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Aamir Farooq

Research Interests

Scientific Machine Learning & Physics-Informed Neural Networks (PINNs), Bio-Inspired Optimization, Uncertainty Quantification & Inverse Problems, Statistical Signal Processing & Information Bounds, Applications of Differential Equations and Nonlocal Models, and Numerical Linear Algebra and Matrix Perturbation Theory.

Education

Sep 2016 – Dec 2019 **Ph.D., Mathematics**, *Chongqing University*, Chongqing, China
Advisors: Prof. Chunlai Mu; Prof. Hanyu Li
Thesis: Refined Rigorous Perturbation Bounds for Some Matrix Factorizations.

Sep 2013 – Aug 2015 **M.S., Mathematics**, *COMSATS University Islamabad*, Wah Campus, Pakistan
Advisor: Prof. Muhammad Kamran
Thesis: Analytical Solution of the Fractional Oldroyd–B Fluid in a Fluctuating Duct.

Oct 2008 – Mar 2011 **M.Sc., Mathematics**, *University of Peshawar*, Peshawar, Pakistan
Focus: Theoretical Mathematics.

Sep 2006 – Oct 2008 **B.Sc., Mathematics & Physics**, *Islamia College University Peshawar*, Peshawar, Pakistan
Selected activities: Class representative; team projects linking math to real-world applications.

Professional Education

Sep 2014 – Feb 2016 **B.Ed.**, *Allama Iqbal Open University*, Islamabad, Pakistan
Topic: Studies focused on the teaching of mathematics and physics subjects

Teaching Experience

Title **Assistant Professor** **Jan 2026 - Present**
Institution Department of Applied Mathematics and Data Science, Asian University for Women, Chittagong-4000, Bangladesh
Taught Courses Calculus I, Probability and Statistics, Numerical Analysis I, and Advanced Mathematics

Title **Assistant Professor** **Nov 2020 - Dec 2022**
Institution Department of Mathematics, Abbottabad University of Science and Technology, Abbottabad, Pakistan
Taught Courses Linear Algebra, Calculus and Analytical Geometry, Mathematical Methods, Ordinary Differential Equations, Matrix Analysis with Applications

Title **Lecturer** **Sept 2015 - Aug 2016**
Institution Base College, Wah Cantt, Pakistan
Taught Courses College Mathematics

Title **Visiting Lecturer** **Sept 2014 - Aug 2015**
Institution Govt. College of Technology, Attock, Pakistan

Taught Courses: Engineering Mathematics to Associate Engineers

Title: **Science Teacher** — **Jan 2011 - Aug 2013**

Institution: Govt. Boys Higher Secondary School ARF PAC Kamra, Attock, Pakistan

Taught Courses: Mathematics, Computer Science, and Physics

Research Experience

Title: **Postdoctoral Fellowship** — **Jan 2024 - Dec 2025**

Institution: Department of Mathematics, Zhejiang Normal University, Jinhua, China

Research Topic: Scientific Machine Learning, Physics Informed Neural Networks (PINNs), and Integrable Systems

Title: **Postdoctoral Fellowship** — **Jan 2023 - Dec 2023**

Institution: Acoustic Signal Analysis and Processing Group, Faculty of Mechatronics, Informatics and Interdisciplinary Studies, Technical University of Liberec, Liberec, Czech Republic

Research Topic: Statistical Signal Processing and Independent Vector Extraction with Kronecker Product-Structured Parameters

Title: **Co-Principal Investigator** — **Jan 2020 - Oct 2020**

Institution: Sustainable Energy Technologies (SET) Center, College of Engineering, King Saud University, Saudi Arabia

Research Topic: Engineering Problems Using Tools of Mathematical Physics

Project Number: (RSP-2020/58), King Saud University, Riyadh, Saudi Arabia

Title: **Research Assistant** — **Sept 2016 - Dec 2019**

Institution: College of Mathematics and Statistics, Chongqing University, Shapinbga, Chongqing, China

Research Topic: Matrix Perturbation Theory

Project Number: National Natural Science Foundation of China, Stochastic Algorithms for Matrix Factorization, Stochastic Perturbation Analysis and Their Applications, 11671060, 2017.09-2020.12. (Participant)

Project Number: Chongqing Natural Science Foundation General Project, Stochastic Algorithm and Stochastic Perturbation Analysis of Indefinite Least Squares Problems, cstc2019jcyj-msxmX0267, 2019.07-2022.06, (Participant)

