

Prof. Dr. Muhammad Riaz

(HEC Approved Supervisor)

Professor

Department of Mathematics,
University of the Punjab,
Quaid-e-Azam Campus, Lahore- 54590, Pakistan.

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Websites:

<https://pu.edu.pk/faculty/description/418/Dr-Muhammad-Riaz.html>

<https://www.researchgate.net/profile/Muhammad-Riaz-35>

<https://scholar.google.com.pk/citations?hl=en&user=-veal1IAAAAJ>

<https://orcid.org/0000-0001-8115-9168>

<https://www.webofscience.com/wos/author/record/AAB-9948-2019>

Top 2% researcher in 2021, 2022, 2023 and 2024.



PERSONAL DATA:		SUMMARY (Teaching & Research):	
Name:	Dr. Muhammad Riaz	Teaching Experience:	26+ years
Father's Name:	Muhammad Haneef	Publications:	192+
Domicile:	Punjab	Citations:	5000
City:	Lahore	Book Chapters:	03
Gender (M/F):	Male	Number of PhD supervised:	08
Marital Status:	Married	Number of M.Phil supervised:	35
Contact:	+923004012299	Impact Factor:	550+
Telephone Office:	+924299231241 Ext 115	Number of papers reviewed:	600+
Postal Address:	Department of Mathematics, University of the Punjab, Quaid-e-Azam Campus, Lahore, Pakistan. Post Code: 54590	Number of Journals as a reviewer:	100+
		Member Editorial Board of International Journals:	15
		International Collaborations:	40+

Teaching Experience/ Employment Record: Teaching and Research Experience (26+ Years)

Present Position:

- **PROFESSOR OF MATHEMATICS (BPS-21)**
Department of Mathematics, University of the Punjab, Lahore
(Joining as Professor of Mathematics Dated: 10-07-2023)
- Associate Professor (BPS-20), Department of Mathematics, University of the Punjab, Lahore
(Joining Date: 19-05-2022)
- Assistant Professor (BPS-19), Department of Mathematics, University of the Punjab, Lahore
(From 13-07-2004 to 18-05-2022)
- Lecturer in Mathematics, Department of Mathematics, Govt. Degree College Pindi Bhattian.
(August 23, 1997 to July 10, 1998)
- Lecturer in Mathematics, Department of Mathematics, Govt. Degree College Kamokee.
(July 11, 1998 to November 11, 1998)

- Lecturer in Mathematics, Department of Mathematics, Govt. College of Science Wahdat Road Lahore. (November 13,1998 to July 12, 2004)

Field of Interest/ Area of Specialization/ Teaching Courses

Research work:

- Algebra and Topology (Algebraic and Topological Structures), Functional Analysis, Operator Theory, Harmonic Analysis, Set Theory and Measure Theory, Operation Research.
- Fuzzy Sets and Systems, Soft Set theory, Rough set Theory, Computational Intelligence, Data Science, Machine Learning, Multi-Criteria Decision Making problems
- **Dr. Muhammad Riaz is one of top 2% researcher included in the global list released by Stanford University in various disciplines on October 09, 2021 and October 10, 2022.** The ranking lists contain the names of over 100,000 top-scientists, researchers, doctors and engineers
https://elsevier.digitalcommonsdata.com/datasets/btchxktyzw/3?fbclid=IwAR2pxZOMQLPN913AgyB_khebGuI_BilrPty4ooFZE6HjAV2poMbP_hvCtCnM
<https://elsevier.digitalcommonsdata.com/datasets/btchxktyzw/4>
- **Guest Editor** of Special Issue of Symmetry MDPI: Recent Advances in Fuzzy Optimization Methods and Models
https://www.mdpi.com/journal/symmetry/special_issues/MVTZ91VN9H
- **Associate Editor** (AE) Journal of Intelligent & Fuzzy Systems (JIFS)
- **Guest Editor** Special Issue in Mathematics MDPI
Special Issue "Data Driven Decision-Making Under Uncertainty (D3U), 2nd Edition"
https://www.mdpi.com/journal/mathematics/special_issues/IV7NRYG3H8
- **Guest Editor** Special Issue in Computer Modeling in Engineering & Sciences-CMES
Control Systems and Machine Learning for Intelligent Computing
https://www.techscience.com/CMES/special_detail/control_systems
- **Editor:** Journal of New theory
<http://www.newtheory.org/editorial.html>
- **Editor:** Journal of Advanced Studies in Topology
<http://www.m-sciences.com/index.php?journal=jast&page=index>
- **Editor:** Decision Making: Applications in Management and Engineering (DMAME)
<http://www.dmame.org/index.php/dmame>
- **Editor:** Journal of Artificial Intelligence and Systems
<https://iecsience.org/journals/AIS>
- **Editor:** International Journal of Social Science, Innovation and Educational Technologies
<https://issjournal.com/>

EDUCATION:

Ph. D. in Mathematics (2014)

Ph. D. Notification. No. Ph.D.(R)/87/2014. Dated: 07-08-2014. HEC Ph.D. Country Directory. Serial/PCD No. 19675. Institution: University of the Punjab, Lahore

Thesis title: **Certain Quadratic Fields under the Action of two Generator Groups**

Supervised by: **Dr. M. A. Malik** Associate Professor. Department of Mathematics, University of the Punjab, Lahore.

Courses: Spectral Theory in Hilbert Spaces I & II, Minimal Surfaces, Lattice Theory, BCK Algebra, BCI Algebra.

Courses Taught by Instructor's: Prof. Dr. Shaban Ali Bhatti, Prof. Dr. Bashir Sadiq, Dr. Bilal Masud

M. Phil. in Mathematics (1996-1998) Institution: University of the Punjab, Lahore

Thesis Title: **Bounded Linear Operators and Fourier Transform Theory**

Research Supervisor: **Prof. Dr. G. M. Habibullah**

Publications:

Book Chapters

1. Farid, H. M. A., & Riaz, M. (2023). Linear Diophantine Fuzzy Information Aggregation with Multi-criteria Decision-Making. In *Fuzzy Optimization, Decision-making and Operations Research: Theory and Applications* (pp. 281-317). Cham: Springer International Publishing.
2. Hamid, M.T., Riaz, M., & Naeem, K. (2022). q-Rung Orthopair Fuzzy Soft Topology with Multi-attribute Decision-Making. In: Garg, H. (eds) *q-Rung Orthopair Fuzzy Sets*. Springer, Singapore. 17-46. Dated: 10-09-2022. ISBN 978-981-19-1449-2
https://doi.org/10.1007/978-981-19-1449-2_2
3. Riaz, M. & Athar Farid, H.M. (2022). q-Rung Orthopair Fuzzy Soft Set-Based Multi-criteria Decision-Making. In: Garg, H. (eds) *q-Rung Orthopair Fuzzy Sets*. Springer, Singapore. 465–503. Dated: 10-09-2022. ISBN 978-981-19-1449-2
https://doi.org/10.1007/978-981-19-1449-2_18
4. K. Naeem, K., & Riaz, M. (2021). Pythagorean Fuzzy Soft Sets-Based MADM. In: Garg H. (eds) *Pythagorean Fuzzy Sets*. Springer, Singapore. 407-442. Dated: 24-07-2021. ISBN 978-981-16-1989-2
https://doi.org/10.1007/978-981-16-1989-2_16.

