzy Linear System*, In: Allahviranloo T., Salahshour S., Arica N. (eds) Progress in Intelligent Decision Science. IDS 2020. Advances in Intelligent Systems and Computing, vol 1301. Springer, Cham. https://doi.org/10.1007/978-3-030-66501-2_73.
5. Akram, M. & Shabir, M., *Complex T -Spherical Fuzzy N -Soft Sets*, In: Kahraman C., Cebi S., Cevik Onar S., Oztaysi B., Tolga A.C., Sari I.U. (eds) Intelligent and Fuzzy Techniques for Emerging Conditions and Digital Transformation. INFUS 2021. Lecture Notes in Networks and Systems, vol 308. Springer, Cham. https://doi.org/10.1007/978-3-030-85577-2_95.
6. Naz, S., Akram, M. and Saeed, A., 2022, *A Hybrid Multiple-Attribute Decision-Making Model Under Complex Q -Rung Orthopair Fuzzy Hamy Mean Aggregation Operators*, In Handbook of Research on Advances and Applications of Fuzzy Sets and Logic (149-191), IGI Global.

B. ARTICLES IN INTERNATIONAL JOURNALS

Year 2022

1. Akram, M, N. Ramzan and F. Feng, *Extending COPRAS Method with Linguistic Fermatean Fuzzy Sets and Hamy Mean Operators*, Journal of Mathematics, (2022), Article ID 8239263, <https://doi.org/10.1155/2022/8239263>.
2. Akram, M, U. Noreen, M. M. A. Al-Shamiri, *Decision analysis approach based on 2-tuple linguistic m -polar fuzzy Hamacher aggregation operators*, Discrete Dynamics in Nature and Society, (2022), Article ID 6269115.
3. Akram, M, Bibi R, Al-Shamiri MA, *A decision-making framework based on 2-tuple linguistic Fermatean fuzzy hamy mean operators*, Mathematical Problems in Engineering, (2022), Article ID 1501880.
4. Akram, M, U. Noreen, M. M. A. Al-Shamiri and D. Pamucar, *Integrated decision-making methods based on 2-tuple linguistic m -polar fuzzy information*, AIMS Mathematics, 7(8)(2022), 14557-14594.

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5. Akram, M., Shahzadi, S., Rasool, A. & Sarwar, M., *Decision-making methods based on fuzzy soft competition hypergraphs*, Complex & Intelligent Systems, **8**(3)(2022), 2325-2348.
6. Akram, M., Ullah, I. & Allahviranloo, T., *A new method for the solution of fully fuzzy linear programming models*, Computational and Applied Mathematics, **41**(1)(2022), 1-25.
7. Akram, M., Ali, M. & Allahviranloo, T., *A method for solving bipolar fuzzy complex linear systems with real and complex coefficients*, Soft Computing, **26**(5)(2022), 2157-2178.
8. Adeel, A., Akram, M. & Cagman, N., *Decision-making analysis based on hesitant fuzzy N-Soft ELECTRE-I approach*, Soft Computing, (2022), DOI: <https://doi.org/10.21203/rs.3.rs-672464/v1>.
9. Akram, M., Zahid, K. & Alcantud, JCR., *A new outranking method for multicriteria decision making with complex Pythagorean fuzzy information*, Neural Computing and Applications, **34**(10)(2022), 8069-8102.
10. Akram, M., Ali, G., Alcantud, JCR. & Riaz, A., *Group decision-making with Fermatean fuzzy soft expert knowledge*, Artificial Intelligence Review, (2022), <https://doi.org/10.1007/s10462-021-10119-8>.
11. Akram, M., Amjad, U., Alcantud, JCR and Santos-Garcia, G., *Complex Fermatean fuzzy N-soft sets: A new hybrid model with applications*, Journal of Ambient Intelligence and Humanized Computing, (2022), <https://doi.org/10.1007/s12652-021-03629-4>.
12. Akram, M., Siddique, S. & Alharbi, M.G., *Clustering algorithm with strength of connectedness for m-polar fuzzy network models*, Mathematical Biosciences and Engineering, **19**(1)(2022), 420-455.
13. Akram, M., Ali, G. & Alcantud, J.C.R., *Attributes reduction algorithms for m-polar fuzzy relation decision systems*, International Journal of Approximate Reasoning, **140**(2022), 232-254.
14. Feng, F., Zheng, Y., Sun, B. and Akram, M., *Novel score functions of generalized orthopair fuzzy membership grades with application to multiple attribute decision making*, Granular Computing, **7**(2022), 95-111.
15. Akram, M., Shahzadi, G. and Alcantud, JCR., *Multi-attribute decision-making with q-rung picture fuzzy information*, Granular Computing, **7**(2022), 197-215.
16. Akram, M., Sattar, A. and Saeid, AB., *Competition graphs with complex intuitionistic fuzzy information*, Granular Computing, **7**(2022), 25-47.
17. Liu, P., Naz, S., Akram, M. & Muzammal, M., *Group decision-making analysis based on linguistic q-rung orthopair fuzzy generalized point weighted aggregation operators*, International Journal of Machine Learning and Cybernetics, **13**(4)(2022), 883-906.