Title: **Research Assistant** — **Jul 2014 - Aug 2015**

Institution: Department of Mathematics, COMSATS University Islamabad, Wah Campus, Punjab, Pakistan

Research Topic: Analytical solution of Fractional Oldroyd-B Fluid Via Fluctuating Duct

Publications

1. Rehman, Sadique, and **Aamir Farooq***. "Coupling Physics-Informed Neural Networks and Regression Techniques for Modeling Cubic Stratified Nanofluid Flow in Magnetic Fields." Chinese Journal of Physics (2026). (Zone-II (CAS)), (Q-1), (SCI).
2. Amjad, Zeeshan, A. Eid, **Aamir Farooq***, Faisal Javed, Tajamal Mazhar, and N. Mustapha. "Symmetry-Breaking and Preserving Breather, Kink interactions of Nonlocal Complex-Coupled Dispersionless Equation." International Journal of Theoretical Physics 65, no. 3 (2026): 93. (Zone-III (CAS)), (Q-1), (SCI).
3. Nadeem, Uzma, Malik Ahsin Iqbal, Sadique Rehman, **Aamir Farooq***, Hijaz Ahmad, Fuad A. Awwad, and

Emad AA Ismail. "Constrained optimization in physics-informed neural networks for singular three-point boundary value problems." Ain Shams Engineering Journal 17, no. 4 (2026): 104063 (Zone-II (CAS)), (Q-1), (SCI).

