CURRICULUM VITAE

Postal Address:
Department of Mathematics
University of Peshawar, Khbyer PukhtoonKhwa, Peshawar, Pakistan
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Email: raminmath@uop.edu.pk , rohulamin.math@gmail.com

Dr. ROHUL AMIN

Objectives:

To work within competitive environment so that I can fully utilize my Professional abilities for the best interest of the Organization and to be Professional in future.

Personal information:

Father Name: Bakht Rawan
Date of Birth: 05/05/1985
Place of Birth: Dir (Lower)
Marital status: Married
Nationality: Pakistani

Academic Background:

PhD (Applied Mathematics) *(Computational Mathematics)*
Department of Mathematics, University of Peshawar, Session 2013-17

M. Phil (Pure Mathematics)
Department of Mathematics, University of Peshawar, Session 2011-13

M. Sc Mathematics,
1st division, Department of Mathematics, University of Peshawar, Session 2006-08

B. Sc (Math-A, Math-B, Computer Science)   1st division, University of Malakand, Session 2004-05

F. Sc Pre-engineering,   1st division, BISE Malakand, Session 2002-03

S. Sc Science Group,   1st division, BISE Swat, Session 2001

B. Ed (Bachelor of Education),   1st division, University of Peshawar, Session 2007-08

Experience:

(1) Currently working as a Lecturer at Department of Mathematics, University of Peshawar since 21st Oct 2009 to till date, Also Visiting classes in Institute of Chemical Sciences and Department of Pharmacy University of Peshawar.

(2) I worked as a Teacher of Mathematics at Asia Model School & College Peshawar, from 02 February 2008 to 02 Jan 2009.

Languages:

- Mother tongue Pashto.
- Can Read, Write and speak easily Urdu and English.

Teaching Experience:

1. Teaching Mathematics in Department of Mathematics, University of Peshawar for the last 12 years.

2. Taught the following subjects in the University of Peshawar.
   - Pharmaceutical Mathematics
   - Mathematics for Chemists
   - Elements of set theory and mathematical logic
   - Discrete Structure
   - General topology
   - Topology-I
   - Topology-II
   - Calculus-I
   - Calculus-II

3. I am visiting teacher in the following institutions:

   - Institute of Chemical Sciences University of Peshawar since 2009.

   - Department of Pharmacy University of Peshawar since 2012.

Examination and Assessment Activities:

   ➢ External examiner for the M,Sc. Mathematics Examination of the University of Punjab.

   ➢ External examiner for the M,Sc. Mathematics Viva-voce Examination of the University of Haripur.

   ➢ Paper Setter & Examiner of University of Peshawar

   ➢ Remained paper setter & Examiner of Bannu University of Science & technology, Bannu.

   ➢ Paper Setter & Examiner of University of Haripur

   ➢ Paper Setter & Examiner of Khushal Khan Khattak University Karak

Supervisions:

HEC Approved PhD Supervisor

I have been awarded the status of HEC approved PhD Supervisor in the discipline of Physical Sciences since 22/12/2017 and onward.

BS Thesis Supervision (Completed)

1. Haar wavelet collocation method for solution of linear and nonlinear neutral delay differential equation (Nauman Ahmad Sher, Tahir Ali, Mehran Ud Din, Raheem Ullah August 12, 2021)

2. Numerical solution of linear and nonlinear variable order fractional differential equations using Haar wavelet (Hafsa, Aatif Nawaz, August 12, 2021)

3. Numerical solution of second order delay differential equations using Haar wavelet collocation method (Fakhar Zaman, Imad Ullah, Zohaib Khan, 2020).

4. Numerical solution of neutral delay partial differential equations using Haar wavelet collocation method (Muhammad Awais Barakat, 2018).

