# Dr. SAMREEN ABBAS

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| https://www.gcwus.edu.pk/staff-member/ms-samreen-abbas (URL) |

## PROFESSIONAL SUMMARY

As an Assistant Professor at GC Women University, Sialkot, my research lies at the intersection of applied and computational mathematics. Since completing my PhD in Mathematics from the University of the Punjab, Lahore, in 2018, my scholarly work has primarily focused on the development of advanced spline-based methodologies and efficient numerical techniques for solving differential equations, as well as applications in object modeling and data visualization. With eight publications in internationally recognized, peer-reviewed ISI-indexed journals, my research contributes to both the theoretical advancement and practical implementation of mathematical methods. In parallel with my research activities, I am deeply committed to teaching and mentoring, with a strong emphasis on equipping students with robust mathematical skills essential for academic and professional success.

## CURRENT POSITION / AFFILIATION

Since 02 / 2019      Assistant Professor, GC Women University, Sialkot, Pakistan

## ACADEMIC ACCOMPLISHMENTS

PhD in Mathematics, University of the Punjab, Lahore, Pakistan
Title of thesis: Digital Image Processing using Soft Computing Techniques and Spline Representation
http://prr.hec.gov.pk/jspui/handle/123456789/9359  (Gov't Doc No.: 15060)

## PROFESSIONAL CAREER

| | |
|---|---|
| 10 / 2016 – 02 / 2019 | **Lecturer**, Department of Mathematics, Govt. College Women University, Sialkot, Pakistan |
| 08 / 2012 – 10 / 2016 | **Research Scholar**, Department of Mathematics, Govt. College Women University, Sialkot, Pakistan |
| 07 / 2009 – 08 / 2012 | **Lecturer**, Department of Mathematics, Punjab College of Sciences, Sialkot, Pakistan |
| 11 / 2006 – 08 / 2007 | **Subject Specialist**, TICS Department, Punjab Education Foundation, Lahore, Pakistan |

## ACADEMIC & RESEARCH INTERESTS

- Data Visualization
- Mathematical Imaging
- Computer Aided Geometric Designing
- Spline-Based Mathematical Techniques
- Numerical Solutions of Ordinary & Partial Differential Equations

## CITATIONS AND OTHER STATISTICS (as of June 2024)

A H−index:4
i10-index (Google Scholar):3
Cumulative Impact Factor (IF): 14.5
Cumulative Citations (Google Scholar):69
Cumulative Citations (Scopus): 46
Total Number of Research Articles Published: 08
Number of Research Articles (ISI/IF-Journals) Published: 06
Number of Research Articles (Conferences) Published: 02

Lectures delivered in Local/International Conferences: 05
MS Thesis Supervised: 01 (Complete) 02 (In Progress)
PHD Thesis Supervised: 01 (In Progress)

## RESEARCH IDENTITIES

Web of Science Researcher ID: AAZ-4993-2020
Elsevier | Scopus Author ID: 57192674242
ORCID: 0000-0003-3708-0115

## PUBLICATIONS

### REFREED JOURNALS

- **Samreen Abbas**, Malik Zawwar Hussain, Qurat-ul-Ain, An optimal B-spline approach for vectorizing raster image outlines, PLoS One, 19(8): e0307530, 26 August 2024. DOI: [10.1371/journal.pone.0307530](10.1371/journal.pone.0307530) (Impact Factor=2.9)
- **Samreen Abbas,** Malik Zawwar Hussain, Misbah Irshad, Image Interpolation by Rational Ball Cubic B-Spline Representation and Genetic Algorithm, Alexandria Engineering Journal, 57(2): 931-937, June 2018. DOI: [10.1016/j.aej.2017.01.004](10.1016/j.aej.2017.01.004) (Impact Factor=6.2)
- **Samreen Abbas,** Misbah Irshad, Malik Zawwar Hussain, Adaptive image interpolation technique based on cubic trigonometric B-spline representation, IET Image Processing, 12(5): 769-777, May 2018. DOI: [10.1049/iet-ipr.2016.0393](10.1049/iet-ipr.2016.0393) (Impact Factor=2.0)
- Malik Zawwar Hussain, **Samreen Abbas**, Misbah Irshad, Quadratic Trigonometric B-spline for Image Interpolation using GA, PLoS One, 12(6): e0179721, 22 June 2017. DOI: [10.1371/journal.pone.0179721](10.1371/journal.pone.0179721) (Impact Factor=2.9)
- **Samreen Abbas**, Malik Zawwar Hussain, Misbah Irshad, Trigonometric Spline for Medical Image Interpolation, Journal of the National Science Foundation of Sri Lanka, 45(1): 33-40, 24 March 2017. DOI: [10.4038/jnsfsr.v45i1.8036](10.4038/jnsfsr.v45i1.8036) (Impact Factor=0.4)
- **Samreen Abbas**, Malik Zawwar Hussain, Misbah Irshad, GA Based Rational Cubic B-Spline Representation for Still Image Interpolation, Pakistan Journal of Statistics and Operation Research, 12(4): 753-763, 15 December 2016. DOI: [10.18187/pjsor.v12i4.1459](10.18187/pjsor.v12i4.1459) (Impact Factor=0)

