CURRICULUM VITAE

Dr. Malik Zawwar Hussain
Professor
Department of Mathematics
University of the Punjab
Lahore Pakistan

PERSONAL PROFILE:

Name:	Dr. Malik Zawwar Hussain
Fathers' Name:	Malik Khadam Hussain
Religion:	Islam
Marital Status:	Married
Nationality:	Pakistani

Address:

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

ii ERS-34, Staff Colony, New Campus, University of the Punjab, Lahore, Pakistan.

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malikzawwar.math@pu.edu.pk

EDUACTION:

2006-2007 **_Post Doctoral Research Fellow_**
School of Engineering, Manufacturing and Mechanical Engineering, University of Birmingham, UK.

1996-2002 **_Ph.D. in Computer Graphics_**
University of the Punjab, Lahore, Pakistan.
Thesis: _Shape Preserving Curves And Surfaces for Computer Graphics_

1990-1992 **_M.Phil. in Computing_**
Bahauddin Zakariya University, Multan, Pakistan.
Thesis: _Optimal Shape Design Problem with Finite Elements_

1986-1988 **_M.Sc. in Applied Mathematics_**
University of the Punjab, Lahore, Pakistan.

FIELD OF INTEREST:

Computer Graphics, Computational Geometry, Geometric Modelling, Visualization, CAGD, CAD/CAM, Image Processing, Computing, Numerical Analysis.

PROFESSIONAL EXPERIENCE:

Dec., 2010- to date   ***Professor in Mathematics***
Department of Mathematics,
University of the Punjab, Lahore, Pakistan.

Oct., 2005- Dec., 2010 ***Associate professor in Mathematics***
Department of Mathematics,
University of the Punjab, Lahore, Pakistan.

July 2001-Oct., 2005 ***Assistant professor in Mathematics***
Department of Mathematics,
University of the Punjab, Lahore, Pakistan.

Jan., 1995- July, 2001 ***Lecturer in Computational Mathematics***
Department of Mathematics,
University of the Punjab, Lahore, Pakistan.

VISITING APPOINTMENTS:

1993-1995   ***Lecturer in Mathematics***
Department of Mathematics,
University of the Punjab, Lahore, Pakistan.

1993-1998   ***Lecturer in Computer Science***
Department of Computer Science,
University of the Punjab, Lahore, Pakistan

1994-1998   ***Lecturer in Computer Science***
Department of Computer Science,
University of Engineering & Technology,
Lahore, Pakistan.

1996-1998   ***Lecturer in Computer Science***
Institute of Statistics,
University of the Punjab, Lahore, Pakistan.

1997-2000   ***Lecturer in Computer Science***
National University of Computer &
Emerging Sciences, Lahore, Pakistan.

1998-2001   ***Lecturer in Computational Mathematics***
Centre for High Energy Physics,
University of the Punjab, Lahore, Pakistan.

2002-2003   ***Assistant professor in Computer Science***
Institute of Geology,
University of the Punjab, Lahore, Pakistan.

2003-current   ***Professor in Computing***
Centre for Operation Research,
University of the Punjab, Lahore, Pakistan

2002-2004   ***Assistant professor in Mathematics***
Department of Physics,
University of the Punjab, Lahore, Pakistan.

July –Sep., 2005	***Visiting Scientist*** School of Mathematical Sciences, Universiti Sains Malaysia, Penang, Malaysia.
2004-2006	***Assistant professor in Computing*** Institute of Biochemistry and Biotechnology, University of the Punjab, Lahore, Pakistan.
2006-2007	***Visiting Lecturer*** School of Engineering (Mech. & Manuf. Eng.) University of Birmingham, UK.
Sep. 2007- Jan. 2008	***Associate professor in Mathematics*** Institute of Chemistry, University of the Punjab, Lahore, Pakistan
July –Oct., 2009	***Visiting Scientist*** School of Mathematical Sciences, Universiti Sains Malaysia, Penang, Malaysia.
2009-2011	***Associate professor in Computing*** College of Earth and Environmental Sciences, University of the Punjab, Lahore, Pakistan.
May-Dec., 2010	***Associate professor in Mathematics*** College of Engineering, University of the Punjab, Lahore, Pakistan.
July 10-25, 2010	***Visiting Research Fellow*** School of Engineering, (Mech. & Manuf. Eng.) University of Birmingham, UK.
July 05-27, 2011	***Visiting Research Fellow*** School of Mathematical Sciences, Universiti Sains Malaysia, Penang, Malaysia.
June 26- July 18, 2012	***Visiting Research Fellow*** Institute of Mathematics, Homboldt University, Berlin, Germany.
Aug. 01- Sep.19, 2013	***Visiting Professor*** School of Mathematical Sciences, Universiti Sains Malaysia, Penang, Malaysia.
June 20 - Aug.12, 2016	***Visiting Professor*** School of Mathematical Sciences, Universiti Sains Malaysia, Penang, Malaysia.