4. Iqbal, Malik Ahsin, Uzma Nadeem, Sadique Rehman, **Aamir Farooq***, Hijaz Ahmad, Fuad A. Awwad, and Emad AA Ismail. "Hybrid-Optimized Gudermannian Neural Network for Oscillatory Dynamics." IEEE Access (2026) (Zone-IV (CAS)), (Q-1), (SCI).
5. Sadique Rehman, **Aamir Farooq***, and Malik Ahsin Iqbal, "Neuro-heuristic and regression-based modeling of three-dimensional Williamson–micropolar nanofluid flow with regularization and uncertainty quantification." *Engineering Applications of Artificial Intelligence*, (Accepted) (Zone-I (CAS)), (Q-1), (SCI).
6. Muhammad Qasim, Hamza Ali, **Aamir Farooq***, Muhammad Kamran, Hijaz Ahmad, Fuad A. Awwad, and Emad A. A. Ismail, "Intelligent neural framework for modeling the lifestyle-induced remission in type 2 diabetes." *Chaos, Solitons & Fractals*, (Accepted) (Zone-I (CAS)), (Q-1), (SCI).
7. Jamil, A., H. W. A. Riaz*, and **Aamir Farooq**, "Effects of non-commutativity on soliton behavior in baroclinic flows with time-dependent coefficients." *International Journal of Geometric Methods in Modern Physics*, (2026), (Accepted) (Zone-III (CAS)), (Q-1), (SCI).
8. Rafay Mustafa, Farman Ullah Khan*, **Aamir Farooq***, and Anam Rani, "Robust application of Bayesian neural networks to equilibrium dispersive model of chromatography using Monte Carlo simulations." *Chromatographia*, (2025), 1–17, (Zone-IV (CAS)), (Q-1), (SCI).
9. **Aamir Farooq**, Sadique Rehman, and Wen Xiu Ma*, Comparative Study of Regression-Based Data-Driven Models for Thermally Stratified Carreau Nanofluids with Magnesium Oxide Nanoparticles. *Physics of Fluids*, (Accepted) (Zone-II (CAS)), (Q-1), (SCI).
10. **Aamir Farooq**, Kamil Shah, Mohamed Anass El Yamani, Usman Khan, Jamal Shah, and Wen Xiu Ma*, Revolutionizing Corruption Dynamics: Integrating Jury Influence and Fractional Approaches with Neural Network and Optimal Control. *Expert Systems with Applications*, (Accepted) (Zone-I (CAS)), (Q-1), (SCI).
11. **Aamir Farooq**, Riaz, H. W. A., and Wen Xiu Ma*, On symmetry solutions of nonlocal complex coupled dispersionless system using Darboux transformation and artificial neural networks. *Chinese Journal of Physics*, (Accepted) (Zone-II (CAS)), (Q-1), (SCI).
12. Riaz, H. W. A. and **Aamir Farooq***, Hybrid analytical and neural-network approaches to the non-local short pulse equation. *The European Journal of Physics C*, (Accepted) (Zone-II (CAS)), (Q-1), (SCI).
13. **Aamir Farooq**, Riaz, H. W. A., Sadique Rehman, M. Mamun Miah, and Wen Xiu Ma*, Analytical and Numerical Soliton Solutions of the Shynaray II-A Equation Using the $(\frac{G'}{G}, \frac{1}{G})$-Expansion Method and Regularization-Based Neural Networks. *Mathematical Methods in the Applied Sciences*, (Accepted) (Zone-IV (CAS)), (Q-1), (SCI).
14. **Aamir Farooq**, Wen Xiu Ma*, Sadique Rehman, J. R. M. Borhan, and M. Mamun Miah, Unveiling Soliton Dynamics in the Unstable Nonlinear Schrödinger Equation Through Computational and Analytical Exploration. *Indian Journal of Physics*, (Accepted) (Zone-IV (CAS)), (Q-3), (SCI).
15. Neural and Neuro-Fuzzy Simulation of Mixed Convective Carreau Blood Nanofluid Flow with Magnesium Oxide Nanoparticles. Sadique Rehman, **Aamir Farooq***, Majid Hussain Shah, Marouan Kouki, Nehad Ali Shah. *Case Studies in Thermal Engineering* (Accepted): (Zone-II (CAS)), (Q-1), (SCI).
16. Riaz, H. W. A., **Aamir Farooq**, and J. Lin*, $\mathcal{PT}$-Symmetry in Nonlocal Spatial Discrete Complex Coupled Dispersionless System: Analytical and Computational Insights. *Nonlinear Dynamics* (Accepted) (Zone-II (CAS)), (Q-1), (SCI).
17. Riaz, H. W. A., and **Aamir Farooq***. "Solitonic solutions for the reduced Maxwell-Bloch equations via the Darboux transformation and artificial neural network in nonlinear wave dynamics." *Physica Scripta* 99, no. 12 (2024): 126010. (Zone-III (CAS)), (Q-2), (SCI).
18. Wang, Fuzhang, Sadique Rehman, Majid Hussain Shah, Mohamed Anass El Yamani, Sohail Farooq, and **Aamir Farooq***. "Numerical computation of Cross nanofluid model using neural network and Adaptive Neuro-Fuzzy Inference system with statistical insights for enhanced flow optimization." *Expert Systems with Applications* (2024): 125721. (Zone-I (CAS)), (Q-1), (SCI).
19. Riaz, H. W. A., and **Aamir Farooq***. "A (2+1) modified KdV equation with time-dependent coefficients: exploring soliton solution via Darboux transformation and artificial neural network approach." *Nonlinear Dynamics* (2024): 1–17. (Zone-II (CAS)), (Q-1), (SCI).
20. Shah, Kamil, Liu Wenqi, Mohamed Anass El Yamani, Usman Khan, Sadique Rehman, and **Aamir Farooq***. "Neural Network Approach for Cholera Dynamics: Integrating Deterministic and Stochastic Insights." *Knowledge-*

Based Systems (2024): 111957. (Zone-I (CAS)), (Q-1), (SCI).