MS/MPhil Thesis Supervision (Completed)

1. Numerical solution of the systems of fractional order differential equations with Haar wavelet (Irfan Ullah Khan, University of Peshawar, October 03, 2020)

2. Numerical solution of second and third order integro-differential equations using Haar wavelet method (Muhammad Awais Barkat, University of Peshawar, October 03, 2020)

3. Numerical solution of delay integro-differential equations via Haar wavelet (Fazli Hadi, University of Peshawar, September 21, 2020)

4. Numerical solution of fractional integro-differential equations via Haar wavelet (Faheem Ullah University of Peshawar, January 08, 2020)

5. Numerical solution of delay integral equations using Haar wavelet collocation method (Waqar Ahmad, University of Peshawar, June 27, 2019)

6. Numerical solution of Abel's integral equations using Haar wavelet collocation method (Gul Islam, University of Peshawar, February 01, 2019)

MS/MPhil Thesis Supervision (in progress)
1. Ejaz Khan
2. Asmat Ullah Khan
3. Arshad Yousaf
4. Muhammad Nawaz
5. Muhammad Bilal
6. Shaheen Fatima

PhD Thesis Supervision (in progress)
1. Shumaila Yasmeen
2. Arshad Alam Khan
3. Muhammad Faheem
4. Javed Khan

Thesis Evaluated

BS

1. Solution of Modified Burgers' Equation via Cubic Trigonometric B-Spline Based Differential Quadrature Method (BS project in respect of Sajid Ali supervised by Dr. Arshad Ali letter No. 600/Math/ICP dated: 23-11-2020)

2. A Meshfree Method for the Solution of Kdv-Mkdv Equation Using Radial Basis Functions (BS project in respect of Javeria Shahid supervised by Dr. Arshad Ali letter No. 682/Math/ICP dated: 07-01-2021)

MS/MPhil

1. Criteria for Approximate solutions to Caputo-Fabrizio fractional differential equations (Eiman supervised by Dr. Kamal Shah letter No. UOM/Sec/M.Phil/3,864/40998 dated: 10-04-2021 University of Malakand Chakdara Dir lower 21-04-2021)

2. Degree product matrix and polynomial for a graph (Zahid Ullah MS scholar in Qurtuba University of Science & information Technology K1, Phase 3, Hayatabad Peshawar, Pakistan 17/04/2019)

3. Efficient numerical algorithms for computation of highly oscillatory integrals with and without stationary point (Noor Jamal MS scholar in Qurtuba University of Science & information Technology K1, Phase 3, Hayatabad Peshawar, Pakistan 07/02/2019)

4. Application of some different types of numerical methods for the solution of multi points problems (Huma Akbar MS scholar in Qurtuba University of Science & information Technology K1, Phase 3, Hayatabad Peshawar, Pakistan 07/08/2018)

International Workshops /Seminars /Conferences:

➢ 2-Day workshop on Semester System: Rethinking Education (Phase-III), March 16-17, 2017, Institute of Education and Research, University of Peshawar in collaboration with Fulbright.

➢ CIMPA-UNESCO-IRAK SCHOOL Inverse Problems: Theory and applications Erbil, Kurdistan Region-Iraq, May 5, 2014 - May 14, 2014.

➢ International Workshop on Solutions of Differential Equations from Transform Techniques ($SDET^2$ -2014), January 30 to February 1, 2014. COMSTECH Building, 33 Constitution Avenue, G-5/2, Islamabad Pakistan.

➢ Symmetries, Differential Equations and Applications ($S\partial EA$–II) 27th Jan - 30th Jan (2014). Center for Advanced Mathematics & Physics (CAMP) National University of Sciences & Technology (NUST), Campus H - 12, Islamabad, 44000, Pakistan.

Research Projects Awards:

➢ Project titled "Elaboration of Haar Collocation Technique for solution of the nonlinear Volterra-Fredholm fractional integro-differential equations of constant order" supported by the National Science Centre, Poland under Grant No. 2017/27/B/ST8/00351.

➢ Deanship of Scientific Research at King Khalid University through a research group program under Grant No.R.G.P.2/136/42.

➢ Research collaboration with Chinese collaborator, Liping Gao, Department of Computational Mathematics, School of Sciences, China University of Petroleum Qingdao, China, for a period of 11 days (from 14 June to 24 June 2019).

