PERSONAL INFORMATION

Dawood Khan

Department of Mathematics, University of Balochistan, Quetta 87300, Pakistan.

dawooddawood601@gmail.com

RG https://www.researchgate.net/profile/Dawood-Khan-12

iD https://orcid.org/0000-0002-6850-6783

Sex: Male | Nationality | Pakistani

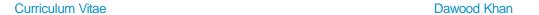|	
2022-2025 Institution CGPA Research work Thesis Title	**PhD in Mathematics (Integral Inequalities)** **COMSATS University Islamabad, Lahore Campus, Pakistan** **3.94/4.0 (90 %)** **Universiti Sains Malaysia** **New Variants of Integral Inequalities via Superquadratic Functions.**
2018-2021 Institution CGPA Thesis Title	**MPhil in Mathematics (Algebra)** **University of Balochistan, Quetta, Pakistan** **3.73/4.0 (83 %)** **Discrete Dynamical System in BCK-Algebra**.
2010-2012 Institution Marks (%)	**M.Sc Mathematics** **University of Balochistan , (Mathematics Dept) ,Pakistan** **761/950 (80.10 %)**
2007-2010 Institution Marks (%)	**B.Sc (Mathematics, Statistics)** **Govt Postgraduate Science Collage Quetta, Pakistan** **510/800 (63.75 %)**
2005-2007 Institution Marks (%)	**F.Sc (Pre-Engineering)** **Govt Postgraduate Science Collage Quetta, Pakistan** **563/1100 (51.18 %)**
2003–2005 Institution Marks (%)	**Matriculation in Science** **Govt High School Killi Gul Muhammad Quetta, Pakistan** **538/1050 (51.23 %)**

PUBLICATIONS

1. Ghulam Jallani, Saad Ihsan Butt, **Dawood Khan** and Young Seol, Refined Hermite-Hadamard Type Inequalities via Multiplicative Non-Singular Fractional Integral Operators and Applications in Superquadratic Structures. *Fractal and Fractional .* 2025, *9*, 617.

2. Saad Ihsan Butt, **Dawood Khan**, Sanja Tipurić-Spužević, and Bandar Bin Mohsin. "Fractional perspective of HH f-divergence, midpoint and trapezoidal type estimates for superquadratic function." *Kuwait Journal of Science* (2025): 100452.

3. Mohsen Ayyash, **Dawood Khan**, Saad Ihsan Butt, Sanja Tipuric-Spuzevic and Edrisa Jawo. "Refined Integral Inequalities and Their Applications to Special Functions via Fractional Calculus" *Sahand Communications in Mathematical Analysis,* (2025). Doi: *10.22130/scma.2025.2057729.2148.*

4. Mohsen Ayyash, **Dawood Khan**, Saad Ihsan Butt, and Youngsoo Seol. "Superquadratic stochastic processes and their fractional perspective with applications in information theory." *AIMS Mathematics,* 10 (6)(2025), 13695 -13720.

5. Saad Ihsan Butt, **Dawood Khan**, Valer-Daniel Breaz, Luminita-Ioana Cotîrlă, and Bandar Bin Mohsin. "Fractional integral inequalities for strongly convex functions via multiplicative calculus with applications."*Boundary Value Problems,* 2025(1)(2025), 1-26.

6. Saad Ihsan Butt, **Dawood Khan**, Sanja Tipuric-Spuzevic, and Youngsoo Seol. "Generalized Petrovic inequality and its related estimations in superquadraticity on the fractal space with applications." *Fractals,* (2025).

7. Mohsen Ayyash, **Dawood Khan**, Saad Ihsan Butt, and Youngsoo Seol. "Fractional Inclusion Analysis of Superquadratic Stochastic Processes via Center-Radius Total Order Relation with Applications in Information Theory." *Fractal and Fractional* ,9(6) (2025), 375.

8. Muhammad Umar, Saad Ihsan Butt, **Dawood Khan**, SanjaTipurić-Spužević and Youngsoo Seol. "Hybrid error estimates of Weddle's formula and their applications for various classes of functions." *Ain Shams Engineering Journal*, *16*(8) (2025), 103444.

9. Saad Ihsan Butt , Muhammad Umar, **Dawood Khan** and Youngsoo Seol. "Fractional Version of Bullen type Inequalities via Multiplicative Calculus with Applications." *Fractals (*2025*).*

10. **Dawood Khan** and Saad Ihsan Butt. "Analysis of P-Superquadraticity and Related Integer and Fractional Order Inequalities with Applications." *Sahand Communications in Mathematical Analysis* (2025).

11. **Dawood Khan** , Saad Ihsan Butt, Asfand Fahad, Yuanheng Wang, and Bandar Bin Mohsin. "Analysis of superquadratic fuzzy interval valued function and its integral inequalities." *AIMS Mathematics* 10, no. 1 (2025): 551-583.

12. Saad Ihsan Butt, **Dawood Khan**, and Youngsoo Seol. "Fractal perspective of superquadratic functions with generalized probability estimations." *PloS one* 20.2 (2025): e0313361.

13. Butt, Saad Ihsan, Muhammad Umar, **Dawood Khan**, Youngsoo Seol, and Sanja Tipurić-Spužević. 2025. "Hermite–Hadamard-Type Inequalities for Harmonically Convex Functions via Proportional Caputo-Hybrid Operators with Applications" *Fractal and Fractional* 9, no. 2: 77.
https://doi.org/10.3390/fractalfract9020077

14. **Dawood Khan,** Saad Ihsan Butt, and Youngsoo Seol. "Properties and integral inequalities of P-superquadratic functions via multiplicative calculus with applications." *Boundary Value Problems* 2024, no. 1 (2024): 1-40. https://doi.org/10.1186/s13661-024-01978-5

15. Saad Ihsan Butt**, Dawood Khan**, Shilpi Jain, Georgia Irina Oros, Praveen Agarwal, and Shaher Momani. "Fractional integral inequalities for Superquadratic functions Via Atangana-Baleanu's operator with applications." *Fractals* (2024). https://doi.org/10.1142/S0218348X25400687

16. Saad Ihsan Butt and **Dawood Khan. "**Superquadratic function and its applications in information theory via interval calculus." *Chaos, Solitons & Fractals* 190 (2025): 115748. https://doi.org/10.1016/j.chaos.2024.115748

17. **Dawood Khan**, Saad Ihsan Butt, and Youngsoo Seol. "Analysis of (P, m)-superquadratic function and related fractional integral inequalities with applications." *Journal of Inequalities and Applications* 2024.1 (2024): 137. https://doi.org/10.1186/s13660-024-03218-x

18. **Dawood Khan,** Saad Ihsan Butt and Youngsoo Seol. "Analysis on Multiplicatively (P, m)-Superquadratic Functions and Related Fractional Inequalities with Applications." *Fractals* (2024): 2450129. https://doi.org/10.1142/S0218348X24501299

19. Saad Ihsan Butt and **Dawood Khan**, Integral inequalities of h-superquadratic functions and their fractional perspective with applications. *Mathematical Methods in the Applied Sciences,* (2024). **https://doi.org/10.1002/mma.10418**

20. **Dawood Khan** and Saad Ihsan Butt, Superquadraticity and its fractional perspective via center-radius cr-order relation. *Chaos, Solitons & Fractals*, *182* (2024), p.114821. https://doi.org/10.1016/j.chaos.2024.114821

21. **Dawood Khan** et al. "Properties of Discrete Dynamical System in BCI-Algebra." *International Journal of Management and Fuzzy Systems* 6.3 (2020): 53-58. https://doi.org/10.11648/j.ijmfs.20200603.12.

22. **Dawood Khan** and Abdul Rehman. "A New View of Homomorphic Properties of BCK-Algebra in Terms of Some Notions of Discrete Dynamical System." *Journal of New Theory* 35: 1-10. https://doi.org/10.53570/jnt.798677

23. **Dawood Khan** et al. "Some Results of Self-Maps in PU-Algebra." *Punjab University Journal of Mathematics* 53.3 (2021). https://doi.org/10.52280/pujm.2021.530301.

24. **Dawood Khan** et al. "MODIFIED FOURIER TRANSFORM AND ITS PROPERTIES." *ГРАНИЧНЫЕ ОСОБЕННОСТИ МЕРОМОРФНЫХ ФУНКЦИЙ С СУММИРУЕМОЙ СФЕРИЧЕСКОЙ ПРОИЗВОДНОЙ И АННУЛЯРНЫХ ФУНКЦИЙ. РАССМОТРЕНИЕ* (2021): 60. https://doi.org/10.20948/mathmontis-2021-51-5.

25. Khan, Mehmood, **Dawood Khan** and Khalida Mir Aalm. "Characterization of Associative PU-algebras by the Notion of Derivations." *American Journal of Mathematical and Computer Modelling* 6.1 (2021): 14-18. https://doi.org/10.11648/j.ajmcm.20210601.13.

26. Shafiq, Muhammad, Naveed Sheikh, and **Dawood Khan**. "Topological Structure of Fuzzy PU-new Ideal in PU-algebra." *International Journal of Systems Science and Applied Mathematics* 6 (2021): 125.
 https://doi.org/10.11648.j.ijssam.20210604.13.

27. Khalida M. Aalm, **Dawood Khan**, Ali Ahmed, Saleem Iqbal and Muhammad, Sardar. "Some Algebraic and Topological Structures of Laplace Transformable Functions." Jordan Journal of Physics 16 (1) (2023) 85-89. https://doi.org/10.47011/16.1.8.

28. Najeeb Ullah, Naveed Sheikh, Ali Ahmed, Saleem Iqbal, **Dawood Khan**, Mehmood Khan, Khalida Mir Alam, And Muhammad Umar Farooq. "Insertion of Pythagorean fuzzification in PU-algebras." *European Academic Research X(5) (*2022)1965-73.

29. Tariq, M., Sahoo, S. K., Ahmad, H., Shaikh, A. A., Kodamasingh, B., & **Dawood Khan.** **"**Some integral inequalities via new family of preinvex **functions"**. *Mathematical Modelling and Numerical Simulation with Applications*, *2*(2) (2022**)**, 117-126.https://doi.org/10.53391/mmnsa.2022.010

30. Munir, Durdana, Naveed Sheikh, Abdul Raziq, Abdul Rehman, Abdul Basit, Ihsan Ullah, and **Dawood Khan**. "Blood Pressure Estimation Using Artificial Neural Network and Multitaper Model." *LINGUISTICA ANTVERPIENSIA* (2021): 4041-4052.

WORK EXPERIENCE

Designation	<u>Lecturer</u>
Organization	University of Balochistan, Quetta, Pakistan.
Timeline	08/05/2017- to current

Designation	<u>Lecturer</u>
Organization	(Education Department) Govt Boys Degree College Chaman, Pakistan
Timeline	16/05/2016 – 04/05/2017

Designation	<u>Lecturer</u>
Organization	Cadet College Killa Saifullah, Pakistan
Timeline	10/12/2013 – 15/05/2016

Designation	<u>Lecturer</u>
Organization	Masoom,s Educational Complex, Quetta, Pakistan
Timeline	08/03/2012 – 10/12/2013

DIGITAL SKILLS

- **Microsoft Office / Microsoft Word**
- **Latex**
- **Mathematica**
- **MatLab**

VACCINATED	• Vaccine (Sinopharm, China National Pharmaceutical Group Co., Ltd 2021030324 and Sinopharm, China National Pharmaceutical Group Co., Ltd 2021010077) • 16/07/2021 – 03/09/2021 • I have been Vaccinated against COVID-19 as per government instructions and directives from Civil Hospital Quetta.

LANGUAGES	• **Pashto** (Mother language), • **Urdu** (National language), • **English** proficient (without IELTS)

COMMUNICATION SKILLS	I have been served as a teacher in different institutions in different regions with different civilization and languages. I taught to different (High and Low) level classes where I faced the students with ages between 7 and 23 years. Through this experience i came to know that (how to deal, how to convey your message, how to convince, how to make them happy, how to force them to work) the peoples with different civilization and languages.

ORGANISATIONAL / MANAGERIAL SKILLS	• Besides my academic activities I have also been served as an incharge of admission and examination committees for two years as well as served as a coordinator of the department for one year.

CERTIFICATION	• Appreciation Certificate Iqra Residential School and College Quetta • Algebra: Elementary to Advanced – Polynomials and Roots (Coursera) • Distinction Certificate (Master of Science) • 10 Days Cascading Workshop for Faculty Professional Development (FTDC) • Balochistan Academy For College Teachers (BACT)

HONOURS AND AWARDS	• Gold Medallist in MSC (Mathematics) • First Position in the Course Work of MPhil (Mathematics) • Visiting researcher at the UNIVERSITI Sains Malaysia (12th March 2025 to 12th September 2025)

REFERENCES	Dr. Saad Ihsan Butt – Associate Professor – saadihsanbutt@gmail.com- (+92) 3126261362 Department of Mathematics, COMSATS University Islamabad, Lahore Campus, Pakistan. Dr. Mohsen Ayyash– Assistant Professor – mhayyash@usm.my– (+60)129540035, School of Mathematical Sciences, Universiti Sains Malaysia, Penang 11800, Malaysia.