RESEARCH SUPERVISION:

Ph. D. Dissertation:

1. Miss Maria Hussain, (2009), Data visualization using spline functions
2. Miss Tahira Sumbal Shaikh, (2013), Curves and surfaces for data visualization using splines
3. Miss Misbah Irshad, (2013), Reverse engineering using splines and soft computing techniques
4. Miss Farheen Ibraheem, (2014), Data visualization using trigonometric functions
5. Miss Munaza Ishaq, (2015), Interactive shape designing using spline interpolation
6. Miss Farsia Hussain, (2015), Shape preserving trigonometric spline curves and surfaces for computer graphics
7. Miss Samreen Abbas, Digital image processing using soft computing techniques and spline representations, (in progress)
8. Miss Shamaila Samreen, Modeling of curves and surfaces for CAD/CAM, (in progress)
9. Miss Ayesha Shakeel, (in progress)
10. Miss Tayba Arroj, (in progress)

M. Phil. Dissertations:

1. Miss Maria Hussain, (2004), Convex surfaces for computer aided geometric design
2. Miss Nausheen Ayub, (2004), Curves for computer aided geometric design
3. Mr. Shahzad Ahmad, (2005), Shape preserving data visualization for computer aided geometric design
4. Miss Misbah Irshad, (2006), Visualization of positive data by cubic spline interpolation
5. Miss Shumaila Samreen, (2006), Shape preserving data visualization with rational quartic splines
6. Miss Mubashrah Saddiqa, (2006), Shape preserving surfaces for computer aided geometric design
7. Miss Tahira Sumbal Shaikh, (2007), Shape preserving surfaces using rational bi-quartic spline
8. Miss Farsia Hussain, (2008), Convex data visualization using rational cubic functions
9. Miss Ayesha Shakeel, (2008), Surface data visualization using rational bi-quadratic functions
10. Miss Fareeha Sadia, (2009), Shape preserving convex surface interpolation
11. Miss Dainsh Zaidi, (2009), Positive and monotone surface data interpolation
12. Miss Asfar Nisar, (2009), Positive data modeling using rational functions

13. Mr. Arfan Ali, (2009), Positive scattered data interpolation
14. Miss Rabia Iqbal (2010), Shape preserving curves for computer graphics
15. Miss Munaza Ishaq (2010), Shape preserving C^2 rational functions
16. Miss Waqar un Ansa (2010), Scientific curve data visualization using C^2 spline functions
17. Miss Shehla Aslam (2010), Monotone scattered data visualization
18. Miss Ayesha Khalid (2010), An algorithm for outline capture of bitmap characters
19. Miss Nadia Shoukat (2010), Positive rational quintic functions
20. Miss Irfa Ellahi (2011), Corner detection scheme for 3D objects
21. Miss Saima Bashir (2011), Surface data visualization using rational bi-cubic functions
22. Miss Iram Butt (2011), Shape preserving scattered data interpolation
23. Miss Madiha Amjad (2011), Shape preserving rational bi-cubic functions
24. Miss Sobia Khalid (2012), Capturing outlines with rational functions using soft computing techniques
25. Miss Amna Wasim (2012), Shape preserving trigonometric interpolation
26. Miss Sayyida Sadaf Batool (2012), Inherent surface data modeling using rational functions.
27. Miss Mariyam Ehsan Buttar (2012), C^1 positivity preserving interpolation using bernstein bezier rational quartic triangular patch
28. Miss Faiza Sarfraz (2013), Approximation of surface to surface intersection curves
29. Miss Sadaf Yasmeen (2013), Object configuration using rational spline interpolation
30. Miss Iqra Saeed, (2013), Convexity-preserving scattered data interpolation scheme using side-vertex method
31. Miss Mushayyadah Javed, (2013), Monotone trigonometric scheme for shape preserving surfaces
32. Miss Haleema Sadia (2014), Curve modeling in CAGD using least square method
33. Miss Nousheen Zafar (2014), Digital signal interpolation using spline functions
34. Miss Beenish Aqeel (2014), Shape –preserving algorithms for 3D data
35. Miss Tayba Arooj (2015), Convex data modeling using rational functions
36. Miss Hira Mahmood (2015), Trigonometric approximation techniques for generalized cornu spirals
37. Miss Zakia Zainib (2015), Construction of wavelets from spline functions
38. Miss Aqsa Sadiq (2015), Object designing using spline functions
39. Miss Maryyam Anwar (2015), Shape preserving parametric curves