Research Papers:

2021

1. **Rohul Amin**, Kamal Shah, Muhammad Asif, Imran Khan, A computational algorithm for the numerical solution of fractional order delay differential equations, *Applied Mathematics and Computation*, 402 (2021), 125863, 1-10. https://doi.org/10.1016/j.amc.2020.125863 (**Impact Factor: 3**.472, **based on JCR 2020**)

2. **Rohul Amin,** B. Alshahrani, A. H. Abdel-Aty, Kamal Shah, Wejdan Deebani, Haar wavelet method for solution of distributed order time-fractional differential equations, *Alexandria Engineering Journal*, Volume 60, Issue 3, June 2021, Pages 3295-3303. https://doi.org/10.1016/j.aej.2021.01.039 (**Impact Factor: 3.732,, based on JCR 2020**)

3. **Rohul Amin,** Ibrahim Mahariq, Kamal Shah, Muhammad Awais, Fahmi Elsayed, Numerical solution of the second order linear and nonlinear integro-differential equations using Haar wavelet method, *Arab Journal of Basic and Applied Sciences,* Volume 28, 2021, Pages 11-19, Published online: 04 Jan 2021. https://doi.org/10.1080/25765299.2020.1863561

4. Hussam Alrabaiah, Israr Ahmad, **Rohul Amin**, Kamal Shah, A numerical method for fractional variable order pantograph differential equations based on Haar wavelet, *Engineering with Computers*, 2021, 1-15. https://doi.org/10.1007/s00366-020-01227-0. (**Impact Factor: 3**.938, **based on JCR 2020**)

5. Israr Ahmad, **Rohul Amin**, Thabet Abdeljawad, Kamal Shah, A numerical method for fractional pantograph delay integro-differential equations on Haar wavelet, *International Journal of Applied and Computational Mathematics,* 2021, 7:28, 1-13, 24 January 2021. https://doi.org/10.1007/s40819-021-00963-1

6. **Rohul Amin**, Kamal Shah, Q. M. Al-Mdallal, Imran Khan, Muhammad Asif, Efficient numerical algorithm for the solution of eight order boundary value problems by Haar wavelet method, *International Journal of Applied and Computational Mathematics,* 7:34 (2021), 1-18. https://doi.org/10.1007/s40819-021-00975-x

7. M. M. Alqarni, **Rohul Amin**, Kamal Shah, Shah Nazir, Muhammad Awais, Emad E.Mahmoud, Solution of third order linear and nonlinear boundary value problems of integro-differential equations using Haar wavelet method, *Results in Physics*, 25 (2021), 104176. (**Impact Factor: 4.019**, **based on JCR 2020**)

8. Yongtao Xuan, **Rohul Amin**, Fakhar Zaman, Zohaib Khan, Imad Ullah, Shah Nazir, Second-order delay differential equations to deal the experimentation of internet of industrial things via Haar wavelet approach, *Wireless Communications and Mobile Computing,* Volume 2021, Article ID 5551497, 1-9. https://doi.org/10.1155/2021/5551497 (**Impact Factor: 1.819**, **based on JCR 2020**)

9. M. Bilal Hafeez, **Rohul Amin**, Kottakkaran Sooppy Nisar, Wasim Jamshed, A. Alharthie, Heat transfer enhancement through Nanofluids with Applications in Automobile Radiator, *Case study in thermal engineering*, 2021, Available online 15 July 2021, 101192. (**Impact Factor: 4.724**, **based on JCR 2020**) https://doi.org/10.1016/j.csite.2021.101192

10. Hualing Wu, **Rohul Amin**, Asmatullah Khan, Shah Nazir, Sultan Ahmad, Solution of the systems of delay integral equations in Heterogeneous data communication through Haar wavelet collocation approach, *Complexity*, Vol. 2021, Article ID 5805433, 1-11 https://doi.org/10.1155/2021/5805433 (**Impact Factor: 2.591**, **based on JCR 2020**)