Published Papers

Year 2024 (Published Papers)

5. Yasir Yasin, Y., Riaz, M., Kholood, A. (2025). Synergy of machine learning and the Einstein Choquet integral with LOPCOW and fuzzy measures for sustainable solid waste management. *AIMS Mathematics*, 10(1), 460-498. Dated: 09-01-2025. [DOI: 10.3934/math.2025022](https://doi.org/10.3934/math.2025022)
6. Yasin, Y., Demir, G., Riaz, M., Aslam, M., & Pamucar, D. (2024). A systematic investigation of multi-attribute border approximation area comparison approach with Gaussian membership function for optimizing water quality. *Environment, Development and Sustainability*, 1-34. Dated: 27-12-2024.
<https://doi.org/10.1007/s10668-024-05704-0>
7. Kausar, R., Malaika, A., Riaz, M., Simic, V., & Dragan Pamucar, D. (2024). An Intuitionistic Fuzzy Credibility Model for Exploring Document Ranking through Similarity Measures in Information Retrieval Systems, *International Journal of Fuzzy Systems*, (Accepted) Dated: 26-12-2024.
8. Riaz, M., Qamar, F., Tariq, S., & Alsager, K. (2024). AI-Driven LOPCOW-AROMAN Framework and

- Topological Data Analysis Using Circular Intuitionistic Fuzzy Information: Healthcare Supply Chain Innovation. *Mathematics*, 12(22), 3593. Dated: 16-11-2024. W Category, Q1, ISSN 2227-7390, JCR-SCIE. Impact Factor 2.3. <https://doi.org/10.3390/math12223593>
9. Razzaq, A., Khan, Z. A., Naeem, K., & Riaz, M. (2025). Picture fuzzy complex proportional assessment approach with step-wise weight assessment ratio analysis and criteria importance through intercriteria correlation. *Engineering Applications of Artificial Intelligence*, 139, 109554. Dated: 15-07-2024. Q1, Category W, ISSN 0952-1976. JCR-SCIE, Impact Factor 8.0. <https://doi.org/10.1016/j.engappai.2024.109554>
10. Yasin, Y., Riaz, M., Kausar, R., & Aslam, M. (2024). Enhancing sustainability in supply chain management using softmax Schweizer-Sklar information aggregation. *Engineering Applications of Artificial Intelligence*, 133, 108181. Dated: 15-07-2024. Q1, Category W, ISSN 0952-1976. JCR-SCIE, Impact Factor 8.0. <https://doi.org/10.1016/j.engappai.2024.108181>
11. Demir, G., Riaz, M., & Deveci, M. (2024). Wind farm site selection using geographic information system and fuzzy decision making model. *Expert systems with applications*, 255, 124772. Dated: 14-07-2024. Q1, Category W, ISSN 1873-6793. JCR-SCIE, Impact Factor 7.5. <https://doi.org/10.1016/j.eswa.2024.124772>
12. Jameel, T., Riaz, M., Aslam, M., & Pamucar, D. (2024). Sustainable renewable energy systems with entropy based step-wise weight assessment ratio analysis and combined compromise solution. *Renewable Energy*, 235, 121310. Dated: 06-06-2024. Q1, Category W, ISSN 0952-1976. JCR-SCIE, Impact Factor 9.0. <https://doi.org/10.1016/j.renene.2024.121310>
13. Farid, H. M. A., Riaz, M., Kausar, R., & Simic, V. (2024). Assessment of Environment-conscious Propulsion Technologies for Road Freight Distribution based on T-spherical Fuzzy Schweizer-Sklar Power Operators. *Information Sciences*, 120819. Dated: 03-06-2024. ISSN 0020-0255. JCR-SCIE, Category W, Impact Factor 8.1. <https://doi.org/10.1016/j.ins.2024.120819>
14. Riaz, M., Kausar, R., Jameel, T., & Pamucar, D. (2024). Cubic picture fuzzy topological data analysis with Integrating Blockchain and the metaverse for uncertain supply chain management. *Engineering Applications of Artificial Intelligence*, 131, 107827. Dated: 15-05-2024. Q1, Category W, ISSN 0952-1976. JCR-SCIE, Impact Factor 8.0. <https://doi.org/10.1016/j.engappai.2023.107827>
15. Jameel, T., Riaz, M., Yaqoob, N., & Aslam, M. (2024). T-spherical fuzzy interactive Dubois–Prade information aggregation approach for evaluating low-carbon technology impact and environmental mitigation. *Heliyon*, 10(7), e28963. Dated: 02-04-2024. Q1, Category W, ISSN 2405-8440. JCR-SCIE, Impact Factor 4.0. <https://doi.org/10.1016/j.heliyon.2024.e28963>
16. N. Jamil., & Riaz, M. (2023). Cubic bipolar fuzzy aggregation operator with priority degree with multi-criteria decision-making, *Scientia Iranica*, 31(5), 388-416. Dated: 23-03-2024. Category X, Q4, JCR-SCIE,

ISSN 1026-3098. Impact Factor 1.4 https://scintiairanica.sharif.edu/article_23437.html

17. Özlü, Ş., Al-Quran, A., & Riaz, M. (2024). Bipolar valued probabilistic hesitant fuzzy sets based on Generalized Hybrid Operators in multi-criteria decision-making problems based on TOPSIS. *Journal of Intelligent & Fuzzy Systems*, 46(4), 10553-10572. Dated: 18-04-2024. ISSN 1064-1246. JCR-SCIE, Category X, Impact Factor 2.0. [DOI: 10.3233/JIFS-238331](https://doi.org/10.3233/JIFS-238331)
18. Darici, S., Riaz, M., Demir, G., Gencer, Z. T., & Pamucar, D. (2024). How will I break AI? Post-Luddism in the AI age: Fuzzy MCDM synergy. *Technological Forecasting and Social Change*, 202, 123327. Dated: 18-03-2024. Q1, Category W, ISSN 0040-1625. JCR-SCIE, Impact Factor 12.0. <https://doi.org/10.1016/j.techfore.2024.123327>
19. Farid, H. M. A., Dabic-Miletic, S., Riaz, M., Simic, V., & Pamucar, D. (2024). Prioritization of sustainable approaches for smart waste management of automotive fuel cells of road freight vehicles using the q-rung orthopair fuzzy CRITIC-EDAS method. *Information Sciences*, 661, 120162. Dated: 01-03-2024. ISSN 0020-0255. JCR-SCIE, Category W, Impact Factor 8.1. <https://doi.org/10.1016/j.ins.2024.120162>
20. Bilgin, N. G., Bozma, G., & Riaz, M. (2024). Location selection criteria for a military base in border region using N-AHP method. *AIMS Mathematics*, 9(3), 7529-7551. Dated: 21-02-2024. Q1, Category X, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.2. <https://www.aimspress.com/article/doi/10.3934/math.2024365>
21. Razzaq, A., & Riaz, M. (2024). Picture fuzzy soft-max Einstein interactive weighted aggregation operators with applications. *Computational and Applied Mathematics*, 43(2), 90. Dated 16-02-2024. ISSN 1807-0302. Q2, Category W, JCR-SCIE Impact Factor 2.6. <https://doi.org/10.1007/s40314-024-02609-6>
22. Demirtas, N., Dalkilic, O., Riaz, M., & Al-Quran, A. (2024). Mathematical analysis of parameters belonging to the universe in the soft set theory with new distance measures. *Journal of Intelligent & Fuzzy Systems*, 46(2), 3975-3985. DOI: 10.3233/JIFS-234481. Dated: 14-02-2024. ISSN 1064-1246. JCR-SCIE, Category X, Impact Factor 2.0. <https://content.iospress.com/articles/journal-of-intelligent-and-fuzzy-systems/ifs234481>
23. Xiang, H., Farid, H. M. A., & Riaz, M. (2024). Linear Programming-Based Fuzzy Alternative Ranking Order Method Accounting for Two-Step Normalization for Comprehensive Evaluation of Digital Economy Development in Provincial Regions. *Axioms*, 13(2), 109. Dated: 05-02-2024. JCR-SCIE, ISSN 2075-1680, Category X, Impact Factor 2.0. <https://doi.org/10.3390/axioms13020109>
24. Farid, H. M. A., Riaz, M., Simic, V., & Peng, X. (2024). q-Rung orthopair fuzzy dynamic aggregation operators with time sequence preference for dynamic decision-making. *PeerJ Computer Science*, 10, 1-25. Dated: 31-01-2024. JCR-SCIE, ISSN 2376-5992, Category X, Impact Factor 2.7. [DOI 10.7717/peerj-cs.1742](https://doi.org/10.7717/peerj-cs.1742)
25. Kausar, R., Almalki, Y., Farid, H. M. A., & Riaz, M. (2024). Enhancing risk factor evaluation for infectious

diseases using decision-making approach based on linear programming. *Engineering Applications of Artificial Intelligence*, 127, 107413. Dated: 15-01-2024. Q1, Category W, ISSN 0952-1976. JCR-SCIE, Impact Factor 8.0. <https://doi.org/10.1016/j.engappai.2023.107413>