18. Akram, M. & Ahmad, U., *Threshold graphs under picture Dombi fuzzy information*, Granular Computing, **7**(3)(2022), 691-707.
19. Akram, M., Ali, G., Peng, X. & Ul Abidin, M.Z., *Hybrid group decision-making technique under spherical fuzzy N-soft expert sets*, Artificial Intelligence Review, **55**(5)(2022), 4117-4163.
20. Nawaz, H.S., Akram, M. & Alcantud, J.C.R., *An algorithm to compute the strength of competing interactions in the Bering Sea based on Pythagorean fuzzy hypergraphs*, Neural Computing and Applications, **34**(2)(2022), 1099-1121.
21. Akram, M. & M Sitara, M., *Decision-making with q-rung orthopair fuzzy graph structures*, Granular Computing, **7**(7)(2022), 505-526.
22. Akram, M. & Nawaz, H.S., *Inter-specific competition among trees in Pythagorean fuzzy soft environment*, Complex & Intelligent Systems, **8**(2)(2022), 863-884.
23. Akram, M., Ahmad, U. & Karaaslan, F., *Complex Pythagorean fuzzy threshold graphs with application in petroleum replenishment*, Journal of Applied Mathematics and Computing, **68**(3)(2022), 2125-2150.
24. Akram, M, G. Muhiuddin, and Gustavo Santos-Garcia., *An enhanced VIKOR method for multi-criteria group decision-making with complex Fermatean fuzzy sets*, Mathematical Biosciences and Engineering, **19**(7)(2022), 7201-7231.
25. Naz, S., Akram, M., Al-Shamiri, M.M.A., Khalaf, M.M. and Yousaf, G., *A new MAGDM method with 2-tuple linguistic bipolar fuzzy Heronian mean operators*, Mathematical Biosciences and Engineering, **19**(2022), 3843-3878.
26. Akram, M, and Nawaz, H.S., *Algorithms for the computation of regular single-valued neutrosophic soft hypergraphs applied to supranational asian bodies*, Journal of Applied Mathematics and Computing, (2022), <https://doi.org/10.1007/s12190-022-01714-1>.
27. Akram, M., Farooq, A., Shabir, M., Al-Shamiri, M.M.A. and Khalaf, M.M., *Group decision-making analysis with complex spherical fuzzy N-soft sets*, Mathematical Biosciences and Engineering, **19**(5)(2022), 4991-5030.
28. Akram, M., Shahzadi, G. and Davvaz, B., *Decision-making model for internet finance soft power and sportswear brands based on sine-trigonometric Fermatean fuzzy information*, Soft Computing, (2022), <https://doi.org/10.1007/s00500-022-07060-5>.
29. Naz, S., Akram, M., Saeid, A.B. and Saadat, A., *Models for MAGDM with dual hesitant q-rung orthopair fuzzy 2-tuple linguistic MSM operators and their application to COVID-19 pandemic*, Expert Systems, (2022), e13005.
30. Akram, M. and Martino, A., *Multi-attribute group decision making based on T-spherical fuzzy soft rough average aggregation operators*, Granular Computing, (2022), <https://doi.org/10.1007/s41066-022-00319-0>.

