

Curriculum Vitae

Prof. Dr. Muhammad Adil Khan
Chairman
Department of Mathematics
University of Peshawar Pakistan



1 Personal Information:

Nationality: Pakistani

Email: madilkhan@uop.edu.pk, adilswati@gmail.com

Mailing address: Department of Mathematics, University of Peshawar,
Peshawar, Pakistan.

2 Academic Background:

1. PhD: Abdus Salam School of Mathematical Sciences, GCU, Lahore, Pakistan.

Title of Dissertation: Inequalities for Bregman and Burbea-Rao Divergences and Related Results.

Defense Date: 30 March 2012

Supervisor: **Prof. Dr. Josip Pečarić**, Faculty of Textile Technology, University of Zagreb, Croatia.

2. M. Sc, University of Malakand, Chakadara, Pakistan (2006)

3. B. Sc, University of Peshawar, Peshawar, Pakistan (2003)

4. F.Sc, BISE Saidu Sharif Swat Pakistan (2001)

5. SSC, BISE Saidu Sharif Swat Pakistan (1999)

6. B.Ed, Allama Iqbal Open University Islamabad, Pakistan (2006).

3 Research Field and Interest:

- Theory of Inequalities
- Theory of Convexity
- Functional Analysis
- Operator Theory
- Information Theory

4 Teaching Experience

Assistant Professor in Department of Mathematics University of Peshawar from 09-05-2012 to date.

Courses Taught:

- Measure Theory
- Real Analysis
- Functional Analysis
- Convex Analysis
- Mathematical Inequalities and Applications
- Special Functions
- Algebra
- Calculus

5 Referee in International Journals:

1. Journal of Inequalities and Applications
2. Mathematical Communications
3. Advances in Pure Mathematics
4. Turkish Journal of Mathematics
5. FILOMAT
6. Cogent Mathematics
7. Studia Universitatis Babeş-Bolyai Mathematica.
8. Journal of Mathematical Analysis
9. Communication in Mathematical Modeling and Applications
10. European Journal of Pure and Applied Mathematics
11. Journal of Nonlinear Sciences and Applications
12. Journal of Mathematical Inequalities
13. Mathematical Inequalities & Applications
14. Mathematics
15. Symmetry
16. Journal of Computational Mathematics and Applications
17. Journal of Function Space
18. Fractal and Fractional
19. Axioms
20. Journal of Mathematics

6 Supervision:

11 PhD and 36 MPhil students supervised successfully.

7 Conferences/Schools /Workshops

- **As a presenter**, 5th World Conference on 21st Century Mathematics; held 09-13 February 2011; Abdus Salam School of Mathematical Sciences, GC University, Lahore, Pakistan.
- **As a presenter**, International Conference on Mathematical Inequalities and Applications; held 07-13 March 2010; Abdus Salam School of Mathematical Sciences, GC University, Lahore, Pakistan.
- **As a presenter**, 4th World Conference on 21st Century Mathematics; held 04-08 March 2009; Abdus Salam School of Mathematical Sciences, GC University, Lahore, Pakistan.
- **As a participant**, LUMS 2nd International Conference on Mathematics and its Applications in Information Technology; held 09-12 March 2008; Lahore University of Management Sciences, Lahore, Pakistan.
- **As a participant**, Two Days National Conference on Mathematical Science, Islamic International University Islamabad” on 19th, 20th October, 2012
- **As a participant**, CIMPA-UNESCO-SCHOOL PAlgebraic Curves over finite fields and applications Manilla, Jul 22, 2013 - Aug 2, 2013
- **As a presenter**, CIMPA-UNESCO-SCHOOL **MONGOLIA** Hypergeometric Functions and Representation Theory Ulaanbaatar, Aug 5, 2013 - Aug 16, 2013.
- **As a participant**, CIMPA-UNESCO-SCHOOL **Iraq** Inverse problem and Their application, 5 May, 2013 -16 May 16, 2014
- **As a presenter**, International Conference on Mathematical Inequalities and Application one Thousand Papers, The Department of Mathematical, Physical And Chemical Sciences of The Croatian Academy of Sciences And Arts . June 22-26, 2014, **Trogir, Croatia**.
- **As a presenter**, Work Shop on Advancements in Pure and Applied Mathematics, COMSATS Institute of Information Technology, Attock Campus Department of Mathematics, April 24-25, 2014.
- **As a presenter**, International Conference on Recent Advances in Pure and Applied Mathematics (ICRAPAM 2015), Istanbul Commerce University, **Turkey**, 3-6 Jun 2015.
- **As a presenter**, 16th International Pure Mathematics Conference 2015 Algebra, Analysis and Geometry, Islamabad, 3-6 August 2015.
- **As a presenter**, International Conference on Mathematical Inequalities and Application, Mostar, **Bosnia and Herzegovina**, 11-15 November 2015.
- **As a presenter**, 1st UMT International Conference in pure and applied Science, Lahore, 5-7 March 2016.
- **As a participant**, On Recent Advances in Mathematical Methods, Models & Applications, Lahore School of Economics, April 11 - 12, 2016.
- **As a presenter**, 17th International Pure Mathematics Conference 2016 Algebra, Analysis and Geometry, Islamabad, 5-7 August 2016.