40. Miss Nabila Jabeen (2016), Object designing using quadratic trigonometric functions
41. Miss Farah Nazir (2016), Circular arcs approximation schemes
42. Miss Saira (2016), Shape preserving trigonometric spline curves
43. Miss Nimra Tariq (2016), Reverse engineering using quadratic spline functions
44. Miss Zahra Yameen, (in progress)
45. Miss Sana Zafar, (in progress)
46. Miss Zoha Tariq, (in progress)
47. Miss Maryam Khalid Javed, (in progress)
48. Miss Rushda Habib, (in progress)

RESEARCH EVALUATION:

Ph.D. Thesis:

1. Evaluated the Ph. D. (Mathematics) thesis of Abdul Salam School of Mathematical Sciences, GC University Lahore, Pakistan titled "Feed forward control design for dynamical systems", 2009.
2. Evaluated the Ph. D. (Mathematics) thesis of Abdul Salam School of Mathematical Sciences, GC University Lahore, Pakistan titled "Open loop control methods in non-linear dynamical equations", 2009.
3. Evaluated the Ph. D. (Mathematics) thesis of The Islamia University of Bahawalpur, Pakistan titled "Subdivision curves/surfaces and their error bounds", 2011.
4. Evaluated the Ph. D. (Mathematics) thesis of COMSATS Institute of Information Technology, Islamabad titled "Some subclasses of analytic functions related with the generalization of functions with bounded boundary rotation", 2011.
5. Evaluated the Ph. D. (Mathematics) thesis of COMSATS Institute of Information Technology, Islamabad titled "Numerical techniques for the solution of certain nonlinear equations", 2012.
6. Evaluated the Ph. D. (Mathematics) thesis of COMSATS Institute of Information Technology, Islamabad titled "Some analytic methods for solving higher order nonlinear boundary and initial value problems", 2012.
7. Evaluated the Ph. D. (Mathematics) thesis of Universiti Sains Malaysia titled "Representation of curves and surfaces using soft computing techniques", 2013.
8. Evaluated the Ph. D. (Mathematics) thesis of Universiti Teknologi Mara Malaysia titled "G^2 Parametric Curve and Surface Fitting using Beta-spline", 2014.
9. Evaluated the Ph. D. (Mathematics) thesis of The Islamia University of Bahawalpur, Pakistan titled "Subdivision schemes and their applications in geometric modeling", 2015.
10. Evaluated the Ph. D. (Mathematics) thesis of Universiti Sains Malaysia titled "Rational cubic Ball interpolants for shape preserving curves and surfaces", 2016.

M. Phil. / MS Thesis:

11. Evaluated the M.Phil. (Mathematics) thesis of University of Karachi, titled "Some exact solutions of unsteady fluid flow equations using hodograph transformation methods", 2004.

12. Evaluated the M.Phil. (Mathematics) thesis of University of Karachi, titled "A numerical method for solving the second order boundary value problem", 2004.

13. Evaluated the M.Phil. (Mathematics) thesis of University of Karachi, titled "A class of exact solutions of flow equations of an incompressible fluid of variable viscosity", 2005.

14. Evaluated the M. Phil. (Mathematics) thesis of University of Engineering and Technology, Lahore, titled "Two-step methods with reduced truncation error for special second-order initial value problems", 2006.

15. Evaluated the M. Phil. (Mathematics) thesis of University of Engineering and Technology, Lahore, titled "Stability and efficiency of P-stable method of one dimensional Schrödinger equation", 2006.

16. Evaluated the M. Phil. (Mathematics) thesis of Bahauddin Zakariya University, Multan, titled "Automatic unstructured mesh generation on surfaces", 2008.

17. Evaluated the M. Phil. (Mathematics) thesis of Bahauddin Zakariya University, Multan, titled "An algorithm for automatic surface generation", 2008.

18. Evaluated the M. Phil. (Mathematics) thesis of University of Engineering and Technology, Lahore, titled "P-stable collocation method for special second order initial value problems", 2008.