31. Akram, M, Sultan, M. and Al-Kenani, A.N., *Group decision analysis based on complex m -polar fuzzy N -soft environment*, Mathematical Problems in Engineering, **2022**(2022), <https://doi.org/10.1155/2022/4917408>.
32. Akram, M, Ahmad, U. and Samanta, S., *Threshold graphs under Pythagorean fuzzy information*, Journal of Multiple-Valued Logic & Soft Computing, **38**(5-6)(2022), 547-574.
33. Zahid, K., Akram, M. and Kahraman, C., *A new ELECTRE-based method for group decision-making with complex spherical fuzzy information*, Knowledge-Based Systems, **243**(2022), 108525.
34. Nawaz, H.S. and Akram, M., *Granulation of protein-protein interaction networks in Pythagorean fuzzy soft environment*, Journal of Applied Mathematics and Computing, (2022), <https://doi.org/10.1007/s12190-022-01749-4>.
35. Akram, M. and Nawaz, H.S., *Implementation of single-valued neutrosophic soft hypergraphs on human nervous system*, Artificial Intelligence Review, (2022), <https://doi.org/10.1007/s10462-022-10200-w>.
36. Akram, M., Khan, A. and Ahmad, U., *Extended MULTIMOORA method based on 2-tuple linguistic Pythagorean fuzzy sets for multi-attribute group decision-making*, Granular Computing, (2022), <https://doi.org/10.1007/s41066-022-00330-5>.
37. Akram, M., Saqib, M., Bashir, S. and Allahviranloo, T., *An efficient numerical method for solving m -polar fuzzy initial value problems*, Computational and Applied Mathematics, **41**(4)(2022), 1-42.
38. Akram, M., Luqman, A. and Alcantud, J.C.R., *An integrated ELECTRE-I approach for risk evaluation with hesitant Pythagorean fuzzy information*, Expert Systems with Applications, **200**(2022), 116945.
39. Habib, A., Akram, M. and Kahraman, C., *Minimum spanning tree hierarchical clustering algorithm: A new Pythagorean fuzzy similarity measure for the analysis of functional brain networks*, Expert Systems with Applications, **201**(2022), 117016.
40. Alcantud, J.C.R., Santos-García, G. and Akram, M., *OWA aggregation operators and multi-agent decisions with N -soft sets*, Expert Systems with Applications, **203**(2022), 117430.

Year 2021

1. Akram, M., Habib, A. & Alcantud, J.C.R., *An optimization study based on Dijkstra algorithm for a network with trapezoidal picture fuzzy numbers*, Neural Computing & Applications, **33**(2021), 1329-1342.
2. Akram, M., Al-Kenani, A.N., & Shabir, M., *Enhancing ELECTRE I Method with Complex Spherical Fuzzy Information*, International Journal of Computational Intelligence Systems, **14**(1)(2021), 1-31.