21. **Aamir Farooq**, Sadique Rehman, Mujahid Ullah, M. S. Abbas, K. El-Rashidy, M. Mamun Miah*, and Mohammad Kanan. "Numerical Computation and Statistical Interpretations of Heat Transfer of Tween-20/ethyl Acetate Nanofluid Flow with Melting Rheological Quality and Activation Energy." *Contemporary Mathematics* (2024): 4949–4974. (Zone-IV (CAS)), (Q-3), (SCI).
22. Wang, Fuzhang, Rujda Parveen, Sadique Rehman, **Aamir Farooq***, Hadil Alhazmi, A. F. Aljohani, Ilyas Khan, and Abdulrahman S. A. Omer. "Artificial Neural Computing and Statistical Analysis of Heat and Mass Transport of Nanofluid Flow with Melting Heat and Thermal Stratification." *Case Studies in Thermal Engineering* (2024): 104563. (Zone-II (CAS)), (Q-1), (SCI).
23. Zbynek Koldovsky*, Jaroslav Čmejla, and **Aamir Farooq**. "Blind source extraction using Kronecker product structured mixing model." *The Journal of the Acoustical Society of America* 155, no. 3 Supplement (2024): A141–A142. (Zone-III (CAS)), (Q-1), (SCI).
24. **Aamir Farooq***, Rewayat Khan, Uzma Rani, and Mohammad Tariq Rahim. "Rigorous perturbation bounds for the QX decomposition for centrosymmetric matrices." *Linear and Multilinear Algebra* (2025): 1–26. (Zone-IV (CAS)), (Q-2), (SCI).
25. **Aamir Farooq***, Mahvish Samar, Rewayat Khan, Hanyu Li, and Muhammad Kamran. "Perturbation analysis for the Takagi vector matrix." *Special Matrices* 10, no. 1 (2022): 23–33. (Zone-IV (CAS)), (Q-2), (SCI).
26. **Aamir Farooq***, and Mahvish Samar. "Multiplicative perturbation bounds for the block Cholesky downdating problem." *International Journal of Computer Mathematics* 97, no. 12 (2020): 2421–2435. (Zone-IV (CAS)), (Q-1), (SCI).
27. **Aamir Farooq***, Mahvish Samar, Hanyu Li, and Chunlai Mu. "Sensitivity analysis for the block Cholesky downdating problem." *International Journal of Computer Mathematics* 97, no. 6 (2020): 1234–1253. (Zone-IV (CAS)), (Q-1), (SCI).
28. **Aamir Farooq***, and Mahvish Samar. "Sensitivity analysis for the generalized Cholesky block downdating problem." *Linear and Multilinear Algebra* (2020): 1–26. (Zone-IV (CAS)), (Q-2), (SCI).
29. **Aamir Farooq**, Mahvish Samar, Hanyu Li*, and Chunlai Mu. "Improved Rigorous Multiplicative Perturbation Bounds For The Generalized Cholesky Factorization And The Cholesky–Like Factorization." *Math. Inequal. Appl.* 22 (2019): 133–149. (Zone-IV (CAS)), (Q-2), (SCI).
30. Samar, Mahvish*, **Aamir Farooq**, Chunlai Mu, and Iram Mushtaq. "Indefinite least squares problem with quadratic constraint and its condition numbers." *J. Math. Res. Appl.* 40, no. 1 (2020): 57–72. (Zone-IV (CAS)), (Q-2), (SCI).
31. Samar, Mahvish*, **Aamir Farooq**, and Chun-lai Mu. "Structured condition numbers and statistical condition estimation for the LDU factorization." *Applied Mathematics–A Journal of Chinese Universities* 35, no. 3 (2020): 332–348. (Zone-IV (CAS)), (Q-2), (SCI).
32. Samar, Mahvish, and **Aamir Farooq**. "Refined rigorous perturbation bounds for the SR decomposition." *Applied Mathematics–A Journal of Chinese Universities* 36, no. 4 (2021): 537–553. (Zone-IV (CAS)), (Q-2), (SCI).
33. Samar, Mahvish, **Aamir Farooq**, Hanyu Li*, and Chunlai Mu. "Sensitivity analysis for the generalized Cholesky factorization." *Applied Mathematics and Computation* 362 (2019): 124556. (Zone-II (CAS)), (Q-1), (SCI).
34. Khan, Rewayat*, and **Aamir Farooq**. "Generalized Crofoot transform and applications." *Concrete Operators* 10, no. 1 (2023): 20220138. (Zone-IV (CAS)), (Q-3), (SCI).
35. H. W. A. Riaz* and **Aamir Farooq**, Exact solutions and nonlinear wave interactions in a non-commutative coupled dispersionless system with variable coefficients. *Nonlinear Dynamics* (Accepted) (Zone-II (CAS)), (Q-1), (SCI).
36. Abdullah Khan*, **Aamir Farooq**, Shaaban M. Shaaban, and Azeem Hafiz P A. "Role of Modified Cairns–Tsallis Distribution on Modulational Instability and Akhmediev Breathers in Electronegative Plasmas." *Communications in Nonlinear Science and Numerical Simulation* (2025): (Accepted). (Zone-II (CAS)), (Q-1), (SCI).
37. Sadique Rehman, **Aamir Farooq**, H. W. A. Riaz*, Kamran Ullah Khan, Majid Hussain Shah, Muhammad Ramzan. "Analyzing the Double-chain Deoxyribonucleic Acid Model: bifurcation, chaos, and sensitivity insights through advanced analytical Techniques." *Theory in Biosciences* (2025): (Accepted). (Zone-IV (CAS)), (Q-3), (SCI).
38. Muhammad Ishfaq Khan, H. W. A. Riaz, Saira Basharat, **Aamir Farooq***, Jamilu Sabi'u. "Modulation Instability and Nonlinear Dynamics in the (2+1)-Dimensional Complex mKdV System: Innovative Soliton

Solutions via Jacobi Elliptic Function Method." *Pramana* (2025): (Accepted). (Zone-IV (CAS)), (Q-2), (SCI).