19. Evaluated the M. Phil. (Mathematics) thesis of University of Engineering and Technology, Lahore, titled "Parallel block predictor corrector method for solving second order initial value problems", 2008.

20. Evaluated the MS (Mathematics) thesis of COMSATS Institute of Information Technology, Islamabad, titled "High order three-step iterative techniques", 2009.

21. Evaluated the MS (Mathematics) thesis of COMSATS Institute of Information Technology, Islamabad, titled "Simultaneous method for determine zeros of non-linear equation", 2009.

22. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "General formulas for the mask of (2b+4)-point n-ary subdivision schemes", 2009.

23. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "Some new subdivision schemes and their analysis", 2009.

24. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "A new 6-point Ternary interpolating subdivision schemes and its differentiability", 2009.

25. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "A new 5-point Ternary interpolating subdivision schemes and its differentiability", 2009.
26. Evaluated the M. Phil. (Mathematics) thesis of University of Engineering and Technology , Lahore, titled "Numerical solution of second order differential equation of fins with temperature dependent surface heat flux using A domain decomposition method", 2010.
27. Evaluated the M. Phil. (Mathematics) thesis of University of Engineering and Technology, Lahore, titled "Fourth order P-stable methods and their efficiency for non-linear oscillation problems", 2011.
28. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "Tensor product subdivision surface", 2010.
29. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "Analysis of binary subdivision schemes for curve design", 2011
30. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "Analysis of quaternary subdivision schemes for curve design", 2011.
31. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "Analysis of ternary subdivision schemes for curve design", 2011.
32. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "Analysis of tensor product ternary subdivision schemes for surface design", 2011.
33. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "Analysis of tensor product binary subdivision schemes for surface design", 2011.
34. Evaluated the M. Phil. (Mathematics) thesis of Lahore College for Women University, titled "Shape preserving interpolation via rational quadratic trigonometric spline", 2011.
35. Evaluated the M. Phil. (Mathematics) thesis of Bahauddin Zakariya University, Multan, titled "On optimal iterative methods for solving nonlinear equations", 2013.
36. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "Family of odd points quinary approximating subdivision schemes", 2012.
37. Evaluated the MS (Mathematics) thesis of COMSATS Institute of Information Technology, Lahore, titled "Optimal finite difference schemes for wave equations", 2012.
38. Evaluated the MS (Mathematics) thesis of COMSATS Institute of Information Technology, Lahore, titled " Dispersion free finite difference scheme for time harmonic wave equation", 2012.
39. Evaluated the M.Phil. (Mathematics) thesis of GC University, Lahore, titled, "Some studies on regularization of Green's function on 3rd structure and its applications", 2012.

40. Evaluated the M. Phil. (Mathematics) thesis of Bahauddin Zakariya University, Multan, titled "On optimal iterative methods for solving nonlinear equations", 2013.
41. Evaluated the M. Phil. (Mathematics) thesis of Bahauddin Zakariya University, Multan, titled "Some derivative based quadrature rules", 2013.
42. Evaluated the M. Phil. (Mathematics) thesis of Lahore College for Women University, titled "C^1 rational coons patches", 2013.
43. Evaluated the MS (Mathematics) thesis of COMSATS Institute of Information Technology, Lahore, titled "Corrected finite difference schemes for high freqencies", 2013.
44. Evaluated the MS (Mathematics) thesis of COMSATS Institute of Information Technology, Lahore, titled "A compact finite difference method for free vibration analysis of Euler-Bernoulli beams", 2013.
45. Evaluated the M. Phil. (Mathematics) thesis of Lahore College for Women University, titled "Positive scattered data interpolation", 2013.
46. 3Evaluated the M. Phil. (Mathematics) thesis of University of Peshawar, titled "Numerical solution of elliptic boundary value problem via Chebyshev wavelets", 2013.
47. Evaluated the M. Phil. (Mathematics) thesis of Lahore College for Women University, titled "Convexity-preserving surfaces via energy minimization frame work", 2014.
48. Evaluated the M. Phil. (Mathematics) thesis of Lahore College for Women University, titled "G^2-approximation of circular arcs and conics by trigonometric curves", 2014.
49. Evaluated the M. Phil. (Mathematics) thesis of University of Peshawar, titled "Numerical Solution of Nonlocal Boundary Value Problem via Haar Wavelet", 2014.
50. Evaluated the M. Phil. (Mathematics) thesis of University of Peshawar, titled "Haar Wavelet method for numerical solution of third order boundary value problems with nonlocal boundary conditions", 2014.
51. Evaluated the M. Phil. (Mathematics) thesis of Bahauddin Zakariya University, Multan, titled "Some with and without memory iterative methods for solving nonlinear equations", 2015.
52. Evaluated the M. Phil. (Mathematics) thesis of Bahauddin Zakariya University, Multan, titled "Some quadrature rules over finite intervals", 2015.
53. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "Generation and analysis of a family of approximating subdivision schemes", 2015.
54. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "A family of binary and dual subdivision schemes", 2015.
55. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "A five-point variant on Lane-riesenfeld algorithm", 2015.