3. T.A. Al-Hawary, S.H. Al-Shalalkeh and Akram, M., *Certain matrices and energies of fuzzy graphs*, TWMS Journal of Applied and Engineering Mathematics, **11**(3)(2021), 1-17.
4. Akram, M., Bashir, A. & Edalatpanah, S.A., *A hybrid decision-making analysis under complex q -rung picture fuzzy Einstein averaging operators*, Computational and Applied Mathematics, **40**(8)(2021), 1-35.
5. Akram, M., Wasim, F. & Karaaslan, F., *MCGDM with complex Pythagorean fuzzy-soft model*, Expert Systems, **38**(8)(2021), 12783.
6. Akram, M., Khan, A., Karaaslan, F., *Complex spherical Dombi fuzzy aggregation operators for decision-making*, Journal of Multiple-Valued Logic & Soft Computing, **37**(2021), 503-531.
7. Hameed, S., Akram, M., Mustafa, N. & Samanta, S., *Extension of threshold graphs under complex fuzzy environment*, International Journal of Applied and Computational Mathematics, **7**(5)(2021), 1-19.
8. Akram, M., Shahzadi, G. & Peng, X., *Extension of Einstein geometric operators to multi-attribute decision making under q -rung orthopair fuzzy information*, Granular Computing, **6**(4)(2021), 779-795.
9. Akram, M. & Shahzadi, G., *A hybrid decision-making model under q -rung orthopair fuzzy Yager aggregation operators*, Granular Computing, **6**(4)(2021), 763-777.
10. Akram, M., Wasim, F. & Al-Kenani, A.N., *Complex-Rung Orthopair Fuzzy-Soft Sets: A New Model with Applications*, Complexity, **2021**(2021), DOI: 10.1155/2021/3690597.
11. Siddique, S., Ahmad, U. & Akram, M., *A decision-making analysis with generalized m -polar fuzzy graphs*, Journal of Multiple-Valued Logic & Soft Computing, **37**(2021), 409-436.
12. Ali, G., Akram, M., Shahzadi, S. & UL ABIDIN, M.Z., *Group decision-making framework with bipolar soft expert sets*, Journal of Multiple-Valued Logic & Soft Computing, **37**(2021), 211-246.
13. Hameed, S., Akram, M., Mustafa, N. & Karaaslan, F., *Extension of threshold graphs under complex intuitionistic fuzzy environment*, Journal of Multiple-Valued Logic & Soft Computing, **37**(2021), 295-315.
14. Akram, M., Al-Kenani, A.N. & Luqman, A., *Degree based models of granular computing under fuzzy indiscernibility relations*, Mathematical Biosciences and Engineering, **18**(6)(2021), 8415-8443.
15. Akram, M., Shabir, M., Adeel, A. & Al-Kenani, A.N., *A Multiattribute Decision-Making Framework: VIKOR Method with Complex Spherical Fuzzy-Soft Sets*, Mathematical Problems in Engineering, **2021**(2021).

16. Akram, M., *Spherical fuzzy K-algebras*, Journal of Algebraic Hyperstructures and Logical Algebras, **2**(3)(2021), 85-98.
17. Akram, M., Ullah, I. & Alharbi, M.G., *Methods for solving-type Pythagorean fuzzy linear programming problems with mixed constraints*, Mathematical Problems in Engineering, **2021**(2021).
18. Akram, M., Adeel, A., Al-Kenani, A.N. & Alcantud, J.C.R., *Hesitant fuzzy N-soft ELECTRE-II model: a new framework for decision-making*, Neural Computing and Applications, **33**(13)(2021), 7505-7520.
19. Akram, M., Ali, G. & Shabir, M., *A hybrid decision-making framework using rough mF bipolar soft environment*, Granular Computing, **6**(3)(2021), 539-555.
20. Akram, M., Bashir, A., *Complex fuzzy ordered weighted quadratic averaging operators*, Granular Computing, **6**(3)(2021), 523-538.
21. Akram, M., Bashir, S. & Allahviranloo, T., *A Runge-Kutta numerical method to approximate the solution of bipolar fuzzy initial value problems*, Computational and Applied Mathematics, **40**(4)(2021), 1-43.
22. Akram, M., Ali, G. & Alcantud, J.C.R., *Parameter reduction analysis under interval-valued m-polar fuzzy soft information*, Artificial Intelligence Review, **54**(2021), 5541-5582.
23. Akram, M., Kahraman, C. & Zahid, K., *Extension of TOPSIS model to the decision-making under complex spherical fuzzy information*, Soft Computing, **25**(2021), 10771-10795.
24. Mehmood, M. A., Akram, M, M. G. Alharbi and S. Bashir, *Optimization of LR-type fully bipolar fuzzy linear programming problems*, Mathematical Problems in Engineering, **2021**(2021), Article ID 1199336.
25. Akram, M., Amjad, U. & Davvaz, B., *Decision-making analysis based on bipolar fuzzy N-soft information*, Comp. Appl. Math., **40**(2021), 182.
26. Akram, M., Ullah, I., Allahviranloo, T. and Edalatpanah, SA., *Fully Pythagorean fuzzy linear programming problems with equality constraints*, Computational and Applied Mathematics, **40**(4)(2021), 1-30.
27. Akram, M. and Shumaiza, D., *Multi-criteria decision making based on q-rung orthopair fuzzy PROMETHEE approach*, Iranian Journal of Fuzzy Systems, **18**(5)(2021), 107-127.
28. Saqib, M., Akram, M, Bashir, S. et al., *A Runge-Kutta numerical method to approximate the solution of bipolar fuzzy initial value problems*, Computational and Applied Mathematics, **40**(151)(2021), 1-43.
29. Akram, M., S. Alsulami and K. Zahid, *A hybrid method for complex Pythagorean fuzzy decision making*, Mathematical Problems in Engineering, **2021**, DOI: 10.1155/2021/9915432.