39. Abdullah Khan*, **Aamir Farooq**, A. A. Abid, Malik Sadam Hussain, Wen-Xiu Ma, and Shaaban M. Shaaban. "Exploring non-Maxwellian distributions' effects on modulational instability and rogue wave triplets in ion-acoustic plasmas." *Chaos, Solitons & Fractals* (2025): 116262. (Zone-I (CAS)), (Q-1), (SCI).
40. Khan, M. Waleed Ahmed, Imad Khan*, and **Aamir Farooq**. "Thermal evaluation of curved stretching surface with porosity and ternary hybrid nanofluid: Utilizing a shooting numerical approach." *Journal of Thermal Analysis and Calorimetry* (2025): 1–12. (Zone-III (CAS)), (Q-2), (SCI).
41. Riaz, H. W. A., and **Aamir Farooq***. "Analytical solutions and instability analysis of truncated M-fractional coupled dispersionless equations." *Physica Scripta* 99, no. 12 (2024): 125230. (Zone-III (CAS)), (Q-2), (SCI).
42. H. W. A. Riaz and **Aamir Farooq***. "Exploring soliton solutions of coupled dispersionless equations with new insights into bifurcation, chaos, and sensitivity through advanced analytical techniques." *Optical and Quantum Electronics* 56, no. 11 (2024): 1–25. (Zone-III (CAS)), (Q-2), (SCI).
43. Khan, Muhammad Ishfaq, Abdullah Khan, and **Aamir Farooq***. "Analyzing the Kuralay-II equation: bifurcation, chaos, and sensitivity insights through conformable derivative and Jacobi elliptic function expansion." *Physica Scripta* 99, no. 9 (2024): 095210. (Zone-III (CAS)), (Q-2), (SCI).
44. Khan, Muhammad Ishfaq, Jamilu Sabi'u, Abdullah Khan, Sadique Rehman, and **Aamir Farooq***. "Unveiling new insights into soliton solutions and sensitivity analysis of the Shynaray-IIA equation through improved generalized Riccati equation mapping method." *Optical and Quantum Electronics* 56, no. 8 (2024): 1339. (Zone-III (CAS)), (Q-2), (SCI).
45. **Aamir Farooq***, Muhammad Ishfaq Khan, and Wen Xiu Ma. "Exact solutions for the improved mKdv equation with conformable derivative using the Jacobi elliptic function expansion method." *Optical and Quantum Electronics* 56, no. 4 (2024): 542. (Zone-III (CAS)), (Q-2), (SCI).
46. **Aamir Farooq***, Wen Xiu Ma, and Muhammad Ishfaq Khan. "Exploring exact solitary wave solutions of Kuralay-II equation based on the truncated M-fractional derivative using the Jacobi Elliptic function expansion method." *Optical and Quantum Electronics* 56, no. 7 (2024): 1105. (Zone-III (CAS)), (Q-2), (SCI).
47. **Aamir Farooq***, Muhammad Ishfaq Khan, Kottakkaran Sooppy Nisar, and Nehad Ali Shah. "A detailed analysis of the improved modified Korteweg-de Vries equation via the Jacobi elliptic function expansion method and the application of truncated M-fractional derivatives." *Results in Physics* 59 (2024): 107604. (Zone-II (CAS)), (Q-1), (SCI).
48. Khan, Muhammad Ishfaq, **Aamir Farooq***, Kottakkaran Sooppy Nisar, and Nehad Ali Shah. "Unveiling new exact solutions of the unstable nonlinear Schrödinger equation using the improved modified Sardar sub-equation method." *Results in Physics* 59 (2024): 107593. (Zone-II (CAS)), (Q-1), (SCI).
49. Raza, Haider, Sohail Farooq, Sobia Sattar, Sadique Rehman, **Aamir Farooq***, Muhammad Kamran, Mansoor Alshehri, and Nehad Ali Shah. "Melting phenomenon of thermally stratified MHD Powell–Eyring nanofluid with variable porosity past a stretching Riga plate." *Reviews on Advanced Materials Science* 63, no. 1 (2024): 20240020. (Zone-III (CAS)), (Q-2), (SCI).
50. Hayat, U., Shaiq, S., Nisar, K. S., Shahzad, A., **Aamir Farooq***, Kamran, M., and Shah, N. A., 2024. Comparative study of copper nanoparticles over radially stretching sheet with water and silicone oil. *Nanotechnology Reviews*, 13(1), 20230200. (Zone-III (CAS)), (Q-1), (SCI).
51. Ganie, Abdul Hamid, Mashael M. AlBaidani, Sohail Farooq, Sadique Rehman, **Aamir Farooq***, Faisal Z. Duraihem, Sayed M. El Din, and Ilyas Khan. "Computational assessment of thermally stratified magnetohydrodynamics Maxwell nanofluid with joule heating and melting heat transfer." *Results in Physics* (2023): 106542. (Zone-II (CAS)), (Q-1), (SCI).
52. Lin, Yuanjian, Sadique Rehman, Nevzat Akkurt, Tim Shedd, Muhammad Kamran, Muhammad Imran Qureshi, Thongchai Botmart, Abdulaziz N. Alharbi, **Aamir Farooq***, and Ilyas Khan. "Free convective trickling over a porous medium of fractional nanofluid with MHD and heat source/sink." *Scientific Reports* 12, no. 1 (2022): 1–17.
53. **Farooq, Aamir***, Sadique Rehman, Abdulaziz N. Alharbi, Muhammad Kamran, Thongchai Botmart, and Ilyas Khan. "Closed-form solution of oscillating Maxwell nano-fluid with heat and mass transfer." *Scientific Reports* 12, no. 1 (2022): 1–13. (Zone-III (CAS)), (Q-1), (SCI).
54. Zhang, Juan, Fuzhang Wang, Muhammad Tamoor, Muhammad Kamran, **Aamir Farooq***, Sadique Rehman, Amnah S. Aljohani, Ilyas Khan, Soliman Alkhatib, and Hijaz Ahmad. "Influence of chemical reaction on MHD Newtonian fluid flow on a vertical plate in a porous medium in conjunction with thermal radiation." *Open*