- **As a presenter**, 2nd International Conference On Advances in Natural and Applied Sciences, **Antalya, Turkey**, April 18-21, 2017.
- **As a presenter**, International Conference on Nonlinear Analysis and Convex Analysis, Chitose City Cultural Center **Hokkaido Japan**, July 4-9, 2017.
- **As a participant**, On Recent Advances in Mathematical Methods, Models & Applications, Lahore School of Economics, April 7 - 8, 2018
- **As a presenter**, 17th International Pure Mathematics Conference 2018 Algebra, Analysis and Geometry, Islamabad, 17-19 August 2018.
- **As an invited speaker**, 4th International Conference on Pure and Applied Mathematics, Department of Mathematics, University of Sargodha, December 21-22, 2018.
- **As an invited speaker**, Online, 18th International Conference on Operational Research KOI 2020, September 23-25, 2020 in Croatia

8 List of Publications

- 1) M. Adil Khan, M. Anwar, J. Jaksetić and J. Pečarić, On some improvements of the Jensen inequality with some applications, *J. Inequal. and Appl.*, (2009), Article ID 323615, 15 pages.
- 2) M. Adil Khan and J. Pečarić, Improvement and reversion of Slater's inequality and related results, *J. Inequal. and Appl.*, (2010), Article ID 646034, 14 pages.
- 3) M. Adil Khan, M. Niezgoda and J. Pečarić, On a refinement of the majorization type inequality, *Demonstratio Math.*, Vol. 44, No. 1 (2011), 49-57.
- 4) M. Adil Khan and J. Pečarić, On Slater's integral inequality, *J. Math. Inequal.*, Vol. 5, No. 2 (2011), 231-241.
- 5) M. Adil Khan, M. Niezgoda and J. Pečarić, Further results on convex functions and separable sequences with applications, *Acta Math. Vietnam*, Vol. 37, No. 3 (2012), 327-339.
- 6) M. Adil Khan, Naveed Latif, J. Pečarić and I. Perić, On Sapogov's extension of Chebyshev's inequality and related results, *Thai J. Math.*, Vol. 10, No. 2 (2012), 617-633.
- 7) M. Adil Khan, M. Niezgoda and J. Pečarić, Bregman and Burbea-Rao divergences for matrices, *Rad Hazu* Vol. 515 (2013), 11-32.
- 8) M. Adil Khan, Naveed Latif, I. Perić and J. Pečarić, On majorisation for matrices, *Mathematica Balkanica*, Vol. 27, Fasc 1-2 (2013), 3-19.
- 9) M. Adil Khan, Sadia Khalid and J. Pečarić, Improvement of Jensen's inequality in term of the Gateaux derivatives for convex functions in linear spaces with applications, *Kyungpook Math. J.*, Vol. 52 (2012), 495-511.
- 10) M. Adil Khan, Asif R. Khan and J. Pečarić, On the refinements of Jensen-Mercer's inequality, *Revue D'Analyse Numerique Et De Theorie De L'Approximation*, Tome 41, No 1, (2012), 62-81.
- 11) M. Adil Khan, Sadia Khalid and J. Pečarić, Refinements of some majorization type inequalities, *J. Math. Inequal.*, Vol. 7, No. 1 (2013), 73-92.
- 12) M. Adil Khan, Majorization inequality for convexifiable functions, *Math. Commun.*, Vol. 18 (2013), 61-65.
- 13) M. Adil Khan and J. Pečarić, Improvement of Jensen's inequality for Quasi Arithmetic Mean with some applications, *Punjab University Journal of Mathematics*, Vol. 45 (2013), 99-113.
- 14) M. Adil Khan, G. Ali Khan, T. Ali, T. Batbold and A. Kilicman, Further refinements of Jensen's type inequalities for the function defined on the rectangle, *Abstract and Applied Analysis*, Vol. 2013, Article ID 214123, 9 pages
- 15) M. Adil Khan, A. Kilicman, N. Rehman, Integral majorization theorem for invex functions. *Abstract and Applied Analysis Volume 2014*, Art. ID 149735, 4 pages
- 16) M. Adil Khan, S. Khalid and J. Pečarić, n-exponential convexity for majorization inequality for functions of two variables and related results, *Acta Comment. Univ. Tartu. Math.*, Vol. 18, No. 2 (2014), 221-237.
- 17) M. Adil Khan, N. Latif, and J. Pečarić, Generalization of majorization theorem, *J. Math. Inequal.* Vol. 9, No. 3 (2015), 847-872.
- 18) M. Adil Khan, N. Latif and J. Pečarić, Generalization of majorization theorem by Hermite's polynomial, *J. Adv. Math. Stud.*, 8(2) (2015), 206-223.
- 19) M. Adil Khan, G. Ali Khan, T. Ali, and A. Kilicman, On the refinement of Jensen's inequality, *Applied Mathematics and Computation*, 262 (2015), 128-135.
- 20) M. Adil Khan, Naveed Latif, and J. Pečarić, On generalizations of majorization inequality, *Nonlinear Functional Analysis and Applications*, 20 (2) (2015), 301-327.
- 21) M. Adil Khan, N. Latif, and J. Pečarić, Generalization of majorization theorem Via Abel-Gontscharoff Polynomial, *Rad Hrvat. Akad. Znan. Umjet. Mat. Znan*, 19(523) (2015), 91-113.
- 22) M. Adil Khan, G. Ali Khan, M. Jamil, K. A. Khan and A. Kilicman, New refinements of Jensen-Mercer Inequality, *Journal of Computational and Theoretical Nanoscience*, 12 (2015) 4408-4414.
- 23) M. Adil Khan, J. Khan and J. Pečarić, Generalizations of Sherman's inequality by Montgomery Identity and Green function, *Mongolian Mathematical Journal* 19 (2015), 46-63.
- 24) T. Batbold, V. Adiyasuren and M. Adil Khan, Refined arithmetic-geometric mean inequality and new entropy upper bound, *Commun. Korean Math. Soc.* 31 (1) (2016), 95-100.
- 25) Q. Din, M. Adil Khan, Umer Saeed, Qualitative Behaviour of Generalised Beddington Model, *Zeitschrift für Naturforschung A*, 71(2), (2016), 145-155.