30. Luqman, A., Akram, M. and Alcantud JCR., *Digraph and matrix approach for risk evaluations under Pythagorean fuzzy information*, Expert Systems with Applications, **170**(2021), 114518.
31. Akram, M., Shabir, M. and Ashraf, A., *Complex neutrosophic N-soft sets: A new model with applications*, Neutrosophic Sets and Systems, **42**(2021), 278-301.
32. Akram, M., Luqman, A. and Kahraman, C., *Hesitant Pythagorean fuzzy ELECTRE-II method for multi-criteria decision-making problems*, Applied Soft Computing, **108**(2021), 107479.
33. Akram, M., Naz, S. and Ziaa, F., *Novel decision making framework based on complex q-rung orthopair fuzzy information*, Scientia Iranica, (2021), DOI: 10.24200/SCI.2021.55413.4209.
34. Akram, M., Peng, X. and Sattar, A., *A new decision-making model using complex intuitionistic fuzzy Hamacher aggregation operators*, Soft Computing, **25**(10)(2021), 7059-7086.
35. Sarwar, M., Akram, M. and Liu, P., *An integrated rough ELECTRE II approach for risk evaluation and effects analysis in automatic manufacturing process*, Artificial Intelligence Review, **54**(2021), 4449-4481.
36. Mehmood, MA., Akram, M., Alharbi, MG. and Bashir, S., *solution of fully bipolar fuzzy linear programming models*, Mathematical Problems in Engineering, **2021**(2021) , DOI: 10.1155/2021/9961891.
37. Akram, M., Naz, S., Edalatpanah, SA. and Mehreen, R., *Group decision-making framework under linguistic q-rung orthopair fuzzy Einstein models*, Soft Computing, **25**(2021), 10309-10334.
38. Akram, M., Ilyas, F. and Garg, H., *ELECTRE-II method for group decision-making in Pythagorean fuzzy environment*, Applied Intelligence, **51**(2021), 8701-8719.
39. Akram, M., Wasim, F. and Al-Kenani, AN., *A hybrid decision-making approach under complex Pythagorean fuzzy N-soft sets*, International Journal of Computational Intelligence Systems, **14**(1)(2021), 1263-1291.
40. Akram, M., Ilyas, F. and Al-Kenani, AN., *Two-phase group decision-aiding system using ELECTRE III method in Pythagorean fuzzy environment*, Arabian Journal for Science and Engineering, **46**(4)(2021), 3549-3566.
41. Akram, M. and Ali, G., *Group decision-making approach under multi (Q, N)-soft multi granulation rough model*, Granular Computing, **6**(2)(2021), 339-357.
42. Akram, M., Ali, G., Butt, MA. and Alcantud, JCR., *Novel MCGDM analysis under m-polar fuzzy soft expert sets*, Neural Computing and Applications, **33**(2021), 12051-12071.
43. Akram, M., Shabir, M., Al-Kenani, AN. and Alcantud, JCR., *Hybrid decision-making frameworks under complex spherical fuzzy-soft sets*, Journal of Mathematics, **3**(2021), 1-46.