56. Evaluated the M. Phil. (Mathematics) thesis of University of Peshawar, titled "Numerical solution of parabolic and hyperbolic PDEs with integral boundary conditions via Haar wavelet", 2015.
57. Evaluated the M. Phil. (Mathematics) thesis of University of Peshawar, titled "Haar wavelet collocation method for numerical solution of functional differential equations", 2015.
58. Evaluated the M. Phil. (Mathematics) thesis of University of Peshawar, titled "Numerical solution of elliptic boundary value problem via Chebyshev wavelets", 2015.
59. Evaluated the M.Phil. (Mathematics) thesis of GC University, Lahore, titled, "Semi-discretization of the Black-Scholes equation for higher ordered accuracy", 2015.
60. Evaluated the M.Phil. (Mathematics) thesis of GC University, Lahore, titled, "Numerical treatment of a differential equation from flow of a thin liquid film", 2015.
61. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "The $(2n)^2$-point scheme based on bivariate quartic polynomial", 2016.
62. Evaluated the M. Phil. (Mathematics) thesis of The Islamia University of Bahawalpur, titled "The $(2n)^2$-point scheme based on bivariate cubic polynomial", 2016.
63. Evaluated the M. Phil. (Mathematics) thesis of Lahore College for Women University, titled "Geometric modeling of S-shaped and C-shaped transition curves for highway route designing", 2016.
64. Evaluated the M. Phil. (Mathematics) thesis of University of Peshawar, titled "Numerical solution of partial differential equations with integral boundary conditions by meshless using radial basis functions", 2016.
65. Evaluated the M. Phil. (Mathematics) thesis of Lahore College for Women University, titled "Discrete time signal interpolation using rational cubic spline functions", 2016.
66. Evaluated the M. Phil. (Mathematics) thesis of Lahore College for Women University, titled "Fair curve designing technique", 2017.
67. Evaluated the M. Phil. (Mathematics) thesis of Bahauddin Zakariya University, Multan, titled "Some iterative methods based on homotopy perturbation method for solving nonlinear equations", 2017.
68. Evaluated the M. Phil. (Mathematics) thesis of Bahauddin Zakariya University, Multan, titled "Some numerical methods for solving nonlinear equations using homotopy perturbation method", 2017.

REFREEING AND REVIEWING:

Computers and Graphics, Computers and Mathematics with Applications, Journal of Computational and Applied Mathematics, Journal of Visual Communication and Image Representation. Transaction on Computational Science, Journal of Engineering and Technology Research, Pakistan Journal of Statistics and Operation Research, International Journal of Computer Vision and Image Processing, Applied Mathematics and

Computation. Applied Mathematics Letters, Applied Mathematics, Egyptian Informatics Journal, SpringerPlus.

PRESENT POSITIONS:
- Faculty Member, Department of Mathematics, University of the Punjab Lahore, Pakistan.
- Member, Board of Studies in Mathematics, University of the Punjab, Lahore, Pakistan.
- Member Editorial Board, Journal of Information and Computing Science.
- Member, Scientific and Technical Committee and Editorial Review Board on Natural and Applied Sciences, World Academy of Science, Engineering and Technology (WASET).
- Member, Board of Science Faculty, University of the Punjab, Lahore, Pakistan.
- Member, Academic Council, University of the Punjab, Lahore, Pakistan.