### REFREED CONFERENCE PROCEEDINGS

- **Samreen Abbas** and Tahira Nasreen Buttar, A Mesh Free Method for the Numerical Solution Of 1D Non-Linear Un-damped Sine Gordon Equation, In proceeding: 4th International World Conference On 21st Century Mathematics 2009, 1-6, March 4-8, 2009.
- **Samreen Abbas** and Tahira Nasreen Buttar, A Mesh Free Method for 1 D Klein-Gordon Equation, In proceeding: 5th International Conference on Statistical Sciences, 111-114, Jan 23-25, 2009.

## TALK DELIVERED

2025    3$^{rd}$ International Conference on Recent Advances in Mathematics 2025, April 16-17, Lahore, Pakistan
Topic of Presentation: Automatic Outline Vectorization of Digital Images Using B-Splines

2025    8$^{th}$ UMT International Conference on Pure and Applied Mathematics 2025, April 14-16, Lahore, Pakistan
Topic of Presentation: Outline Extraction and Vectorization of Planar

2015    Weekly Seminar Series, December 23, Department of Mathematics, University of the Punjab, Lahore.
Topic of Presentation: Gray Scaled Digital Image Processing Using Soft Computing Techniques

2014    Weekly Seminar Series, November 05, Department of Mathematics, University of the Punjab, Lahore.
Topic of Presentation: Quality Assessment of Gray Scale Digital Images

2014    Weekly Seminar Series, April 23, Department of Mathematics, University of the Punjab, Lahore.
Topic of Presentation: Digital Image Interpolation Using Splines

2013    6th International World Conference on 21st Century Mathematics 2013, March 6-9, Lahore, Pakistan
Topic of Presentation: Digital Image Processing

2009    6th International World Conference on 21st Century Mathematics 2009, March 4-8, Lahore, Pakistan

Topic of Presentation: A Mesh Free Method for the Numerical Solution Of 1D Non-Linear Un-damped Sine Gordon Equation

2009    5th International Conference on Statistical Sciences, January 23-25, 2009, Lahore, Pakistan
        Topic of Presentation: A Mesh Free Method for 1D Klein-Gordon Equation

## PEER-REVIEWED FOR THE JOURNALS

- Transactions on Signal Processing
- Scientific Reports
- American Journal of Diagnostic Imaging
- Alexandria Engineering Journal

## DEPARTMENT AND UNIVERSITY SERVICE

**03/2025 – Present**  Member, Program Review for Effectiveness and Enhancement (PREE) Team, GC Women University, Sialkot, Pakistan

**12/2024 – Present**  Member, Tutorial and Growth Group, GC Women University, Sialkot, Pakistan

**03/2023 – Present**  Member, University Purchase Committee, GC Women University, Sialkot, Pakistan

**03/2023 – 03/2023**  Member, as Expert for the Audit of 3rd Cycle of Self-Assessment Reports of Departments, GC Women University, Sialkot, Pakistan

**01/2023 – Present**  Convenor, Planning and Development Committee, Department of Mathematics, GC Women University, Sialkot, Pakistan

**01/2023 – 12/2024**  Convenor, Quality Enhancement Cell (QEC), Department of Mathematics, GC Women University, Sialkot, Pakistan

**01/2023 – 01/2023**  Member, Discipline Duty During 4th Convocation of GC Women University, Sialkot, Pakistan

**06/2021 – 06/2024**  Member, MS Admission Entry Test Committee, Department of Mathematics, GC Women University, Sialkot, Pakistan

**06/2021 – 12/2022**  Member, Hostel Management Committee, GC Women University, Sialkot, Pakistan

**11/2020 – 11/2020**  Member, Sub-Committee for prequalification of contractors for civil works-2020, GC Women University, Sialkot, Pakistan

**01/2020 – 12/2020**  Member/Secretary, Grievance Committee, GC Women University, Sialkot, Pakistan

**09/2019 – 09/2021**  Convenor, Planning and Development Committee, Department of Mathematics, GC Women University, Sialkot, Pakistan

**01/2017 – 12/2020**  Member, Board of Faculty of Administrative and Management Sciences, GC Women University, Sialkot, Pakistan

## WEBINARS

- Webinar: "Author Workshop-Latest Developments in Scientific Publishing Landscape & Publishing ethics" organized by Higher Education Commission (HEC), December 12, 2024, Islamabad, Pakistan.
- Webinar: "Assessing Wiley Journals and Publication Tips for Authors and Researchers" organized by Higher Education Commission (HEC), December 12, 2024, Islamabad, Pakistan.
- Webinar: "Wiley's Journals: How They Can Help Researchers and How to be Successful in your Publication Process" organized by Higher Education Commission (HEC), November 11, 2024, Islamabad, Pakistan.
- Webinar: "How to Publish an Article in High-Impact Journals: An Editorial Perspective", organized by Office of Research, Innovation and Commercialization (ORIC), November 07, 2024, GC Women University, Sialkot, Pakistan.

## TRAINING & WORKSHOPS

- A five-day online Faculty Orientation Training Workshop, organized by Punjab Higher Education Commission (PHEC), September 28-October 02, 2020, Staff Development Academy, University of Education, Township, Lahore, Pakistan
- One day online training program on "Effective Distance Learning in COVID-19 Lock Down" organized by NBEAC-HEC, May 04, 2020, Islamabad, Pakistan.

- One day training program on "Digital Library" organized by Main Library GCWUS in collaboration with Higher Education Commission (HEC) (Islamabad), April 26, 2019, GC Women University, Sialkot, Pakistan.
- One day training program on "Dynamics of Inspired Teaching" organized by Quality Enhancement Cell (QEC) in collaboration with Office of Research, Innovation and Commercialization (ORIC), March 19, 2019, GC Women University, Sialkot, Pakistan.
- One day training program on "Academic Programs and Teaching: Innovate to lead" organized by Quality Enhancement Cell (QEC), March 02, 2019, GC Women University, Sialkot, Pakistan.
- One day training program on "Mendely, Endnote & Matex" organized by ITSC & Office of Research, Innovation and Commercialization (ORIC) in collaboration with HEC (Islamabad), March 6, 2018, GC Women University, Sialkot, Pakistan.
- Two-day training program on "Life Skills" organized by Punjab Higher Education Commission (PHEC), February 21-22, 2018, Staff Development Academy, University of Education, Township, Lahore.
- Two-day workshop regarding "Establishing Counseling Center in GCWUS" organized by Office of Research, Innovation and Commercialization (ORIC), December 15-16, 2017, GC Women University, Sialkot, Pakistan.
- Three-day "Faculty Professional Development Training", organized by Office of Research, Innovation and Commercialization (ORIC) in collaboration with Higher Education Commission (HEC) (Islamabad), September 06-08, 2017, GC Women University, Sialkot, Pakistan.
- One day "Hands on Training for available E- Resources" organized by Central Library in collaboration with Higher Education Commission (HEC) (Islamabad), April 24, 2017, GC Women University, Sialkot, Pakistan.
- One day "Workshop on Developing Vision, Mission, Goals and Objectives" organized by Quality Enhancement Cell (QEC), Feb. 01, 2017, GC Women University, Sialkot, Pakistan.
- One day training program "Faculty Development Program 2017" organized by IBA Department in collaboration with Human Resource Development Centre (HRDC) (University of the Punjab, Lahore), Jan. 23, 2017, GC Women University, Sialkot, Pakistan.
- One-week CPD course on "Entrepreneurship and Professional Grooming" organized under Planning & Development Program (PDP) in collaboration with Learning Innovation Division of HEC (Islamabad), Nov. 14-18, 2016, GC Women University, Sialkot, Pakistan.

## TECHNICAL SKILLS

MATLAB: Have a good experience of using MATLAB.
LATEX: Well aware of how to use this application.
MATHEMATICA: Good in use this application.
MS WINDOWS: Comfortable to work in Windows Operating System environment.
MS OFFICE: Good experience of using MS Office applications including Excel, Word, Power Point.

## REFERENCES

**Dr. Misbah Irshad**
Professor
Higher Education Department,
Government of the Punjab, Pakistan.
Email: misbah1109@gmail.com

**Dr. Hira Tariq**
Assistant Professor
Department of Mathematics,
GC Women University, Sialkot.
Email: hira.tariq@gcwus.edu.pk