44. Akram, M., Kahraman, C. and Zahid, K., *Group decision-making based on complex spherical fuzzy VIKOR approach*, Knowledge-Based Systems, **216**(2021), 106793.
45. Sarwar, M., Akram, M., Shahzadi, S., *Bipolar fuzzy soft information applied to hypergraphs*, Soft Computing, **25**(5)(2021), 3417-3439.
46. Ma, X., Akram, M., Zahid, K. and Alcantud, JCR., *Group decision-making framework using complex Pythagorean fuzzy information*, Neural Computing and Applications, **33**(6)(2021), 2085-2105.
47. Nawaz, HS. and Akram, M., *Oligopolistic competition among the wireless internet service providers of Malaysia using fuzzy soft graphs*, Journal of Applied Mathematics and Computing, **67**(2021), 855-890.
48. Akram, M., Sattar, A., Karaaslan, F. and Samanta, S., *Extension of competition graphs under complex fuzzy environment*, Complex & Intelligent Systems, **7**(1)(2021), 539-558.
49. Akram, M., Peng, X. and Sattar, A., *Multi-criteria decision-making model using complex Pythagorean fuzzy yager aggregation operators*, Arabian Journal for Science and Engineering, **46**(2)(2021), 1691-1717.
50. Siddique, S., Ahmad, U. and Akram, M., *A study on generalized graphs representations of complex neutrosophic information*, Journal of Applied Mathematics and Computing, **65**(1)(2021), 481-514.
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D. EDITORIAL BOARDS

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- + Annals of Fuzzy Mathematics and Informatics
- + Neutrosophic Sets and Systems
- + Punjab University Journal of Mathematics (Pakistan)
- + Journal of Algebra and Applied Mathematics (India)
- + Mathematical Sciences Letters (Egypt)
- + Journal of Mathematical Analysis
- + Journal of Uncertainty in Mathematics Science (Iran)
- + Scientific World Journal (Hindawi Publishing Corporation, USA)

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- + World Applied Sciences Journal
- + Numerical Analysis and Applicable Mathematics
- + Journal of Computational and Cognitive Engineering
- + Journal of Fuzzy Extension and Applications
- + Journal of Fuzzy Logic and Modeling in Engineering
- + Big Data and Computing Visions
- + Computational Algorithms and Numerical Dimensions
- + Operational Research in Engineering Sciences: Theory and Applications
- + Reports in Mechanical Engineering
- + Decision Making: Applications in Management and Engineering

E. REFEREEING AND REVIEWING

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3. Advances in Computational Intelligence
4. Advances in Difference Equations (Springer)
5. Advances in Fuzzy Mathematics (India)
6. Advances in Fuzzy Sets and Systems (Pushpa Publishing House, India)
7. Advances in Operations Research (Hindawi, USA)
8. Advanced Research in Pure Mathematics (Institute of Advanced Scientific Research, USA)
9. Afrika Matematika (Springer)
10. AIMS Mathematics
11. Algebras, Groups and Geometries (USA)
12. Analele Universitatii Din Oradea Fascicola Matematica (Romania)
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29. Bulletin of the Malaysian Mathematical Sciences Society (Malaysia)
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31. Bulletin of International Mathematical Virtual Institute
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92. Iranian journal of fuzzy systems

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94. Journal of Algebraic Systems
95. Journal of Ambient Intelligence and Humanized Computing (Springer)
96. Journal of Applied Mathematics (Hindawi, USA)
97. Journal of Discrete Mathematics (Hindawi, USA)
98. Journal of Environmental Management
99. Journal of Environmental Management (Elsevier)
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101. Journal of Generalized Lie Theory and Applications (Estonia, Finland)
102. Journal of Hyperstructures
103. Journal of the Indonesian Mathematical Society
104. Journal of Intelligent and Fuzzy Systems (IOS Press)
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110. Journal of Mathematics and Statistics, (USA)
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114. Journal of Taibah University for Science (Taylor and Francis)
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127. Matematicki Vesnik
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130. Middle East Journal of Scientific Research
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133. New Trends in Mathematical Sciences, (Turkey)
134. Proceedings of the Jangjeon Mathematical Society (Korea)
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136. Science Asia (Thailand)
137. SCIENCE CHINA Information Sciences (Springer)
138. Scientia Iranica
139. Scientific World Journal (Hindawi, USA)
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141. Science of the Total Environment
142. SN Operations Research Forum
143. Soft Computing (Springer)
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151. The Journal of Analysis (Springer)
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