ADMINISTRATIVE EXPERIENCE:
- Assistant Superintendent, Boys Hostel No. 7, University of the Punjab, Lahore, Pakistan (Nov. 1996 - Dec. 1998).
- Coordinator Departmental M.Phil./Ph.D. Program, University of the Punjab Lahore, Pakistan (Sep. 2002 - Jan. 2004, June 2005-Sep 2006, July 2014-August 2016).
- Coordinator Departmental B.Sc. (Hons.) Program, University of the Punjab Lahore, Pakistan (Sep. 2001 - Nov. 2004).
- Students' Advisor, Department of Mathematics, University of the Punjab Lahore, Pakistan (Feb.1995 - May. 2001, Aug. 2003 - Nov. 2004, Sep. 2007-April 2009, Aug. 2010 – Dec. 2010).
- Member Departmental Scholarship Committee, University of the Punjab Lahore, Pakistan (Feb. 1995 - Nov. 2004).
- Incharge Library, Department of Mathematics, University of the Punjab Lahore, Pakistan (Sep. 2001 - Nov. 2004).
- Member Editorial Board, Punjab University Journal of Mathematics, Lahore, Pakistan (Jan. 1995 - Jun. 2006).
- Member Editorial Review Board, International Journal of Computer Vision and Image Processing (IJCVIP) (2010-2014).
- Coordinator Departmental M.Sc. (Semester System /Annual System) Program, University of the Punjab Lahore, Pakistan (Apr. 2006 – Aug. 2006, Feb. 2008-Apr. 2009, Nov. 2009-Nov.2011, Jun. 2012-Apr. 2013).
- Member, Board of Faculty of Science, University of the Punjab, Lahore, Pakistan (1999-2006)
- Associate Editor, International Journal of Computer Graphics and CAD/CAM.

RESEARCH COLLABORATION:
- Prof. Dr. Muhammad Sarfraz, Department of Information Science Kuwait University

➢ Dr. Jamaludin Bin Md. Ali, School of Mathematical Sciences, University Sains, Penang Malaysia.
➢ Dr. R. J. Cripps, Geometric Modelling Group, School of Engineering (Mechanical and Manufacturing), University of Birmingham, UK.

INVITED TALKS:

1. Visualization of scientific data, Mathematics Department, University of the Punjab, Lahore, April 13, 2005.
2. Visualization of positive data using rational functions, School of Mathematical Sciences, University Sains Malaysia, July 15, 2005.
3. Visualization monotonic data using rational functions, School of Mathematical Sciences, University Sains Malaysia, July 29, 2005.
4. Surface modeling using rational functions, School of Mathematical Sciences, University Sains Malaysia, September 02, 2005.
5. Curves for computer aided geometric design, School of Mathematical Sciences, University Sains Malaysia, September 23, 2005.
6. Positive data visualization using spline functions, Manchester Visualization Centre, University of Manchester, UK , August 31, 2007
7. Generalized cornu spirals approximations, Mathematics Department, University of the Punjab, Lahore, December 12, 2007.
8. Interactive curve modelling, Mathematics Department, University of the Punjab, Lahore, November19, 2008.
9. Curve data visualization, Mathematics Department, Islamia University of Bahawalpur, December 29, 2008.
10. Shape preserving rational quartic function, School of Mathematical Sciences, University Sains Malaysia, July 31, 2009.
11. Positive and monotone rational bi-cubic functions, School of Mathematical Sciences, University Sains Malaysia, September 09, 2009.
12. Convex surface data visualization, School of Mathematical Sciences, University Sains Malaysia, October 16, 2009.
13. Smooth polynomial approximation of spiral arcs, Mathematics Department, University of the Punjab, Lahore, December 22, 2010.
14. Data modeling using rational cubic functions, School of Mathematical Sciences, University Sains Malaysia, July 23, 2011.
15. Shape preserving interpolation techniques, Institute of Mathematics, Humboldt University Berlin Germany, July 11, 2012.
16. Positive curves and surfaces for CAGD, Institute of Mathematics, Warsaw University Poland, July 13, 2012.
17. Reverse engineering of planer objects using an evolutionary optimization technique, World Conference of 21st Century Mathematics, March 6-9, 2013, Lahore, Pakistan.
18. Data visualization, School of Dental Sciences, University Sains Malaysia, September 15, 2013.

19. Outline capturing of generic shapes using genetic algorithm and cubic spline, School of Mathematical Sciences, University Sains Malaysia, September 17, 2013.
20. Interactive visualization techniques for 3D data, 16th International Conference on Humans and Computers, Shizuoka University, Hamamatsu Japan, December 17, 2013.
21. Shape preserving spline curves and surfaces for computer graphics, One Day Workshop on Computational Mathematics with Applications, Shaheed Benazir Bhutto Women University Peshawar, March 10, 2014.
22. Interactive shape designing using spline interpolation, School of Mathematical Sciences, University Sains Malaysia, July 11, 2016.
23. Shape preserving trigonometric spline curves for computer graphics, School of Informatics & Applied Mathematics, University Malaysia Terengganu, July 27, 2016.