11. **Rohul Amin,** Hijaz Ahmad, Kamal Shah, M. Bilal Hafeez, W. Sumelka, Theoretical and computational analysis of nonlinear fractional integro-differential equations via collocation method, *Chaos, Solitons and Fractals,* 151 (2021) 111252. https://doi.org/10.1016/j.chaos.2021.111252 (**Impact Factor: 5.944**, **based on JCR 2020**)

12. **Rohul Amin**¸ Suayip Yüzbasi, Muhammed Syam, A Computational Algorithm for Solution of Population Models for Single and Interacting Species, *Int. J. Appl. Comput. Math.,* 2021, 7:186, 1-17. https://doi.org/10.1007/s40819-021-01119-x

13. Imran Khan, Muhammad Asif, **Rohul Amin,** Qasem Al-Mdallal, Fahd Jarad, On a new method for finding numerical solution to integro-differential equations based on Legendre multi-wavelet collocation, *Alexandria Engineering Journal*, Volume 60, Issue 3, June 2021, https://doi.org/10.1016/j.aej.2021.08.032 (**Impact Factor: 3.732, based on JCR 2020**)

14. **Rohul Amin**, Ali Ahmadian, Nasser Aedh Alreshidi, Liping Gao, Mehdi Salimi, Existence and computational results to Volterra-Fredholm integro-differential equations involving delay term, *Computational and Applied Mathematics,* October 18, 2021, 40:276. https://doi.org/10.1007/s40314-021-01643-y (**Impact Factor: 2.239, based on JCR 2020**)

15. Arshad Alam Khan, **Rohul Amin**, Saif Ullah, Wojciech Sumelka, Mohamed Altanji, Numerical analysis of a fractional coronavirus epidemic model with the impact of the environmental transmission, *Alexandria Engineering Journal,* 4 October 2021, 1--25 https://doi.org/10.1016/j.aej.2021.10.008 (**Impact Factor: 3.732, based on JCR 2020**)

2020

1. **Rohul Amin**, Kamal Shah, Muhammad Asif, Imran Khan, Faheem Ullah, An efficient algorithm for numerical solution of fractional integro-differential equations via Haar wavelet, *Journal of Computational and Applied Mathematics,* Volume 381, 1 January 2021, 113028. (**Impact Factor:** 2.037, **based on JCR 2019)** https://doi.org/10.1016/j.cam.2020.113028s

2. Thabet Abdeljawad, **Rohul Amin**, Kamal Shah, Qasem Al-Mdallal, Fahd Jarad, Efficient sustainable algorithm for numerical solutions of systems of fractional order differential equations by Haar wavelet collocation method, *Alexandria Engineering Journal*, Volume 59, Issue 4, August 2020, Pages 2391-2400 .https://doi.org/10.1016/j.aej.2020.02.035 (**Impact Factor:** 2.460, **based on JCR 2019)**

3. Kamal Shah, Zareen A. Khan, Amjad Ali, **Rohul Amin**, Hasib Khan, Aziz Khan, Haar wavelet collocation approach for the solution of fractional order COVID-19 model using Caputo derivative, Alexandria Engineering Journal, Volume 59, Issue 5, October 2020, Pages 3221-3231. (**Impact Factor:** 2.460, **based on JCR 2019**) https://doi.org/10.1016/j.aej.2020.08.028

4. **Rohul Amin**, Kamal Shah, Muhammad Asif, Imran Khan, Efficient numerical technique for solution of delay Volterra-Fredholm integral equations using Haar wavelet, *Heliyon*, Volume 6, Issue 10, October 06, 2020, e05108. (**Impact Factor: 1.6**, **based on JCR 2019)**

https://doi.org/10.1016/j.heliyon.2020.e05108

5. **Rohul Amin**, Kamal Shah, Imran Khan**,** Muhammad Asif, Mehdi Salimi, Ali Ahmadian, Efficient numerical scheme for the solution of tenth order boundary value problems by Haar wavelet method, *MDPI Journal/Mathematics*, 8, 1874, https://doi.org/doi:10.3390/math8111874 October 2020. (**Impact Factor:** 1.747, **based on JCR 2019**)