- 26) S. S. Dragomir, M. Adil Khan and A. Abathun, Refinement of Jensen's integral inequality, *Open Math.*, 14 (2016), 221–228.
- 27) M. Adil Khan, T. Ali, Q. Din and A. Kilicman, Refinements of Jensen's inequality for convex functions on the co-ordinates of a rectangle from the plane, *Filomat*, 30 (3) (2016), 803–814.
- 28) M. Adil Khan, N. Latif, and J. Pečarić, Majorization type inequalities via Green function and Hermite's polynomial, *J. Indones. Math. Soc.* 22(1) (2016), 1-25.
- 29) Yu-Ming Chu, M. Adil Khan, T. U Khan and T. Ali, Generalizations of Hermite-Hadamard type inequalities for MT-Convex functions, *J. Nonlinear Sci. Appl.* 9 (2016), 4305-4316.
- 30) M. Adil Khan, Y. Khurshid, T. Ali and N. Rehman, Inequalities for three times differential functions, *Punjab University Journal of Mathematics*, 48(2) (2016), 35-48.
- 31) Erhan Set, Suleyman Sami Karatas and Muhammad Adil Khan, New Hermite - Hadamard type inequalities obtained via fractional integral for differentiable m-convex and (α, m) -convex function, *International Journal of Analysis*, Volume 2016, Article ID 4765691, 8 pages.
- 32) M. Adil Khan, S. Ivlic Bradanovic and J. Pečarić, Generalizations of Sherman's inequality by Hermite's interpolating polynomial, *Math. Inequal. Appl.*, Volume 19(4) (2016), 1181–1192.
- 33) M. Adil Khan, S. Ivlic Bradanovic and J. Pečarić, Generalizations of Sherman's inequality by Hermite's interpolating polynomial and green function, *Konuralp Journal of Mathematics*, 4 (2) (2016), 255-270.
- 34) M. Adil Khan, Naveed Latif, and J. Pečarić, Generalizations of majorization inequality via Lidstone's Polynomial and their applications, *Communications in Mathematical Analysis*, 19(2), (2016), 101–122
- 35) M. Adil Khan, J. Khan, and J. Pečarić, Generalizations of Sherman's inequality by Montgomery identity, *Electronic Journal of Mathematical Analysis and Applications*, 5(1) (2017) 1-16.
- 36) M. Adil Khan, Y. Khurshid and T. Ali, Hermite-Hadamard Inequality For Fractional Integrals Via Eta- Convex Functions, *Acta Mathematica Universitatis Comenianae*, 86(1) (2017), 153-164.
- 37) Yu-Ming Chu, M. Adil Khan, T. Ali and S. S. Dragomir, Inequalities for α -fractional differentiable functions, *J. Inequal. Appl.* (2017) 2017: 93, 12 pages.
- 38) Khuram Ali Khan, M. Adil Khan and Uzma Sadaf, New refinement of Jensen-mercer's operator inequality and applications to means, *Punjab University Journal of Mathematics*, 49(2) (2017), 127- 151.
- 39) M. Adil Khan, T. Ali, S. S. Dragomir and M. Z. Sarikaya, Hermite-Hadamard type inequalities for conformable fractional integrals, *Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A. Matemáticas*, (2017). doi:10.1007/s13398-017-0408-5.
- 40) M. Adil Khan, Dilda Pecaric and Josip Pecaric, Bounds for Shannon and Zipf-mandelbrot entropies, *Mathematical Method in Applied Sciences*, DOI: 10.1002/mma.4531, 2017.
- 41) M. Adil Khan, J. Khan, and J. Pečarić, Generalization of Jensen's and Jensen-Steffensen's inequalities by generalized majorization theorem, *Journal of Mathematical Inequalities* 11(4) (2017), 1049–1074.
- 42) Yu-Ming Chu, M. Adil Khan, T. U. Khan and J. Khan, Some new inequalities of Hermite-Hadamard type for s-convex functions with applications, *Open Math.*, 15 (2017) 1414–1430.
- 43) M. Adil Khan, T. Ali and T. U. Khan, Hermite-Hadamard Type Inequalities with Applications, *Fasciculi Mathematici*, 59 (2017), 57-74.
- 44) M. Adil Khan, T. U. Khan, Parameterized Hermite-Hadamard type inequalities for fractional integrals, *Turkish J. Ineq.*, 1 (1) (2017), 26 –37.
- 45) Hamid Reza Moradi1, Mohsen Erfanian Omidvar, Muhammad Adil Khan and Kazimierz Nikodem, Around Jensen's inequality for strongly convex functions, *Aequationes Mathematicae*. 92(1) (2018), 25-37. DOI 10.1007/s00010-017-0496-5.
- 46) Yu-Ming Chu, M. Adil Khan, A. Kashuri, R. Liko, Some new Ostrowski type fractional integral inequalities for generalized $(r; s; m; ')$ -preinvex functions via caputo k-fractional derivatives, *Journal of Fractional Calculus and Applications*, 9(2) (2018), 163-177.
- 47) M. Adil Khan, S. Begum, Y. Khurshid, Y. Ming-Chu, Ostrowski Type Inequalities Involving Conformable Fractional Integrals, *J. Inequal. and Appl* 70 (2018), 1-14.
- 48) M. Adil Khan, Y. Khurshid, S. S. Dragomir and Rizwan Ullah, Inequalities of the Hermite-Hadamard type with applications, *Punjab University Journal of Mathematics*, 50(3), 2018, 1-12.
- 49) M. Adil Khan, Yu-Ming Chu, A. Kashuri, R. Liko, G. Ali, New Hermite-Hadamard inequalities for conformable fractional integrals, *Journal of Function Spaces*, 2018, Article ID 6928130, 9 pages, <https://doi.org/10.1155/2018/6928130>.
- 50) Ying-Qing Song, M. Adil Khan, S. Zahir Ullah, Y. Ming-Chu, Integral inequalities for strongly convex functions, *Journal of function Spaces*, Volume 2018, Article ID 6595921, 8 pages.
- 51) T. Ali, M. Adil Khan, Q. Din and A. Kilicman, On the refined Hermite- Hadamard inequality, *Mathematical Sciences and Applications E-Notes*, 6 (1) (2018), 85-92.
- 52) Shanhe Wu, Muhammad Adil Khan, Abdul Basir and Reza Saadati, Some majorization integral inequalities for functions defined on rectangles, *Journal of Inequalities and Applications*, 146 (2018), 1-13.
- 53) M. Adil Khan, A. Iqbal, M. Suleman, Y. Chu, Hermite-Hadamard Type Inequalities for Fractional Integrals Via Green Function, *J. Inequal. And Appl.*, 161, (2018), 1-15. <https://doi.org/10.1186/s13660-018-1751-6>
- 54) A. Iqbal, M. Adil Khan, Sana Ullah and A. Kashuri, Chu, Hermite-Hadamard type inequalities pertaining conformable fractional integrals and their applications, *AIP advances*, 8, 075101 (2018), 1-18.
- 55) A. Kashuri, R. Liko, M. Adil Khan, Conformable fractional integral inequalities of Hermite-Hadamard type for twice differentiable generalized beta $(r; g)$ -Preinvex Functions, *Allahabad Math. Soc.*, 33(1), (2018), 65-95.

- 56) M. Adil Khan, Y. Khurshid, Tingsong Du and Yu Ming Chu, Generalization of Hermite- Hadamard Type Inequalities via Conformable Fractional Integrals, Journal of Function Spaces, Volume 2018, Article ID 5357463, 12 pages (<https://doi.org/10.1155/2018/5357463>).
- 57) M. Adil Khan, Zaid Mohammad Al-sahwi and Yu Ming Chu, New estimations for Shannon and Zipf-Mandelbrot entropies, Entropy, 20 (608), (2018), 1-10.
- 58) M. Adil Khan, M. Aizaz Ali and Tingsong Du, New parametric Hadamard type inequalities with applications, Electronic Journal of Mathematical Analysis and Applications 6(2) 2018, 172-184.
- 59) M. Adil Khan, J. Khan, and J. Pečarić, On Jensen's Type Inequalities via Generalized Majorization Inequalities, FILOMAT, 32(16) (2018), 5719–5733.
- 60) M. Adil Khan, Đilda Pecaric, J. Pecaric, On Zipf-Mandelbrot entropy, Journal of Computational and Applied Mathematics, 346 (2019) 192–204.
- 61) M. Adil Khan, Tahir Ullah Khan, Generalized conformable fractional operators, Journal of Computational and Applied Mathematics, 346 (2019) 378–389.
- 62) Chunyan Luo, Tingsong Du, Muhammad Adil Khan, Artion Kashuri, Yanjun Shen, Some k-fractional integrals inequalities through generalized, $\lambda_{\psi m}$ -MT-preinvexity, submitted to journal of computational analysis and applications, 27(4) 2019, 690-705.
- 63) Yu-Ming Chu, A. Kahuri, R. Liko, M. Adil Khan, Hermite-Hadamard type fractional integral inequalities for $mt(r;g;m; \text{verphi})$ -preinvex functions, Journal of Computational Analysis and Applications, 26(8) , 2019,1487-1503.
- 64) Y. Khurshid, M. Adil Khan, and Yu Ming Chu, Hermite-Hadamard-Fejer Inequalities for Conformable Fractional Integrals via Preinvex Functions, Journal of Function Spaces, Volume 2019, Article ID 3146210, 9 pages.
- 65) Y. Khurshid, M. Adil Khan, and Yu Ming Chu, Generalized inequalities via GG-convexity and GA-convexity, Journal of Function Spaces, Volume 2019, Article ID 6926107, 8 pages.
- 66) M. Adil Khan, Shan-He Wu, Hidayat Ullah, Yu-Ming Chu, Some discrete majorization type inequalities on rectangles, Journal of Inequalities and Applications, 2019, 2019, Article 16, 18 pages.
- 67) M. Adil Khan, Syed Zaheer Ullah and Y. Chu, The concept of coordinate strongly convex functions and related inequalities, Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A, Matemáticas, 113 (2019), 2235–2251. <https://doi.org/10.1007/s13398-018-0615-8>.
- 68) S. Zaheer Ullah, M. Adil Khan, Y. Chu, Majorization Theorems for strongly convex functions. Journal of Inequalities and Applications, 2019, Article 58, 13 pages. doi.org/10.1186/s13660-019-2007-9.
- 69) M. Adil Khan, Y. Khurshid, Y. Chu, Hermite-Hadamard Type Inequalities via the Montgomery identity, Communications in Mathematics and Applications, 10(1) (2019), 85–97.
- 70) S. Zaheer Ullah, M. Adil Khan, Z. A. Khan, Yu-Ming Chu, Integral Majorization Type Inequalities for the Functions in the Sense of Strongly Convexity, Journal of Function Spaces, Volume 2019, Article ID 9487823, 11 pages. <https://doi.org/10.1155/2019/9487823>.
- 71) M. Adil Khan, M. Hanif, Z. A. Khan, K. Ahmad, Yu-Ming Chu, Association of Jensen inequality for s-convex function, Journal of Inequalities and Applications, 2019, Article ID 162, 14 pages. <https://doi.org/10.1186/s13660-019-2112-9>.
- 72) Shanhe Wu, Muhammad Adil Khan, Hidayat Ullah Haleemzai, Refinements of majorization inequality involving convex functions Via Taylor's theorem with mean value form of the remainder, Mathematics, 7(8), 663, 2019, 1-7; [doi:10.3390/math7080663](https://doi.org/10.3390/math7080663).
- 73) M. Adil Khan, Y. Khurshid, On parametrized Hermite-Hadamard type inequalities, FACTA UNIVERSITATIS (NTS), Ser. Math. Inform. 34(2) (2019), 213–229.
- 74) S. Zaheer Ullah, M. Adil Khan, Yu-Ming Chu, A note on generalized convex functions, Journal of Inequalities and Applications, (2019) Article ID 291, 10 pages, <https://doi.org/10.1186/s13660-019-2242-0>.
- 75) M. Adil Khan, Đilda Pečarić and Josip Pečarić, Bounds for Csiszar divergence and hybrid Zipf-mandelbrot entropy, Mathematical Methods in Applied Sciences, 42 (2019), 7411–7424.
- 76) M. Adil Khan, Noor Mohammad, Eze R. Nwaeze, Y. Chu, Quantum Hermite-Hadamard inequality by means of a green function, Advances in Difference Equations, 2020, Article ID 99, 20 pages.
- 77) M. Adil Khan, Đilda Peča Tingsong Du, Hao Wang, Muhammad Adil Khan, Yao Zhang, Certain integral inequalities considering generalized m-convexity on fractal sets and their applications, Fractals, 27(7) (2019) 1950117, 17 pages. DOI: 10.1142/S0218348X19501172.
- 78) S. Zaheer Ullah, M. Adil Khan, Yu-Ming Chu, Generalization of Favavard's and Berwald's inequalities for strongly convex functions, Communications in Mathematics and Applications, 10(4), (2019) 693–705.
- 79) Y. Khurshid, M. Adil Khan and Y. Chu, Hermite-Hadamard type inequalities involving conformable fractional integrals, J. Computational Analysis And Applications, 28(4), (2020), 585-604.
- 80) Ying-Qing Song, Yu Ming Chu, M. Adil Khan, Arshad Iqbal, Hermite-Hadamard Inequality and Green's Function with applications, J. Computational Analysis and Applications, 28(4), (2020), 685-697.
- 81) A. Iqbal, M. Adil Khan, Sana Ullah, Y. Chu, Some new Hermite-Hadamard type inequalities associated with conformable fractional integrals and their applications, Journal of Function Spaces, Volume 2020, Article ID 9845407, 18 pages.
- 82) Shahid Khan, M. Adil Khan, Yu-Ming Chu, Converses of the Jensen inequality derived from the Green functions with applications in information theory, Mathematical Methods in Applied Sciences, 43(5), (2020) 2577–2587. <https://doi.org/10.1002/mma.6066>.
- 83) M. Adil Khan, Đilda Pečarić and Josip Pečarić, New refinement of the Jensen inequality associated to certain functions with applications, Journal of Inequalities and Applications, (2020) Article ID 76, 11 pages.
- 84) M. Adil Khan, T. U. Khan, Yu-Ming Chu, Generalized Hermite-Hadamard type inequalities for quasi-convex functions with applications, Journal of Inequalities and Special Functions, 11(1) (2020), 24-42.

- 85) A. Iqbal, M. Adil Khan, M. Suleman, Y. Chu, The right Riemann-Liouville fractional Hermite-Hadamard type inequalities derived from Green's function, AIP Advances 10, Article ID 045032 (2020), doi:10.1063/1.5143908.
- 86) Y. Khurshid, M. Adil Khan, Yu-Ming Chu, Ostrowski type inequalities involving conformable integrals via preinvex functions, AIP Advances, 10, Article ID 055204 (2020), doi: 10.1063/5.0008964.
- 87) M. Adil Khan, J. Pečarić, Yu-Ming Chu, Refinements of Jessen's and McShane's inequalities with Applications, AIMS Mathematics, 5(5), (2020) 4931–4945.
- 88) M. Adil Khan, S. Khan, Y.-M. Chu, A new bound for the Jensen gap with applications in information theory, IEEE Access, 20, (2020), 98001-98008.
- 89) Y. Khurshid, M. Adil Khan, Yu-Ming Chu, Generalized inequalities via GG-convexity and GA-convexity, AIMS Mathematics, 5(5) (2020), 5012–5030.
- 90) Y. Khurshid, M. Adil Khan, Yu-Ming Chu, Conformable integral version of Hermite-Hadamard-Fejer inequalities via eta-convex functions, AIMS Mathematics, 5(5) (2020), 5106–5120.
- 91) M. Adil Khan, J. Pečarić, New refinements of the Jensen-Mercer inequality associated to positive n-tuples, Armen. J. Math., 12(4) (2020), 1-12.
- 92) S. Khan, M. Adil Khan, Yu-Ming Chu, New converses of Jensen inequality via Green functions with applications, RACSAM, 114(3), (2020).
- 93) S. Khan, M. Adil Khan, S. I. Butt, Y.-M. Chu, A new bound for the Jensen gap pertaining twice differentiable functions with applications, Advances in Difference Equations, 2020, Article ID 333, 11 pages.
- 94) A. Iqbal, M. Adil Khan, N. Mohammad, E. R. Nwaeze, Y.-M. Chu, Revisiting the Hermite-Hadamard fractional integral inequality via a Green function, AIMS Mathematics, 5(6) (2020), 6087–6107.
- 95) K. Ahmad, M. Adil Khan, S. Khan, A. Ali, Yu-Ming Chu, New estimates for generalized Shannon and Zipf-Mandelbrot entropies via convexity results, