

Shams Ul Arifeen

Personal Information

Nationality Pakistani
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Present Address Department of Mathematics, School of Natural Sciences, National University of Sciences & Technology, Islamabad, Pakistan
Permanent Address Village Jinjirate, Post Office Drosh, District Chitral, Khyber Pakhtunkhwan, Pakistan

Education

2019–2023 **Doctor of Philosophy in Applied Mathematics**, *Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*
Thesis Title: Galerkin and Petrov-Galerkin Finite Element Method for Integer and Fractional Order Differential Equations
2016–2018 **Master of Science in Applied Mathematics**, *Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*
Thesis Title: Wavelet Method for Solution of Differential Equations
2013–2016 **Master of Science in Mathematics (16 years)**, *University of Peshawar, Peshawar*
2011–2013 **Bachelor of Science (14 years)**, *Shaheed Benazir Bhutto University, Sheringal*
2009–2011 **Higher Secondary School Certificate (12 years)**, *BISE Peshawar*
2007–2009 **Secondary School Certificate (Science Group) (10 years)**, *BISE Peshawar*

Research Interest

- Numerical Computing
- Finite Element Method
- B-Spline and Polynomial Approximation
- Haar-Wavelet
- Machine learning

Research Project

Title Bridgng mathematics and machine learning: PINNs for direct and inverse problem
Fund 1,200,000

Work Experience

- January 2026–Present **Assistant Professor**, *National University of Sciences & Technology, Islamabad*
Course Taught
- Differential Geometry
 - Finite Volume Method
- July 2023–Jan 2026 **Assistant Professor**, *National University of Computer & Emerging Sciences, Peshawar Campus*
Course Taught
- Numerical Computing
 - Calculus
 - Multivariable Calculus
 - Linear Algebra
 - Probability and Statistics
- January 2023–Jun 2023 **Lecturer**, *National University of Computer & Emerging Sciences, Peshawar Campus*
Course Taught
- Calculus & Analytical Geometry
- 2019–2022 **Graduate Assistant**, *Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*
Courses Taught
- Numerical Analysis
 - Differential Equations
 - Calculus
- 2018–2019 **Visiting Lecturer**, *University of Swabi, Swabi, KP*
Courses Taught
- Linear Algebra
 - Differential Equations
 - Calculus
- 2018–2023 **Visiting Lecturer**, *Shuhada-e-Army Public School University of Technology, Nowshera, KP*
Courses Taught
- Differential Equations
 - Calculus
- 2016–2018 **Graduate Assistant**, *Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*
Teaching Assistant
- Numerical Analysis
 - Differential Equations
 - Calculus

■ Programming Experience

- Matlab
- Mathematica
- Maple
- C Language

Languages

- Urdu
- English
- Khwar

Awards and Scholarships

PhD Program	Graduate Assistantship scholarship for PhD studies from Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi, Swabi, Khyber Pakhtunkhwa
MS Program	Graduate Assistantship scholarship for MS studies from Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi, Swabi, Khyber Pakhtunkhwa
MSc Program	Merit scholarship of Khyber Pakhtunkhwa government and Prime Minister fee reimbursement scheme
BSc Program	Merit scholarship for BSc Program from Hira Model School and Degree College Drosh
HSSC Program	Stoori da Khyber Pakhtunkhwa merit scholarship program

Publications

1. T. Akbar, **S. U. Arifeen**, I. Ali, S. A. Idris, S. Islam : Computational study of variable order time-fractional differential equations arising in modeling of transport processes and viscoelastic oscillator, Ain Shams Engineering Journal, 16 (9), 103532.
2. **S. U. Arifeen**, I. Ali, S. Haq, S. A. Idris, S. Islam : Comparative study of slow and fast diffusion processes via quadratic and cubic B-spline Galerkin method, Ain Shams Engineering Journal, 16 (8), 103449.
3. Sirajul Haq, Ayesha Noreen, Tanveer Akbar, **Shams Ul Arifeen**, Abdul Ghafoor, Zareen A : Numerical solution of seventh order KdV equations via quintic B-splines collocation method, Alexandria Engineering Journal, 2025, IF 6
4. Ihteram Ali, **Shams Ul Arifeen**, Manzoor Hussain, and Sahar Ahmad Idris : Integrated Lucas and Fibonacci polynomial approach for time fractional fast and slow diffusion models, International Journal of Modern Physics C, 2025, IF 1.5
5. **Shams Ul Arifeen**, Sirajul Haq, and I. Ali: Galerkin approximation of Burgers-Huxley equation with fractional order arising in reaction mechanism and diffusion transport, Physica Scripta, 2024, IF 2.6
6. **Shams Ul Arifeen**, S. Haq, and I. Ali : Galerkin approximation for multi-term time-fractional differential equations, Ain Shams Engineering Journal, 2024, IF 6