6. **Rohul Amin**, Kamal Shah, Imran Khan, Muhammad Asif, Kholod M .Abualnaja, Emad E. Mahmoud and Abdel-Haleem Abdel-Aty, A powerful numerical technique for treating twelfth-order boundary value problems, *Open Physics,* 2020; 18: 1048–1062, Published online: 24 Dec 2020, DOI: https://doi.org/10.1515/phys-2020-0205

7. **Rohul Amin**, Shah Nazir, Ivan Garcia-Magarino, Efficient sustainable algorithm for numerical solution of nonlinear delay Fredholm-Volterra integral equations via Haar wavelet for dense sensor networks in emerging telecommunications, *Transactions on Emerging Telecommunications Technologies*, https://doi.org/10.1002/ett.3877, 22 January 2020 Page 1-12 (**Impact Factor:** 1.594, **based on JCR 2019**)

8. **Rohul Amin**, Shah Nazir, Ivan Garcia-Magarino, A collocation method for numerical solution of nonlinear delay integro-differential equations for wireless sensor network and internet of things, *Sensors, V*ol. 20, **2020**, 1962; https://doi.org/doi:10.3390/s20071962 (**Impact Factor:** 3.275, **based on JCR 2019)**

9. Meilian Li, Shah Nazir, Habib Ullah Khan, Sara Shahzad and **Rohul Amin**, Modelling Features-Based Birthmarks for Security of End-to-End Communication System, *Security and Communication Networks,* Volume 2020, Article ID 8852124, 9 pages, https://doi.org/10.1155/2020/8852124. (**Impact Factor:** 1.288, **based on JCR 2019**)

10. Rahmita Wirza, Shah Nazir, Habib Ullah Khan, Ivan Garcıa-Magariño, **Rohul Amin,** Augmented Reality Interface for Complex Anatomy Learning in the Central Nervous System: A Systematic Review, Journal of Healthcare Engineering, Volume 2020, Article ID 8835544, 15 pages, https://doi.org/10.1155/2020/8835544 . (**Impact Factor:** 1.51, **based on JCR 2019**)

11. **Rohul Amin,** Şuayip Yüzbaşi, Liping Gao, Muhammad Asif and Imran Khan, Algorithm for the numerical solutions of Volterra population growth model with fractional order via Haar wavelet, *Contemporary Mathematics,* Vol. 1, Issue 2, **2020,** page 102-111, https://doi.org/doi:10.37256/cm.00056.102-111.

2019

1. M. M. Khashan, **R. Amin** and M. I. Syam, A new algorithm for fractional Riccati type differential equations by using Haar wavelet, *MDPI Journal/Mathematics*, 7, 545; doi:10.3390/math7060545, 14 June 2019. (**Impact Factor:** 1.747, **based on JCR 2018**)

2. S. Nazir, S. Shahzad , R. Wirza , **R. Amin** , M. Ahsan, N. Mukhtarb , I. G. Magariño, J. Lloret, Birthmark based identification of software piracy using Haar wavelet, *Mathematics and Computers in Simulation*, 166 (2019) 144 – 154. 17 May 2019. (**Impact Factor:** 1.409, **based on JCR 2018**)

https://doi.org/10.1016/j.matcom.2019.04.010

2018

1. I. Aziz, S. Yasmeen and **R. Amin**, Haar wavelet method for numerical solution of pantograph functional differential equations, *proceedings of the 6th international conference on control and optimization with industrial applications*, Vol. I page 116-118. Published 2018

2016

1. I. Aziz and **R. Amin**, Numerical solution of a class of delay differential and delay partial differential equations via Haar wavelet, *Applied Mathematical Modelling*, 40 (2016), 10286–10299. (**Impact Factor:** 2.931) https://doi.org/10.1016/j.apm.2016.07.018

2. I. Aziz, **R. Amin** and J. Majak, Numerical solution of a class of fractional delay differential equations via Haar wavelet, *11th International DAAAM Baltic Conference INDUSTRIAL ENGINEERING*, 20-22 April 2016, Tallinn, Estonia.