WORKSHOPS AND CONFERENCES:

1. Presented the paper, Interpolation for the positive data using rational cubics, ISOSS-IV, Lahore, Pakistan, August 27-31, 1994.
2. Attended All Pakistan Mathematical Conference, UET Lahore, Pakistan, March 11-14, 1995.
3. Attended Workshop on Theoretical Computer Science, Lahore University of Management Sciences, Lahore, Pakistan, June 03-15, 2002.
4. Attended Workshop on Computational Mathematics, ILM, Lahore, Pakistan, August 5, 2002.
5. Attended Seminar on Computational Algebra, COMSATS, Institute of Information Technology, Lahore, Pakistan, May 09, 2003.
6. Attended International Conference on Modals and Methods in Fluid Mechanics, COMSATS, Institute of Information Technology, Abbotabad, Pakistan, June 23-26, 2003.
7. Presented the paper, Shape preserving curves for CAGD in World Conference of 21st Century Mathematics, Lahore, Pakistan, March 18-20, 2004.
8. Presented the paper, Visualization of positive data in Mathematical Methods for Curves and Surfaces VI, Tromso, Norway, July 1-6, 2004.
9. Presented the paper, Data visualization using rational spline interpolation in 11th International Congress on Computational and Applied Mathematics, Leuven, Belgium, July 26-30, 2004.
10. Attended One day symposium on Mathematics, National Centre for Mathematics, Lahore, Pakistan, November 27, 2004.
11. Attended Winter Conference in Mathematics-2004, LUMS, Lahore, Pakistan, December 3-4, 2004.
12. Attended Mathematics Day, COMSATS Institute of Information Technology, Lahore, Pakistan, December 6, 2004.
13. Attended International Conference on Mathematics and its Applications, COMSATS, Lahore, Pakistan, January 20-22, 2006.

14. Presented the paper, Positive data presentation using rational cubics in 12th International Congress on Computational and Applied Mathematics, Leuven, Belgium, July 10-14, 2006.
15. Presented the paper, Convexity preserving data interpolation in 3rd International Conference on 21st Century Mathematics, Lahore, Pakistan, March 4-7, 2007.
16. Attended Mathematics Day, COMSATS Institute of Information Technology, Lahore, Pakistan, March 8, 2008.
17. Presented the paper, Convex surface interpolation in Geometric Modelling and Processing 2008, Hangzhou, China, April 23-25, 2008.
18. Presented the paper , Positive data modelling using spline functions in 4th World Conference of 21st Century Mathematics, Lahore, Pakistan, March 4-8, 2009.
19. Presented the paper, Shape preserving rational spline in 10th International Pure Mathematics Conference 2009, Islamabad, Pakistan, August 19-21, 2009.
20. Presented the paper, Convex data modeling using spline functions in15^{th} International Congress on Computational and Applied Mathematics, Leuven, Belgium, July 05-09, 2010.
21. Presented the paper, Spline approximation for capturing outlines of generic shapes using genetic algorithm in 15th International Congress on Computational and Applied Mathematics, Leuven, Belgium, July 05-09, 2010.
22. Presented the paper, Visualization of positive data by rational cubic spline interpolant in 5th International Conference on Geometric Modelling and Imaging, London, UK, July 26-29, 2010.
23. Attended Seminar " Finite element methods for fourth order elliptic problems", Institute of Mathematics, Homboldt University, Berlin Germany July 02, 2012
24. Attended Seminar "A stochastic setting for inverse and parameter identification problem as well as CCSA colloquium", Institute of Mathematics, Homboldt University, Berlin Germany July 04, 2012
25. Attended Seminar "Material model and computational methods", Institute of Mathematics, Homboldt University, Berlin Germany July 04, 2012
26. Attended Seminar "Semi-explicit method for coupled circuit/ field problems", Institute of Mathematics, Technical University of Berlin Germany July 05, 2012
27. Attended Seminar "A real Jacobi-Davidson algorithm for the 2-real parameter eigenvalue problem", Institute of Mathematics, Technical University of Berlin Germany July 05, 2012
28. Presented the paper, Two methods of object designing by rational splines in 18th International Conference on Information Visualization, Paris, France, July 15-18, 2014.
29. Presented the paper, Shape preserving positive trigonometric surfaces in 19th International Conference on Information Visualization, Barcelona, Spain, July 21-25, 2015.
30. Presented the paper, Reverse engineering of planer objects using imperialist competitive algorithm in 19th International Conference on Information Visualization, Barcelona, Spain, July 21-25, 2015.
31. Presented the paper, Interpolation of discrete time signals using cubic functions in 19th International Conference on Information Visualization, Barcelona, Spain, July 21-25, 2015