Physics 20, no. 1 (2022): 302–312. (Zone-III (CAS)), (Q-1), (SCI).

55. Muhammad Kamran*, **Aamir Farooq**, Hijaz Ahmad, Yu-Ming Chu, Azeem Shahzad, Farman Ullah Khan, Ali Sikandar Khan. "On the Taylor-Couette Flow of Fractional Oldroyd-B Fluids in a Cylindrically Symmetric Configuration Using Transforms." *International Journal of Modern Physics C* (2022). (Zone-IV (CAS)), (Q-3), (SCI).
56. Zheng, Kehong, Fuzhang Wang, Muhammad Kamran, Rewayat Khan, Ali Sikandar Khan, Sadique Rehman, and **Aamir Farooq***. "On rate type fluid flow induced by rectified sine pulses." *AIMS Mathematics* 7, no. 2 (2022): 1615–1627. (Zone-III (CAS)), (Q-1), (SCI).
57. Tang, Ruihua, Sadique Rehman, **Aamir Farooq**, Muhammad Kamran, Muhammad Imran Qureshi, Asfand Fahad*, and Jia-Bao Liu. "A comparative study of natural convection flow of fractional Maxwell fluid with uniform heat flux and radiation." *Complexity* 2021 (2021). (Zone-IV (CAS)), (Q-2), (SCI).
58. Tamoor, Muhammad, Muhammad Kamran, Sadique Rehman, **Aamir Farooq**, Rewayat Khan, Jung Rye Lee, and Dong Yun Shin. "Modelling of Applied Magnetic Field and Thermal Radiations Due to the Stretching of a Cylinder." *Processes* 9, no. 6 (2021): 1077. (Zone-IV (CAS)), (Q-2), (SCI).
59. Wang, Fuzhang, Juan Zhang, Imtiaz Ahmad*, **Aamir Farooq**, and Hijaz Ahmad. "A novel meshfree strategy for a viscous wave equation with variable coefficients." *Frontiers in Physics* 9 (2021): 359. (Zone-IV (CAS)), (Q-2), (SCI).
60. Kamran, Muhammad, Yasir Bashir, **Aamir Farooq**, Azeem Shahzad, A. Mousa Abd Allah, Hammad Alotaibi, and Hijaz Ahmad*. "Study the helicoidal flow through cylindrical annuli with prescribed shear stresses." *Results in Physics* 23 (2021): 103993. (Zone-II (CAS)), (Q-1), (SCI).
61. **Aamir Farooq**, Muhammad Kamran, Yasir Bashir, Hijaz Ahmad, Azeem Shahzad, and Yu-Ming Chu. "On the flow of MHD generalized Maxwell fluid via the porous rectangular duct." *Open Physics* 18, no. 1 (2020): 989–1002. (Zone-IV (CAS)), (Q-2), (SCI).
62. Song, Ying Qing, **Aamir Farooq**, Muhammad Kamran, Sadique Rehman, Muhammad Tamoor, Rewayat Khan, Asfand Fahad, and Muhammad Imran Qureshi. "Analytical Solution of Fractional Oldroyd-B Fluid via Fluctuating Duct." *Complexity* 2021 (2021). (Zone-IV (CAS)), (Q-2), (SCI).