2015

1. S. Nazir, S. Shahzad, A. Keerio, **R. Amin** and Z. Hussain, Identifying software features as a birthmark" Sindh University research journal (Science Series), Category- X, Vol. 47, no. 3, pp. 535-540 2015.

2014

1. S. Nazir, S. Anwar, S. A. Khan, S. Shahzad, M. Ali, **R. Amin**, M. Nawaz, P. Lazaridis, and J. Cosmas, Software Component Selection Based on Quality Criteria Using the Analytic Network Process, *Abstract and Applied Analysis,* vol. 2014, 1-12, 2014. **(Impact Factor 1.27, based on JCR 2013).**

2. S. Nazir, S. Shahzad, N. Mukhtar, H. Khan, I. Zada, M. Nazir, and **R. Amin**, Test case prioritization for components using FANP, *Life Science Journal, V*ol. 11, 504-511, 2014. **(Impact Factor 0.17, based on JCR 2012).**

3. S. Shahzad, S. Nazir, S. B. Abid, I. Zada, and **R. Amin**, Software component project evaluation based on quality measure, *Life Science Journal,* Vol. 11, 98-107, 2014. **(Impact Factor 0.17, based on JCR 2012).**

4. A. Zada, T. Li, **R. Amin** and G. Rahmat, A survey of the recent results on characterizations of exponential stability and dichotomy over finite dimensional spaces, Eurasian Mathematical Journal Vol. 5, Number 4 (2014), 113 – 133

5. A. Zada, **R. Amin**, G. A. Khan and M. Asif, A characterization of dichotomy for autonomous discrete systems, *Journal of Advanced Research in Dynamical and Control Systems,* Vol. 6, Issue 1, 2014, 48-55.

2013

1. A. Zada, **R. Amin,** T. Hussain and M. Asif, Discrete Characterization of Exponential Dichotomy of Evolution Family Over Finite Dimensional Spaces, *World Applied Sciences Journal*, 27 (12): 1630-1636, 2013 (**impact factor 0.234**).

2. A. Zada, G. A. Khan, M. Asif and **R. Amin**, On dichotomy of autonomous systems and boundedness of some Cauchy Problems*, International Journal of Research and Reviews in Applied Sciences*, 14(3), 2013, 533-538.

2012

1. A. Zada, S. Arshad, G. Rahmat and **R. Amin**, Dichotomy of Poincare Maps and Boundedness of some Cauchy sequences, *Applied Mathematics E-Notes*, 12: (2012), 14-22.

Refereeing (articles refereed for the following journals)

- International Journal of Modeling, Simulation, and Scientific Computing
- International Journal of Electrical Engineering and Computer Science
- Journal of Ambient Intelligence and Humanized Computing
- Computational and Mathematical Organization Theory
- International Journal of Advances in Applied Sciences
- Computational and Structural Biotechnology Journal
- Sigma Journal of Engineering and Natural Sciences
- Mathematical Methods in the Applied Sciences
- Journal of Software: Evolution and Process
- Asian Journal of Probability and Statistics
- Asian Research Journal of Mathematics
- Mathematical Problems in Engineering
- Journal of Partial Differential Equations
- Multimedia Tools and Applications
- Kragujevac Journal of Mathematics
- Computers, Materials & Continua
- Advances in Mathematical Physics
- Journal of Healthcare Engineering
- Journal of Mathematics Research
- Measurement and Control
- Baghdad Science Journal
- Ricerche di Matematica
- Journal of Mathematics
- SN Applied Sciences
- AIMS Mathematics
- PLOS ONE

Online Profile Links:
- https://www.researchgate.net/profile/Rohul-Amin-2
- https://orcid.org/my-orcid?orcid=0000-0002-7000-3958
- https://scholar.google.com/citations?hl=en&user=3d8z1u8AAAAJ
- https://publons.com/researcher/3411286/rohul-amin/