INTERNATIONAL CONFERENCES ORGANIZED

1. Worked as member of Organizing Committee in World Conference of 21st Century Mathematics, March 18-20, 2004, Lahore, Pakistan.
2. Worked as Secretary in Second World Conference of 21st Century Mathematics, March 4-6, 2005, Lahore, Pakistan.
3. **Worked as member of National Organizing Committee, LUMS International Conference on Mathematics and its Applications in Information Technology, November 27-30, 2005, Lahore, Pakistan.**
4. Worked as General Secretary in World Conference on 21st Century Mathematics, March 4-7, 2007, Lahore, Pakistan,
5. **Worked as member of National Organizing Committee, LUMS International Conference on Mathematics and its Applications in Information Technology, March 9-12, 2008, Lahore, Pakistan.**
6. **Worked as member of Scientific Committee, International Pre-Olympic Congress on Computing Science, Nanjing, China, August 5-7, 2008.**
7. Worked as member of Local Organizing Committee, 4th World Conference of 21st Century Mathematics, March 4-8, 2009, Lahore, Pakistan.
8. Worked as member of Scientific Committee, ICIC2009 (The Second International Conference on Information and Computing) Manchester UK. , May 21-22, 2009.
9. Conducted two days workshop on using Matlab for Curves and Surfaces, School of Mathematical Sciences, University Sains Malaysia, October 22-23, 2009.
10. Worked as member, Program and Reviewing Committee, International Conference of Graphical Models and Imaging GMAI, July 26-29, 2010, London UK.
11. Worked as member of Organizing Committee in World Conference of 21st Century Mathematics, February 9-13, 2011 Lahore, Pakistan.
12. Worked as member, Program and Reviewing Committee, International Conference of Graphical Models and Imaging GMAI, July 12-15, 2011, London UK.
13. Worked as member, Program and Reviewing Committee, International Conference of Graphical Models and Imaging GMAI, July 10-13, 2012, Montpellier, France.
14. Worked as member of Organizing Committee in World Conference of 21st Century Mathematics, March 6-9, 2013, Lahore, Pakistan.
15. Worked as member, Program and Reviewing Committee, International Conference of Graphical Models and Imaging GMAI, July 15-18, 2013, London, UK.
16. Conducted three days' workshop on Mathematica, School of Mathematical Sciences, University Sains Malaysia, September 10-12, 2013.
17. Worked as member, Program and Reviewing Committee, International Conference of Graphical Models and Imaging GMAI, July 15-18, 2014, Pairs, France.
18. Worked as member, Program and Reviewing Committee, International Conference of Graphical Models and Imaging GMAI, July 21-24, 2015, Barcelona, Spain.

19. Worked as member, Program and Reviewing Committee, International Conference of Graphical Models and Imaging GMAI, July 19-22, 2016, Lisbon, Portugal.
20. Conducted Five days' workshop on Theory of spline functions, School of Mathematical Sciences, University Sains Malaysia, July 18-22, 2016.
21. Conducted three days' workshop on Mathematica, School of Mathematical Sciences, University Sains Malaysia, August 01-03, 2016.
22. Worked as member of technical committee, 8th International Conference on Graphic and Image Processing (ICGIP 2016), Tokyo Japan, October 29-31, 2016.
23. Working as member of technical committee, 9th International Conference on Graphic and Image Processing (ICGIP 2017), Qingdao, China, October 13-15, 2017.
24. Working as member, Program and Reviewing Committee, International Conference of Graphical Models and Imaging GMAI, July 11-14, 2017, London, UK.

MEMBERSHIP OF LEARNED SOCIETIES:
1. Life Member, Punjab Mathematical Society.
2. Life Member, The Islamic Society of Statistical Sciences.
3. Life Member, Pakistan Institute of Physics.
4. Life Member, International Association of Engineering.
5. Life Member, IAENG Society of Computer Science.
6. Life Member, IAENG Society of Scientific Computing.
7. Life Member, IAENG Society of Operation Research.
8. Member CAGD_online Yahoo groups
9. Member SIAM USA, 1994-1998

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