63. Wang, Fuzhang, Sadique Rehman, Jamel Bouslimi, Hammad Khaliq, Muhammad Imran Qureshi, Muhammad Kamran, Abdulaziz N. Alharbi, Hijaz Ahmad, and **Aamir Farooq***. "Comparative study of heat and mass transfer of generalized MHD Oldroyd-B bio-nano fluid in a permeable medium with ramped conditions." *Scientific Reports* 11, no. 1 (2021): 1–32. (Zone-III (CAS)), (Q-1), (SCI).
64. Ahmed, Jawad, Azeem Shahzad, **Aamir Farooq**, Muhammad Kamran, Salah Ud-Din Khan, and Shahab Ud-Din Khan. "Thermal analysis in swirling flow of titanium dioxide-aluminum oxide water hybrid nanofluid over a rotating cylinder." *Journal of Thermal Analysis and Calorimetry* 144, no. 6 (2021): 2175–2185. (Zone-III (CAS)), (Q-2), (SCI).
65. Shahzad, Azeem, Ramzan Ali, Muhammad Kamran, Salah Ud-Din Khan, Shahab Ud-Din Khan, and **Aamir Farooq**. "Axisymmetric flow with heat transfer over exponentially stretching sheet: A computational approach." *Physica A: Statistical Mechanics and its Applications* 554 (2020): 124242. (Zone-II (CAS)), (Q-2), (SCI).
66. Ahmed, Jawad, Azeem Shahzad, **Aamir Farooq**, Muhammad Kamran, Salah Ud-Din Khan, and Shahab Ud-Din Khan. "Radiative heat transfer in Homann stagnation-point flow of hybrid nanofluid." *Applied Nanoscience* 10, no. 12 (2020): 5305–5314. (Zone-IV (CAS)), (Q-4), (SCI).
67. Shahzad, Azeem, Uzma Gulistan, Ramzan Ali, Azhar Iqbal, Ali Cemal Benim, Muhammad Kamran, Salah Ud-Din Khan, Shahab Ud-Din Khan, and **Aamir Farooq**. "Numerical Study of Axisymmetric Flow and Heat Transfer in a Liquid Film over an Unsteady Radially Stretching Surface." *Mathematical Problems in Engineering* 2020 (2020). (Zone-IV (CAS)), (Q-4), (SCI).

Conferences/ Workshops/Seminars

1. Attended the 10th International Conference on Nonlinear Mathematical Physics and The 17th National Workshop on the Solitons and Integrable Sytems, Lishui-China. 19-22 April, 2024

[0] *Corresponding Author

2. Attended the workshop "Biomedical Fluid Mechanics," Institute of Mathematics, CAS, Žitná 25, Prague 1, Czech Republic. 12-16 June, 2023

3. Two-day Mathematics seminar series, Abbottabad University of Science and Technology, Abbottabad, Pakistan. Jun, 29-Jul, 1, 2021

4. Talk Presented at the "Second International Workshop on Matrix Theory and Applications," IBA Sukkar, Pakistan. 15-17 Nov, 2022

5. Talk Presented at the "First SIBAU-NU Workshop on Matrix Analysis and Linear Algebra," IBA Sukkar, Pakistan. 15-17 Oct, 2021

6. Seminar on Matrix and Statistics 2017, Chongqing University, Chongqing, China. Nov, 11-12, 2017

7. Matrix Inequalities and Matrix Equations (MIME 2017), Shanghai University, Shanghai, China. June 6-8, 2017

8. Matrices and Operators 2017, Hunan University, Changsha, China. June 9-12, 2017

9. 1st International Conference on Advancements in Mathematics 2015, CIIT Attock, Pakistan. Feb 11-13, 2015

10. During my Bachelor of Education degree, I participated in a professional workshop organized by Allama Iqbal Open University, Islamabad, Pakistan, to learn and present various scientific concepts and applied to practice issues.

Awards

2016 Chinese Government Scholarship for PhD in Mathematics

2015 Certificate of Appreciation in COMSATS Mathematical Olympiad

2003-2010 Fauji Foundation Scholarship

Computer Skills

MATLAB, Google Colab, Mathcad, Mathematica, Maple, Python, Latex, MS Office Professional

Languages

English, Urdu Fluent

Pushtu Mother-tongue

Supervised Students

1. Muhammad Qasim (Co-Supervised With Dr. Muhammad Kamran) PhD

   Status: In Progress

   Registration Number: CIIT/FA22-PMT-002/WAH

   Thesis Title: Adapting Machine Learning Algorithms to Train Evolutionary-Like Systems of Differential Equations

2. Hamza Ali (Co-Supervised With Dr. Muhammad Kamran) Master

   Status: Completed

   Registration Number: CIIT/FA23-RMT-005/WAH

Thesis Title: Comparative Study of Drug Diffusion Model Using Machine Learning Techniques

3. Sadaf Iqbal (Co-Supervised With Dr. Muhammad Kamran) Master
   Status: Completed
   Registration Number: CIIT/FA22-RMT-001
   Thesis Title: Forecasting of financial bubble model using machine learning techniques

4. Uzma Rani (Co-Supervised With Dr. Mohammad Tariq Rahim) Master
   Status: Completed
   Registration Number: 9289
   Thesis Title: Non-Linear Perturbation Bounds for the QX Decomposition for Centrosymmetric Matrices

5. Muhammad Naveed (Co-Supervised With Dr. Mohammad Tariq Rahim) Master
   Status: Completed
   Registration Number: 8064
   Thesis Title: Computational Assessment of Stratified MHD Maxwell Nanofluid with Joule Heating and Melting Heat Transfer

6. Sobia Sattar (Co-Supervised With Dr. Muhammad Kamran) Master
   Status: Completed
   Registration Number: CIIT/FA21-RMT-005/WAH
   Thesis Title: Mixed Convective Flow of Carreau Nanofluid with Melting Rheology and Thermal Stratification

7. Haider Ali Raza (Co-Supervised With Dr. Muhammad Kamran) Master
   Status: Completed
   Registration Number: CIIT/FA21-RMT-003/WAH
   Thesis Title: Melting Phenomenon of Thermally Stratified Powell-Eyring Nanofluid with Variable Porosity and Thermal Slip

8. Ali Sikandar Khan (Co-Supervised With Dr. Muhammad Kamran) Master
   Status: Completed
   Registration Number: CIIT/SP18-RMT-005/WAH
   Thesis Title: Fractional Model for Concentration of Blood Affecting ESR

9. Shabir Khan (Co-Supervised With Dr. Muhammad Kamran) Master
   Status: Completed
   Registration Number: CIIT/FA14-RMT-003/WAH
   Thesis Title: On the Flow of Generalized Maxwell Fluid Via Porous Rectangular Duct

10. Abdul Basit Naveed (Co-Supervised With Dr. Muhammad Asfand) Master
    Status: Completed
    Registration Number: CIIT/FA19-RMT-001/VHR
    Thesis Title: Caputo-Fabrizio Fractional Modeling of ESR Test

11. Hasina Ameer (Co-Supervised With Dr. Muhammad Asfand) Master
    Status: Completed

Registration Number: CIIT/FA19-RMT-008/VHR
Thesis Title: Comparative Study for the Fractional ESR Test

12. Babar Gulzar (Co-Supervised With Dr. Muhammad Imran Qureshi) Master
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Registration Number: CIIT/FA19-RMT-007/VHR
Thesis Title: Comparative Study of Fractional Fluid Flow and Oscillatory Process Models