7. **Shams Ul Arifeen**, I. Ali, I. Ahmad, and S. Shaheen: Computational Study of time-fractional non-linear Kawahara equations Using Quintic B-spline and Galerkin's Method, Partial Differential Equations in Applied Mathematics, 2024
8. **T. Akbar**, S. Haq, and **Shams Ul Arifeen**: Computational study of coupled Whitham Broer Kaup equations via interpolation technique, Ain Shams Engineering Journal, 2024, IF 6
9. **A. Ghafoor**, M. Hussain, D. Ahmad, and **Shams Ul Arifeen**: Approximation of one and two dimensional nonlinear generalized Benjamin-Bona-Mahony Burgers' equation with local fractional derivative, Computers and Mathematics with Applications, 2024, IF 2.9
10. **T. Akbar**, S. Haq, and **Shams Ul Arifeen**: Numerical Solution of Third-Order Rosenau–Hyman and Fornberg–Whitham Equations via B-Spline Interpolation Approach, Axioms, 2024, IF 1.9
11. M. Hussain, A. Ghafoor, A. Hussain, S. Haq, I. Ali, and **Shams Ul Arifeen**: A hybrid kernel-based meshless method for numerical approximation of multidimensional Fisher's equation, Mathematics and Computers in Simulation, 2024, IF 4.6
12. Ihteram Ali, Sirajul Haq, M Hussain, K. Sooppy, and **Shams Ul Arifeen**: On the analysis and application of a spectral collocation scheme for the nonlinear two-dimensional fractional diffusion equation, Results in Physics, 2024, IF 5.3
13. Sirajul Haq, **Shams Ul Arifeen** and Ayesha Noreen: An efficient computational technique for higher order KdV equation arising in shallow water waves, Applied Numerical Mathematics, IF 2.994
14. **Shams Ul Arifeen** and Sirajul Haq: Petrov–Galerkin approximation of time-fractional coupled Korteweg–de Vries equation for propagation of long wave in shallow water, Mathematics and Computers in Simulation, IF 3.601
15. **Shams Ul Arifeen**, Sirajul Haq and G. Farhan: Computational study of multiterm time-fractional differential equation using cubic B-spline finite element method, Complexity, IF 2.121
16. M Ahsan, W Lei, AA Khan, A Ullah, S Ahmad, **Shams Ul Arifeen**, Z Uddin, H Qu: A high-order reliable and efficient Haar wavelet collocation method for nonlinear problems with two point-integral boundary conditions, Alexandria Engineering Journal, IF 6.626
17. I. Ali, Shams Ul Haq, R. Ullah, and **Shams Ul Arifeen**: Approximate solution of second Order singular perturbed and obstacle boundary value problems using meshless method based on Radial basis functions, Journal of Nonlinear Mathematical Physics, IF 1.163
18. S. Haq, A. Ghafoor, M. Hussain and **Shams Ul Arifeen**: Numerical solutions of two dimensional Sobolev and generalized Benjamin–Bona–Mahony–Burgers equations via Haar wavelets, Computers and Mathematics with Applications, IF 3.128
19. **Shams Ul Arifeen**, S Haq, A Ghafoor, A Ullah, P Kumam, and P Chaipanya: Numerical solutions of higher order boundary value problems via wavelet approach , Advances in Difference Equations, IF 2.830
20. I. Ali, S. Haq, K. Nisar and **Shams Ul Arifeen**: Numerical study of 1D and 2D advection-diffusion-reaction equations using Lucas and Fibonacci polynomials, Arabian Journal of Mathematics IF 3.128

Journal Peer Review

- International Journal of Applied and Computational Mathematics
- Journal of Ocean Engineering and Science
- Computer and Mathematics with Applications

Conferences

- International Photonics Symposium”, Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, April 2018
- “First Int. Pak-Turk Workshop on Emerging Technology in the field of Science and Engineering”, Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, May 2018
- Fourth Conference on Numerical Methods for Fractional-Derivative Problems
- International Confrence on Emerging Technologies, FAST-NUCES, Peshawar Campus, 2023

References

Prof. Dr. Sirajul Haq

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