26. Korkmaz, E., Riaz, M., Devenci, M., & Kadry, S. (2024). A novel approach to fuzzy N-soft sets and its application for identifying and sanctioning cyber harassment on social media platforms. *Artificial Intelligence Review*, 57(1), 1-22. Dated 10-01-2024. ISSN 1573-7462, JCR-SCIE Impact Factor 12.0. <https://doi.org/10.1007/s10462-023-10640-y>

Year 2023 (Published Papers)

27. Saqlain, M., Abid, M., & Riaz, M. (2023). A Dynamic Investigation to Analyzing Divorce Effects within Wolbachia Models. *Nonlinear Convex Analysis and Optimization: An International Journal on Numerical, Computation and Applications*, 2(2), 55-73. Dated 30-12-2023.
28. Parimala, M., Prakash, K., Al-Quran, A., Riaz, M., & Jafari, S. (2024). Optimization Algorithms of PERT/CPM Network Diagrams in Linear Diophantine Fuzzy Environment. *CMES-Computer Modeling in Engineering & Sciences*, 139(1), 1095-1118. Dated: 30-12-2023. Q2, Category X, ISSN 1526-1492. Impact Factor 2.4. <https://doi.org/10.32604/cmes.2023.031193>
29. Yaqoot, I., Riaz, M., & Al-Quran, A. New similarity measures and TOPSIS method for multi stage decision analysis with cubic intuitionistic fuzzy information. *Journal of Intelligent & Fuzzy Systems*, 45(6), 12143-12166. Dated: 02-12-2023. ISSN 1064-1246. JCR-SCIE, Category X, Impact Factor 2.0. DOI: 10.3233/JIFS-232085. <https://content.iospress.com/articles/journal-of-intelligent-and-fuzzy-systems/ifs232085>
30. Razzaq, A., Riaz, M., & Aslam, M. (2024). Efficient picture fuzzy soft CRITIC-CoCoSo framework for supplier selection under uncertainties in Industry 4.0. *AIMS Mathematics*, 9(1), 665-701. Dated: 01-12-2023. Category W, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.2. <https://www.aimspress.com/article/doi/10.3934/math.2024035>
31. Al-Tahan, M., Rezaei, A., Al-Kaseasbeh, S., Davvaz, B., & Riaz, M. (2023). Linear Diophantine fuzzy n-fold weak subalgebras of a BE-algebra. *Missouri Journal of Mathematical Sciences*, 35(2), 136-148. <https://doi.org/10.35834/2023/3502136> Dated: 01-11-2023.
32. Al-Quran, A., Kausar, R., Jameel, T., & Riaz, M. (2023). Enhancing Tropical Artificial Forests with Cubic Picture Fuzzy Fairly Aggregation Operators. *IEEE Access*, 11, 112362-112383. Doi: 10.1109/ACCESS.2023.3322652. Dated: 06-10-2023. Category W, Q2, JCR-SCIE, ISSN 2169-3536. Impact Factor 3.9. <https://ieeexplore.ieee.org/abstract/document/10273385>
33. Riaz, M., & Farid, H. M. A. (2023). Enhancing green supply chain efficiency through linear Diophantine fuzzy soft-max aggregation operators. *Journal of Industrial Intelligence*, 1(1), 8-29.

34. Riaz M., Farid, H.M.A., Razzaq, A., Simic, V. (2023). A new approach to sustainable logistic processes with q-rung orthopair fuzzy soft information aggregation, PeerJ Computer Science, (2023). Dated: 28-08-2023. Q2, Category W, ISSN 2376-5992. JCR-SCIE, Impact Factor 3.8.
<https://doi.org/10.7717/peerj-cs.1527>
35. Riaz, M., Garg, H., Hashmi, M. R., & Farid, H. M. A. (2023). Generalized linear Diophantine fuzzy Choquet integral with application to the project management and risk analysis. Computational and Applied Mathematics, 42(6), 1-42. Dated 20-08-2023. ISSN 1807-0302. W-Category. JCR-SCIE Impact Factor 2.6. ISSN 1807-0302. Q2. <https://doi.org/10.1007/s40314-023-02421-8>
36. Farid, H. M. A., & Riaz, M. (2023). Single-valued neutrosophic dynamic aggregation information with time sequence preference for IoT technology in supply chain management, Engineering Applications of Artificial Intelligence, 126, 1-23. Dated: 18-08-2023. Q1, Category W, ISSN 0952-1976. JCR-SCIE, Impact Factor 8.0. <https://doi.org/10.1016/j.engappai.2023.106940>
37. Al-Quran, A., Jamil, N., Tehrim, S. T., & Riaz, M. (2023). Cubic bipolar fuzzy VIKOR and ELECTRE-II algorithms for efficient freight transportation in Industry 4.0, AIMS Mathematics, 8(10), 24484-24514. Dated: 18-08-2023. Category W, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.2.
<https://aimspress.com/article/doi/10.3934/math.20231249>
38. Kausar, R., Riaz, M., Yasin, Y., Deveci, M., & Pamucar, D. (2023). Measuring efficiency of retrieval algorithms with Schweizer-Sklar information aggregation. Information Sciences, 647, 1-24. Dated: 08-08-2023. ISSN: 1872-6291. JCR-SCIE, Impact Factor 8.1. Q1, Category W.
<https://doi.org/10.1016/j.ins.2023.119438>
39. Riaz, M., Farid, H.M.A., Jana, C., Pal, M., Sarkar, B. (2023). Efficient City Supply Chain Management through Spherical Fuzzy Dynamic Multistage Decision Analysis, Engineering Applications of Artificial Intelligence, 126, 1-23. Dated: 27-07-2023. Q1, Category W, ISSN 0952-1976. JCR-SCIE, Impact Factor 8.0. <https://doi.org/10.1016/j.engappai.2023.106712>
40. Kausar, R., Riaz, M., Simic, V., Akmal, K., & Farooq, M. U. (2023). Enhancing solid waste management sustainability with cubic m-polar fuzzy cosine similarity. Soft Computing, 1-21. Dated: 11-07-2023. ISSN 1432-7643, SCIE-JCR, W Category, Q2, Impact Factor 4.1.
<https://doi.org/10.1007/s00500-023-08801-w>
41. Razzaq, A., & Riaz, M. (2023). M-parameterized N-soft set-based aggregation operators for multi-attribute decision making. Soft Computing, 1-17. Dated: 07--07-2023. ISSN 1432-7643, SCIE-JCR, W Category, Q2, Impact Factor 4.1. <https://doi.org/10.1007/s00500-023-08853-y>
42. Kausar, R., Farid, H. M. A., & Riaz, M. (2023). A numerically validated approach to modeling water hammer phenomena using partial differential equations and switched differential-algebraic equations. Journal of Industrial Intelligence, 1(2), 75-86. <https://doi.org/10.56578/jii010201> Dated: 25-06-2023. ISSN 2958-2695.
43. Farid, H.M.A., Riaz, M., Almohsin, B. Marinkovic, D. (2023). Optimizing filtration technology for

- contamination control in gas processing plants using hesitant q-rung orthopair fuzzy information aggregation. *Soft Computing* (2023), 1-26. Dated: 21-06-2023. ISSN 1432-7643, SCIE-JCR, W Category, Q2, Impact Factor 4.1. <https://doi.org/10.1007/s00500-023-08588-w>.
44. Iram, S., Al-Aqrabi, H., Shakeel, H. M., Farid, H. M. A., Riaz, M., Hill, R., ... & Alsboui, T. (2023). An Innovative Machine Learning Technique for the Prediction of Weather Based Smart Home Energy Consumption. *IEEE Access*. 11, 76300 -76320. Dated: 19-06-2023. Category W, Q2, JCR-SCIE, ISSN 2169-3536. Impact Factor 3.9. [DOI: 10.1109/ACCESS.2023.3287145](https://doi.org/10.1109/ACCESS.2023.3287145)
<https://ieeexplore.ieee.org/document/10155398>
45. Habib, A., Khan, Z. A., Riaz, M., & Marinkovic, D. (2023). Performance Evaluation of Healthcare Supply Chain in Industry 4.0 with Linear Diophantine Fuzzy Sine-Trigonometric Aggregation Operations. *Mathematics*, 11(12), 1-29. Dated: 07-06-2023. W Category, Q1, ISSN 2227-7390, JCR-SCIE. Impact Factor 2.2. <https://doi.org/10.3390/math11122611>
46. Farid, H. M. A., & Riaz, M. (2023). q -Rung orthopair fuzzy Aczel–Alsina aggregation operators with multi-criteria decision-making. *Engineering Applications of Artificial Intelligence*, 122, 1-21. 106105. Dated: 01-06-2023. Q1, Category W, ISSN 0952-1976. JCR-SCIE, Impact Factor 8.0.
<https://doi.org/10.1016/j.engappai.2023.106105>.
47. Farid, H. M. A., Riaz, M., & Khan, Z. A. (2023). T-spherical fuzzy aggregation operators for dynamic decision-making with its application. *Alexandria Engineering Journal*, 72, 97-115. Dated: 01-06-2023. Q1, Category W, ISSN 1110-0168. JCR-SCIE, Impact Factor 6.8.
<https://doi.org/10.1016/j.aej.2023.03.053>
48. Demir, G., Riaz, M., & Almalki, Y. (2023). Multi-criteria decision making in evaluation of open government data indicators: An application in G20 countries, *AIMS Mathematics* 8(8):18408-18434.
DOI: 10.3934/math.2023936. Dated: 30-05-2023. Category W, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.2. <https://www.aimspress.com/article/id/6475d5ebba35de51b35479a9>
49. Riaz, M., Farid, H. M. A., Kausar, R. (2023). Innovative intuitionistic fuzzy fairly aggregation operators with linear programming based decision-making approach. *Journal of Ambient Intelligence and Humanized Computing*, 14(2023), 9593–9605. DOI: 10.1007/s12652-023-04631-8. Dated: 18-05-2023. ISSN 1868-5145. Category X, Q1. <https://doi.org/10.1007/s12652-023-04631-8>
50. Riaz, M., Farid, H. M. A., Antucheviciene, J., & Demir, G. (2023). Efficient Decision Making for Sustainable Energy Using Single-Valued Neutrosophic Prioritized Interactive Aggregation Operators. *Mathematics*, 11(9), 1-29. Dated: 05-05-2023. Category W, Q1, ISSN 2227-7390, JCR-SCIE. Impact Factor 2.4.
<https://doi.org/10.3390/math11092186>.
51. Habib, A., Khan, Z. A., Jamil, N., & Riaz, M. (2023). A decision-making strategy to combat CO₂ emissions using sine trigonometric aggregation operators with cubic bipolar fuzzy input. *AIMS Mathematics*, 8(7), 15092-15128. DOI: 10.3934/math.2023771. Dated: 23-04-2023. Category W, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.2. <https://www.aimspress.com/article/doi/10.3934/math.2023771>

52. Saqlain, M., Riaz, M., Kiran, N., Kumam, P., Yang, M. Shen. (2023). Water Quality Evaluation Using Generalized Correlation Coefficient for M-Polar Neutrosophic Hypersoft Sets. *Neutrosophic Sets and Systems*, 55, 58-89. Dated: 16-04-2023. ISSN 2331-6055, Category Y.
https://digitalrepository.unm.edu/nss_journal/vol55/iss1/5/
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177. M. Riaz, N. Cagman, I. Zareef and M. Aslam, N-soft topology and its applications to multi-criteria group decision making, Journal of Intelligent & Fuzzy Systems 36(6)(2019), 6521-6536. DOI:10.3233/JIFS-182919. W-Category, International, Dated 11-06-2019, ISSN 1064-1246. JCR-SCIE Impact Factor 1.851.

<https://content.iospress.com/search?q=author%3A%28%22Riaz%2C+Muhammad%22%29>

178. M Riaz, M. Saeed, M. Saqlain and N. Jafar, Impact of water hardness in instinctive laundry system based on fuzzy logic controller, Punjab University Journal of Mathematics 51(4)(2019), 73-84.

X-Category, ESCI, International. Dated 15-04-2019, ISSN 1016-2526, <http://www.pujm.com.pk>

179. M. Riaz, B. Davvaz, A. Firdous and A. Fakhar, Novel concepts of soft rough set topology with applications, Journal of Intelligent & Fuzzy Systems 36(4) (2019) 3579-3590. DOI:10.3233/JIFS-181648. W-Category, International, Dated 11-04-2019, ISSN 1064-1246. JCR-SCIE Impact Factor 1.851.

<https://content.iospress.com/search?q=author%3A%28%22Riaz%2C+Muhammad%22%29>

180. M. Riaz and S. T. Tehrim, Cubic bipolar fuzzy ordered weighted geometric aggregation operators and their application using internal and external cubic bipolar fuzzy data, Computational and Applied Mathematics, 38(2)(2019), 1-25. doi.org/10.1007/s40314-019-0843-3.

International, Dated 08-04-2019, ISSN 1807-0302. W-Category. SCIE-JCR-Impact Factor 1.360.

<https://link.springer.com/article/10.1007%2Fs40314-019-0843-3>

181. M. Riaz, S. T. Tahrim, Certain properties of bipolar fuzzy soft topology via Q-neighborhood, Punjab University Journal of Mathematics 51(3)(2019), 113-131.

(ESCI) X-Category, International, dated 01-03-2019, ISSN 1016-2526, <http://www.pujm.com.pk>

182. M. Riaz, F. Smarandache, A. Firdous and A. Fakhar, On soft rough topology with multi-attribute group decision making, Mathematics 7(1)(2019), 1-18. Doi:10.3390/math7010067.

W-Category, International, Dated 09-01-2019, ISSN 2227-7390. SCIE-JCR-Impact Factor 1.747.

<https://www.mdpi.com/2227-7390/7/1/67>

Year 2018

183. M. Riaz, M. R. Hashmi and A. Farooq, Fuzzy parameterized fuzzy soft metric spaces, Journal of Mathematical Analysis 9(2)(2018), 25-36.

(ESCI) X-Category, International, dated 09-05-2018 ISSN 2217-3412,

<http://www.ilirias.com/jma/>

184. M. Riaz, M. R. Hashmi, Fixed points of fuzzy neutrosophic soft mapping with decision-making, Fixed point theory and applications 7(2018), 1-10. doi.org/10.1186/s13663-018-0632-5

(SCIE-JCR-Impact Factor) W-Category, International, dated 02/19/2018, ISSN 1687-1812,

<https://link.springer.com/journal/13663>

185. M. Riaz, M. R. Hashmi, Fuzzy parameterized fuzzy soft compact spaces with Decision-Making,

Punjab University Journal of Mathematics 50(2)(2018), 131-145.

(ESCI) X-Category, International, dated 01-02-2018, ISSN 1016-2526,

<http://www.pujm.com.pk>

Year 2017

186. M. Riaz and Z. Fatima, Certain properties of soft metric spaces, The Journal of Fuzzy Mathematics, 25(3) (2017), 543-560. International, dated 19-12-2017, ISSN 1066-8950.

<http://fmath.org/journal1.html>

187. M. Riaz and M. R. Hashmi, Fuzzy parameterized fuzzy soft topology with applications, Annals of Fuzzy Mathematics and Informatics 13(5) (2017), 593-613.

International, dated 25-05-2017, ISSN 2093-9310 <http://www.afmi.or.kr/>

188. M. Riaz, K. Naeem and M. O. Ahmad, Novel concepts of soft sets with applications, Annals of Fuzzy Mathematics and Informatics 13(2) (2017), 239–251. International dated 16-03-2017 ISSN 2093-9310

<http://www.afmi.or.kr/>

Year 2016

189. M. Riaz, M. R. Hashmi, Certain applications of fuzzy parameterized fuzzy soft sets in decision-making problems, International Journal of Algebra and Statistics 5(2) (2016), 135–146.

DOI :10.20454/ijas.2016.1181 International, ISSN 2090-388X, dated 28-10-2016.

<http://www.m-sciences.com/index.php?journal=ijas>

190. M. Riaz and K. Naeem, Measurable soft mappings, Punjab University Journal of mathematics 48(2) (2016), 19-34. (ESCI) X-Category, International, ISSN 1016-2526. Dated 13-08-2016.

<http://www.pujm.com.pk>

Year 2012

191. M. Aslam Malik, Muhammad Riaz, Orbits of $Q^*(\sqrt{k^2m})$ under the action of the modular group $PSL(2, Z)$, University Politehnica of Bucharest Scientific Bulletin-Series A-Applied Mathematics and Physics, 74 (4), 109-116, 2012. W-Category, International, ISSN 1223-7027, Dated 01-12-2012. SCIE-JCR-Impact Factor

https://www.scientificbulletin.upb.ro/SeriaA_-_Matematica_si_fizica_aplicate.php

Year 2011

192. M. Aslam Malik, Muhammad Riaz, G-subsets and G-orbits of $Q^*(\sqrt{n})$ under action of the modular group, Punjab University Journal of Mathematics, 43, 75-84, 2011.

(ESCI) X-Category, International, dated 01-12-2011, ISSN 1016-2526, <http://www.pujm.com.pk>

**Research Experience/Research Supervision/ M.Phil and Ph.D Supervised:
PhD Students Supervised:**

1. **Dr. Syeda Tayyba Tehrim**, Ph.D. Mathematics (2016-2020).
Title of Ph.D. Thesis: **Bipolar Fuzzy Soft Topology with Applications in Decision Making**
(Ph.D Completed) Ph. D. Notification Ph.D. (R)/175/2020 Dated: 20-10-2020.
2. **Dr. Masooma Raza Hashmi**, Ph.D. Mathematics (2017-2020).
Title of Ph.D Thesis: **Some Hybrid Structures of m-polar Neutrosophic Set with Applications**
(Ph.D Completed) Ph. D. Notification Ph.D. (R)/266/2020 Dated: 31-12-2020.
3. **Dr. Khalid Naeem**, Ph.D. Mathematics (2016-2020).
Title of Ph.D Thesis: **Some Contributions to Pythagorean Fuzzy sets and Neutrosophic Sets with Applications.**
Ph.D Completed. Ph. D. Notification No. Ph.D:/021/011 Dated: 22-03-2021.
Supervisors: Dr. Deeba Afzal and Dr. Muhammad Riaz
4. **Dr. Muzzamil Sitara**, Ph.D. Mathematics (2017-2021)
Title: **Extensions of Graph Structures Under q-Rung picture Fuzzy Environment.**
Ph.D Completed. Ph. D. Notification No. Ph.D. (R)/107/2021 Dated: 28-05-2021.
Supervisors: Prof. Dr. Muhammad Akram and Dr. Muhammad Riaz
5. **Dr. Muhammad Tahir Hamid**, Ph.D. Mathematics (2017-2021).
Title of Ph.D Thesis: **Some Contributions to q-Rung Orthopair m-Polar Fuzzy Sets and Neutrosophic Sets with Applications.**
Ph.D Completed. Ph. D. Defense Dated: 23-09-2021.
Supervisors: Dr. Deeba Afzal and Dr. Muhammad Riaz
6. **Hafiz Muhammad Athar Farid**. Session 2020-2023
Title: **Some Hybrid Structures of q-Rung Orthopair Fuzzy Sets and their Aggregation Operators with Applications**
7. **Ayesha Razzaq**. Session 2020-2023
Title: **m-Polar Picture Fuzzy Topology with Applications in Multi Criteria Decision Making**
8. **Nimra Jamil**. Session 2020-2023
Title: **Cubic Bipolar Fuzzy Set Topology with Applications in Multi Criteria Decision Making**

PhD Students Supervising:

M.Phil Students Supervised:

1. Asma Attique (M.Phil Mathematics. Session 2021-2023)
Thesis Title: **Some Bipolar Single-Valued Neutrosophic Aggregation Operators with Applications**
2. Toqeer Jamil (M.Phil Mathematics. Session 2021-2023)
Thesis Title: **Cubic Picture Fuzzy Topology with Multi-Criteria Decision-Making**
3. Yasir Yasin (M.Phil Mathematics. Session 2021-2023)
Thesis Title: **Cubic m-Polar fuzzy Information Aggregation with Multi-Criteria Decision-Making**
4. Shaista Tanveer. M.Phil Mathematics. Session 2020-2022
Title: **Spherical Fuzzy Soft Topology and Information Aggregation with Applications**
5. Khadija Akmal. M.Phil Mathematics. Session 2020-2022
Title: **Cubic m-Polar Fuzzy Topology and Information Measures with Applications**
6. Sania Batool. M.Phil Mathematics. Session 2020-2022
Title: **Single-Valued Neutrosophic Hesitant Fuzzy Topology and Information Measures with Applications**
7. Muhammad Amir. M.Phil Mathematics. Session 2020-2022
Title: **Bipolar Picture Fuzzy Topology with Applications in Multi-Criteria Decision Making**
8. Ali Raza. M.Phil Mathematics. Session 2020-2022
Title: **q-Rung Orthopair m-Polar Fuzzy Topology with Multi-Attribute Decision-Making Methods**
9. Muhammad Abdullah Khokhar. M.Phil Mathematics. Session 2019-2021
Title: **Cubic m-Polar Fuzzy Aggregation Operators with Multi-Criteria Decision-Making Problems**
10. Maryam Saba. M.Phil Mathematics. Session 2019-2021
Title: **m-Polar Spherical Fuzzy Topology with Applications in Decision-Making**
11. Anam Habib. M.Phil Mathematics. Session 2019-2021
Title: **Cubic Bipolar Fuzzy Aggregation Operators with Multi-Criteria Decision-Making Methods**

12. Mishal Riaz, M.Phil Mathematics. Session 2019-2021
Title: [Bipolar Picture Fuzzy Information Measures with Applications in Decision-Making](#)
13. Hafiz Muhammad Athar Farid, M.Phil Mathematics. Session 2018-2020. Roll No. MPF18-06
Title of M.Phil Thesis: [Some q-Rung Orthopair Fuzzy Aggregation Operators with Multi-Criteria Decision Making Problems](#)
14. Ayesha Razzaq, M.Phil Mathematics. Session 2018-2020. Roll No. MPF18-24
Title of M.Phil Thesis: [Certain Properties of Fuzzy Parameterized N-Soft Topology With Applications](#)
15. Nawazish Ali, M.Phil Mathematics. Session 2018-2020. Roll No. MPF18-31
Title of M.Phil Thesis: [Pythagorean Fuzzy Soft Rough Set Topology with Multi-Criteria Decision Making Methods](#)
16. Iqra Zareef, M.Phil Mathematics (2017-2019)
Title of M.Phil Thesis: [N-Soft Topology and its Applications to Multi-Criteria Decision Making](#)
17. Iqra Nawaz, M.Phil Mathematics (2017-2019)
Thesis titled [Soft Multi Rough Set Topology with Applications to Group Decision Making](#)
18. Mahwish Sohail, M.Phil Mathematics (2017-2019)
Thesis titled [Soft Expert Topology and its Applications to Multi-Attribute Decision Making](#)
19. Atiqa Firdous, M.Phil Mathematics (2016-2018)
Thesis titled [Certain Properties of Soft Rough Set Topology with Decision Making Problems](#)
20. Atiqa Fakhar, M.Phil Mathematics (2016-2018)
Thesis titled [Properties of Hesitant Fuzzy Soft Topology with Multi-Attribute Decision Making Methods](#)
21. Nabeela Wali, M.Phil Mathematics (2016-2018)
Thesis titled [Soft Multi-Set Theory and Soft Multi-Set Topology with Applications](#)
22. Amna Mushtaq, M.Phil Mathematics (2016-2018)
Thesis titled [Certain Properties of Intuitionistic Fuzzy Soft Topology](#)
23. Masooma Raza Hashmi, M.Phil Mathematics (2015-2017)
Thesis titled [Properties of Fuzzy Parameterized Fuzzy Soft Topology](#)
24. Zain Fatima, **M.Phil Mathematics (2014-2016)**
Thesis titled [Some Properties of Soft Cone Metric Spaces](#)

Research Supervision (other students)

25. **Anam Aslam**, M.Phil Mathematics (2015-2017), Thesis titled “Soft Topology and Soft Separation Axioms”. Department of Mathematics, University of Lahore.
26. **Sana Pervez**, M.Phil Mathematics (2015-2017), Thesis titled “Properties of soft connected and Soft Compact Spaces”. Department of Mathematics, University of Lahore.
27. **Khalid Naem**, M.Phil Mathematics (2014-2016), Thesis titled “Soft Set Theory and Soft Sigma Algebras”. Department of Mathematics, University of Lahore
28. B.Sc. (Hons) Project (2005-2006) “Applications of Complete Normed Linear Spaces”. Department of Mathematics, University of the Punjab, Lahore.
29. B.Sc. (Hons) Project (2006-2007) “Applications of Graph Theory”. Department of Mathematics, University of the Punjab, Lahore.

RESEARCH PROJECTS:

- Research Project University of the Punjab 2017-2018 (Completed)
Title: Fuzzy Parameterized Fuzzy Soft Spaces with Decision-Making”.
Letter # D/4112/Est.1, Dated 13-09-2017. Rs. 150,000/-
- Research Project University of the Punjab 2014-2015 (Completed)
Title: Soft Connectedness and Soft Separability in Soft Topological Spaces”.
Letter # D/605/Est.1, dated 24-02-2015. Rs. 150,000/-
Starting date 24-02-2015, Ending date 31-12-2016

Research Incentive Awards:

- **Research Incentive Award** on publication for year 2020. Amount Rs. 300,000/-
- **Research Incentive Award** on publication for year 2019. Amount Rs. 191,667/-
No. D/2243/Est.I Dated: 29-12-2020.
- **Research Incentive Award** on publication for year 2012. Amount Rs. 15,000/-
No. D/1102/Est.I Dated 24-08-2013.

Performance Evaluation Awards:

- **Performance Evaluation Award** for year 2019 No. D/4456/Est-I. Dated: 15-10-2021.
Marks 73/75. Amount Rs. 48,666/-
- **Performance Evaluation Award** for year 2018 Marks 68/75. Amount Rs. 45,333/-
- **Performance Evaluation Award** for year 2017 Marks 56.5/75. Amount Rs. 36,333/-
- **Performance Evaluation Award** for year 2016 Marks 45.5/75. Amount Rs. 30,335/-
- **Performance Evaluation Award** for year 2015 Marks 43/75. Amount Rs. 28,665/-

Reviewer: Reviewer more than 40 SCIE/ESCI journals.

Soft Computing, International Journal of Intelligent Systems, Applied Soft Computing, Fuzzy Sets & Systems, Engineering Applications of Artificial Intelligence, Computational & Applied Mathematics, Journal of intelligent and fuzzy Systems, Neural Computing and Applications, Ambient Intelligence and Humanized Computing, AIMS Mathematics, International Journal of Biomathematics, Complexity, Complex & Intelligent Systems, Applied General Topology, Neutrosophic sets and Systems, Journal of New Theory, Journal of advanced Studies in Topology, Financial innovation, Arab Journal of Basic and Applied Sciences, Evolving systems, Natural and Engineering Sciences, Mathematical Sciences App E Notes, South East Asian Journal of Mathematics and Mathematical Sciences, TWMS Journal of Applied and Engineering Mathematics, Scientific Inquiry and Review, Fuzzy Information and Engineering, Journal of the Egyptian Mathematical Society.

Taught the Following major Courses/Subjects:

- Topology and Functional Analysis, Operator Theory, Operations Research
- Fuzzy Topology, Soft Topology, Rough Set Topology
- Advanced Analysis (Set Theory, Measure Theory and Lebesgue Integration)
- Algebra (Group Theory, Rings and Vector Spaces)
- Real Analysis and Complex analysis, Vector and Mechanics
- Fuzzy Systems, Fuzzy Logic, Extensions of Fuzzy sets
- Number Theory, Mathematical Statistics
- Methods of Mathematical Physics, Integral equations
- Ordinary and Partial Differential Equations
- Calculus and Analytic Geometry
- Discrete Mathematics, Linear Algebra

Seminars/Workshops/Conferences Attended/Paper Presented

Conferences/Workshops Attended/Participated from 01-01-2024 31-12-2024

1. Attended and participated as Invited Speaker on **19th CONFERENCE ON RECENT ADVANCES IN MATHEMATICAL METHODS, MODELS & APPLICATIONS (RAMMMA-24)** held on 02-03 March, 2024 at the Amjad Chaudhry Library, Main Campus, Burki Road, Lahore

2. Attended **2nd Workshop on Advancement in Mathematics & Its Applications** on June 07-09, 2024 held at Riphah International University, Lahore Campus.
3. Attended and participated as Invited Speaker **4th Summer School on New Trends in Mathematical Sciences** from August 5 to 9, 2024, at the Shangla Campus, University of Swat.
4. Attended and participated as Invited Speaker **One Day national Symposium “Mathematics in the Language of the Universe”** on August 19, 2024 at Baba Guru Nanak University, Nankana Sahib, Pakistan.
5. **Invited Keynote Speaker** “International Conference on the Revamped Scientific Outlook of the 21st Century, 2024” on November 14, 2024 at Rawalpindi Women University, Rawalpindi 6th Road Satellite Town, Rawalpindi, Pakistan.
6. Attended and participated as Invited Speaker **2nd International Conference on Emerging Horizons in Science and Technology (ICEHST 2024)**, on November 22, 2024 at University of Central Punjab (UCP), Lahore.
7. **Invited Keynote Speaker** at **1st National Conference on Mathematics: New Trends in Mathematics (NCM-2024)** on November 24-25, 2024, at the Department of Mathematics, Baba Guru Nanak University, Nankana Sahib, Pakistan.
8. Invited Keynote Speaker at **2nd International Conference on Mathematics for Sustainable Future** held on 12th -14th December 2022, at the Katchery Campus, The Women University Multan, Pakistan.
9. Attended and participated as Invited Speaker **2nd International Conference on Mathematics for Sustainable Future (ICMSF)** on 18th December 2022 at Women University Multan.
10. Invited Keynote Speaker at **3rd International Conference on Mathematics: Recent Development in Pure and Applied Mathematics** on 19th December 2022 at GC University Faisalabad.

Year (2023)

1. Paper presented as **INVITED SPEAKER** on “Fuzzy Modeling and Multi-Criteria Decision Making” in One Day Symposium on Optimization Techniques & Decision Making at Minhaj University Lahore, October 6, 2023.
2. Paper presented as **INVITED SPEAKER** on “Linear Diophantine Fuzzy Optimization and Decision Making” in 1st Workshop on Advancement in Mathematics & its Applications at Riphah International University, Lahore. June 03-04, 2023.
3. Attended and **Paper presented** on “Linear Diophantine Fuzzy Information Aggregation” in Recent Advances in Mathematical Methods, Models & Applications (RAMMMA) at Centre for Mathematics & Statistical Sciences, Lahore School of Economics, March 05-06, 2023.

Year (2022)

1. Paper presented as **INVITED SPEAKER** on title “Computational Intelligence and Recent Advances in Fuzzy Optimization” at Two Days International Webinar on “Recent Trends in Applied Mathematics and Physics” LCW University, Lahore December 08-09, 2022
2. Paper presented as **INVITED SPEAKER** on title “Linear Diophantine Fuzzy Optimization” in “First International Conference on Mathematics for Sustainable Future at Women University Multan” December 12-14, 2022.
3. Paper presented as **INVITED SPEAKER** on title “Computational Intelligence and Fuzzy Modeling” in “3rd National Conference on Mathematics and Applications at University of Sargodha” December 01-02, 2022.
4. Paper presented as **INVITED SPEAKER** on title “Modeling Uncertainties with Soft Multi Rough set Theory” in “A Workshop on Recent Trends in Mathematical Analysis” at Abdul Salam Scholl of Mathematical sciences (ASSMS), November 07-08, 2022.

5. Paper presented as **INVITED SPEAKER** on title “Soft Set theory and Soft Computing” at Two Days International Conference on Recent Developments in Pure and Applied Mathematics, Department of Mathematics, GC University, Faisalabad, October 23-24, 2022.
6. Paper presented as **INVITED SPEAKER** on title “Linear Diophantine Fuzzy Topology” at “A Workshop on Recent Trends in Mathematical Analysis” at Abdul Salam Scholl of Mathematical sciences (ASSMS), August 22-23, 2022.
7. Paper presented as **INVITED SPEAKER** on title “Soft Set Theory and Soft Topology” at International Webinar Online Organized by Department of Mathematics, University of Kotli, Azad Jammu and Kashmir, June 16, 2022.
8. Paper presented as **INVITED SPEAKER** on title “Linear Diophantine Fuzzy Sets with MADM” at Two Days 2nd International Conference on Mathematics, Department of Mathematics, Lahore Garrison University, Lahore, June 16-17, 2022.
9. Paper presented as **INVITED SPEAKER** on title “Linear Diophantine Fuzzy Topology” at Two Days 1st International Conference on Pure and Applied Mathematics, Department of Mathematics, GC University, Faisalabad, February 19-20, 2022.

Year (2021)

1. Paper presented on “Linear Diophantine Fuzzy Topology with Applications” at Departmental Seminar Series, Department of Mathematics, University of the Punjab, Lahore, dated: 08-12-2021.
2. Attended/participated **INVITED SPEAKER** in One day Webinar “Soft set theory with Applications” on “Recent Trends in Fuzzy Set Theory” organized by University of Kolti, Azad Jammu & Kashmir. Dated: 09-09-2021.
3. Paper presented as **INVITED SPEAKER** on topic: “Modeling Uncertainties with Linear Diophantine Fuzzy sets”, in International Faculty Development Program on “Demystifying Optimization Techniques”, online webinar, 22-27 March 2021 (One Week).

Year (2020)

1. Member organizing committee and international committee International Technical committee member for International Virtual Online Conference on “Bridging Innovative Trends in Mathematics, Engineering & Technology” during 18 to 19 December 2020, Bannari Amman Institute of Technology.
2. **Paper presented and Member Organizing Committee** in 6th UMT International Conference on Pure and Applied Mathematics (6th UICPAM-2019) February 21-23, 2020.
Title of Talk: Soft Rough Pythagorean m-Polar Fuzzy Sets and with Application to Decision-Making
3. Attended and **Paper presented as INVITED SPEAKER** on Roughness and Fuzziness Associated with Soft Multi Sets at Virtual University of Pakistan Dated: 08-01-2020.
4. Attended and **Paper presented as INVITED SPEAKER** on Soft Rough m-polar Neutrosophic Sets and their application in Decision Making. **Symposium on Fuzzy Analysis, Soft Set and Decision Making** at University of management & Technology Lahore. Dated: 27-01-2020.

Year (2019)

5. Attended and **Paper presented as INVITED SPEAKER** on Certain Properties of Hesitant Fuzzy Soft Topology with Multi-Attribute Decision Making Methods, The University of Lahore, from 30-11-2019 to 02-12-2019.
6. Attended and **Paper presented as INVITED SPEAKER** One day International seminar on Recent Trends in Pure and Applied Mathematics November 09, 2019.
7. **Paper presented** on “Hesitant Fuzzy Soft Topology with Applications” at 20th International Pure Mathematics Conference of (23-25 August, 2019), Islamabad Club, Islamabad, Pakistan.
8. Attended and **Paper presented** in Recent Advances in Mathematical Methods, Models & Applications (RAMMMA) at Centre for Mathematics & Statistical Sciences, Lahore School of Economics, April 13-14, 2019.

9. Attended and **Paper presented as INVITED SPEAKER** on Hesitant Fuzzy Set Theory with Applications with Decision-Making in Garrison International Conference on Pure and Applied Mathematics (April 1-3, 2019).
10. **Attended and Member Organizing Committee** in 5th UMT International Conference on Pure and Applied Mathematics (5th UICPAM-2019) March 29-31, 2019.

Year (2018)

1. Organized and Attended and **Paper presented as INVITED SPEAKER** on Soft Multi-Set Theory with Decision-Making in International Workshop on Nonlinear Analysis and Applications (IWNAAP-UMT 2018) (November 16-18, 2018).
2. Attended and **Paper presented** on Handling Uncertainties via soft Multi-set theory in 2018 International Conference on mathematics and its applications (2018-ICMA-GCU) Nov. 13-15, 2018.
3. Attended "2018 One Day Workshop on Nonlinear Analysis and its Applications" at GCU Lahore on July 17, 2018.
4. Attended and **Paper presented** on Fuzzy neutrosophic soft sets and bipolar neutrosophic soft sets with decision-making in Recent Advances in Mathematical Methods, Models & Applications (RAMMMA) at Centre for Mathematics & Statistical Sciences, Lahore School of Economics. April 7-8, 2018.
5. Attended and **Paper presented as INVITED SPEAKER** on Fuzzy Parameterized Fuzzy Soft Set Theory with Decision-Making in National Conference on Physical Sciences at Govt. M.A.O. College Lahore on April 25, 2018.
6. Attended and **Paper presented as INVITED SPEAKER** on Fuzzy Neutrosophic Soft Set Theory with Decision-Making in 4th UMT International Conference on Pure and Applied Mathematics (4th UICPAM-2018) March 31-April 02, 2018.

Year (2017)

1. Attended 1st International Meeting on Science and Society (23-25 November 2017) Organized by National Centre for Physics Islamabad and Centre of High Energy Physics, University of Punjab, Lahore
2. Attended and **Paper presented** on FPFS- Mappings with decision-making problems in 2017 International Conference on mathematics and its applications (2017-ICMA-GCU) Nov. 13-15, 2017.
3. Attended and **Paper presented as INVITED SPEAKER** in International Workshop on Nonlinear Analysis and Applications (IWNAAP-UMT 2017) (Sept. 16-18, 2017).
4. **Paper presented** on "FPFS Topology with Decision-making" at 18th International Pure Mathematics Conference of (04-06 August, 2017), Islamabad, Pakistan.
5. **Attended and Participated in One Day Workshop on Soft Set Theory and its Applications** at Department of Mathematics GCU Lahore on Tuesday May 23, 2017.
6. **Paper presented as INVITED SPEAKER** on Some Properties of FPFS-Compact Spaces in the 1st-LGU National Conference on Pure and Applied Mathematics (1st GNCPAM-2017) May 17-18, 2017.
7. **Paper presented and Member organizing committee** and Paper presented on Some Properties of FPFS-Continuous Mappings in 3rd UMT International Conference on Pure and Applied Mathematics (3rd UICPAM-2017) March 4-6, 2017.

Year (2016)

1. $Q^* \sqrt{k^2 m}$ titled on "Trace classes in the modular group and orbits of an invariant subset" at 2nd UMT International Conference on Pure and Applied Sciences 2016 (March 05-07, 2016), CMAP, UMT, Lahore, Pakistan.

2. **Paper presented and Member organizing committee** International Workshop on Nonlinear Analysis and Applications (IWNAAP-2016) (October 1-3, 2016) CMAP, UMT, Lahore.
3. Attended and Participated in Second International Workshop on Modern Aspects of Algebra and Graph Theory, (November 02-03, 2016), COMSATS Lahore, Pakistan.
4. Attended and Participated in Workshop on Relativistic Astrophysics and Cosmology, (November 24-25, 2016), COMSATS Lahore, Pakistan.
5. Attended and Participated in One Day Conference on Gravitation and and Cosmology, (November 26, 2016), Department of Mathematics, University of the Punjab, Lahore.
6. A seminar presented in the departmental seminar series on “Inequalities involving the norms of some special matrices”, Dated 03-02-2016.

Year (2015-)

1. **Paper presented** on “*Certain Properties of Soft Metric Spaces*” at International Conference on Recent Advances in Applied Mathematics (17-18 December, 2015), COMSATS Lahore, Pakistan.
2. **Paper presented** on “*Some Inequalities on Generalized Tribonacci and Generalized Pell Padovan Sequence*” at 16th International Conference of Pure Mathematics (21-23 August, 2015), Margala Hotel, Islamabad, Pakistan.
3. Attended **1st UMT National Conference on Pure and Applied Mathematics 2015** ((**March 07-08, 2015**), Department of Mathematics, University of Management and technology, Lahore, Pakistan.
4. Attended **International Conference on Relativistic Astrophysics** (February 10-14, 2015) Department of Mathematics, University of the Punjab, Lahore.
5. **Attended Lecture Series on Cosmology** (November 8-9, 2013), Department of Mathematics, University of the Punjab, Lahore.
6. **Seminar Presented** on “Certain quadratic fields under the action of the modular groups” in the Seminar Series (October 09, 2013), Department of Mathematics, University of the Punjab, Lahore.
7. **Paper Presented** on “Action of $SL(m, \mathbb{Z}_n)$ on the ring $\mathbb{Z}^m_{\mathbb{Z}_n}$ ” at 13th *International Conference of Pure Mathematics* (1-3 Sep, 2012), Margala Hotel, Islamabad.
8. **Seminar Presented** on “Equivalent Binary Quadratic Forms” in the Seminar Series (September 26, 2012), Department of Mathematics, University of the Punjab, Lahore.
9. A seminar/paper presented in the departmental seminar series on **Soft Set Theory and Soft Topology**, Dated 03-12-2014.
10. **Presented Papers/** Research work on “The Modular Group Action on Real Quadratic Field” in the Seminar Series (2008-2011), Department of Mathematics, University of the Punjab, Lahore.
11. **General Relativity and Gravitation** (Feb. 11-13, 2010), Department of Mathematics, University of the Punjab, Lahore.
12. **Lecture Series on Black Hole** (Oct. 10-11, 2008), Department of Mathematics, University of the Punjab, Lahore.
13. **Symposium on Relativity** (April 06, 2006), Department of Mathematics, University of the Punjab, Lahore.
14. **Four days All Pakistan Mathematical conference** (Nov 1-4, 1996), Govt. College Faisalabad.

Training

- **GRE/ NTS-GAT** Mathematics classes taught to M.Phil/Ph.D scholars and Faculty members of University of the Punjab, Lahore (September, 2014).
- Attended **Indigenous On-Campus Training of Faculty Members** University of the Punjab Lahore (From 22-26 December, 2014) Batch-8, held at Institute of Administrative Sciences, University of the Punjab Lahore.
- **One Week Workshop/Refresher Course on Algebraic Topology** (Dec. 20, 2004 to Dec. 26, 2004), ASSMS-GC University, Lahore.
- **Ten days Government Teachers Training Course**, Govt. College of Science Lahore March 1-10, 1999.
- **Assistant Controller of Examinations**, Govt. College of Science Wahdat Road Lahore.
- **Focal person ORIC** University of the Punjab, Lahore.

Administrative Duties/ Major Assignments:

- Member Departmental Doctoral Program Committee (DDPC), (2020-onwards). No. D/6609/Acad. Dated: 01-10-2020.
- **Students Advisor** (2009-2010, 2015-to-date), Department of Mathematics, Department of Mathematics, University of the Punjab, Lahore.
- **Coordinator 4 years BS Mathematics Program** (2005-2008, 2016-2019), Department of Mathematics, University of the Punjab, Lahore.
- **Coordinator MSc (Self-Supporting) Program** (2014-2017), Department of Mathematics, University of the Punjab, Lahore.
- **Coordinator Departmental Time Table** (2004-2016), Department of Mathematics, University of the Punjab, Lahore.
- **Member** Departmental Examination Committee (2004-2008, 2014-to-date), Department of Mathematics, University of the Punjab, Lahore.
- **Member** Departmental Scholarship Committee (2004-2008, 2014-to-date), Department of Mathematics, University of the Punjab, Lahore.
- **Member** Departmental Library Committee (2014-2019), Department of Mathematics, University of the Punjab, Lahore.
- Department **nominated** as *Volunteer Mentor Science Education Project* on 24-08-2004.
- **Coordinator** MSc (Honors) Program (2004-2006), Department of Mathematics, University of the Punjab, Lahore.
- **Assistant Editor** *Punjab University Journal of Mathematics* (2004-2007), Department of Mathematics, University of the Punjab, Lahore.
- **In charge** Computer Short Courses and Computer Center (2004-2007), Department of Mathematics University of the Punjab Lahore.

Memberships

- **Member Board of Faculty** (2004-2007 & 2013-2016), University of the Punjab, Lahore No. D/5693/Acad. Dated 26-11-2013.
- **Member Board of Studies** of Department of Mathematics, University of the Punjab, Lahore (2009-2012), No. D/4096/Acad. Dated 08-09-2009.
- **Member** Academic Staff Association (2004-to-date), University of the Punjab, Lahore.
- **Member Departmental Disciplinary Committee** (Since October 04, 2017), Department of Mathematics, University of the Punjab, Lahore.
- **Life Member** Punjab Mathematical Society, Lahore.
- **Member** Text-Book Review Committee **TRC** (2012-to-date), Punjab Text Book Board Curriculum Wing, Lahore.
- **Member** Departmental Admission Committee (2004- to-date), Department of Mathematics, University of the Punjab, Lahore.
- **Member**, Departmental Scholarship Committee (2004-to-date), Department of Mathematics, University of the Punjab, Lahore.
- **Member**, Departmental Purchase Committee (2004-2007, 2014- to-date), Department of Mathematics, University of the Punjab, Lahore.

Curriculum Development

- **Revised** BS 4 years Syllabi (2005, 2008), Department of Mathematics, University of the Punjab, Lahore.

- **Revised** MSc 2 years Syllabi Annual System (2005, 2009), Department of Mathematics, University of the Punjab, Lahore.
- **Member curriculum development for ADP (Associate degree Program) 2019.**

Computer Skills

- Familiar with *Mathematica- Computer Algebra System* for numeric, symbolic and graphics computation.
- Familiar with LaTeX Type Setting and proficient in applications of *Microsoft Office suit (Word, Excel, Power Point and Publisher)* in Windows environment with excellent report writing skills.
- Attended a course of *MS Office* (1995), Department of Computer Science, UET, Lahore.

Language Skills

Fluent in English, Urdu and Punjabi.

References:

Prof. Dr. Muhammad Aslam Malik

Department of Mathematics, University of the Punjab, Quaid –e-Azam Camus, Lahore.

Prof. Dr. Muhammad Akram

Department of Mathematics, University of the Punjab, Quaid –e-Azam Camus, Lahore.

Prof. Dr. Shahid S. Siddiqi

Ex-Chairman Department of Mathematics, University of the Punjab, Lahore.

Prof. Dr. Muhammad Sharif (T. I.)

Ex-Chairman Department of Mathematics, University of the Punjab, Quaid –e-Azam Camus, Lahore.

Prof. Dr. Syed Muhammad Husnine

Professor and Dean Faculty of Science and Humanities, NU-Fast Lahore.

Prof. Dr. Muhammad Shabir

Department of Mathematics, Quaid –i-Azam University, Islamabad.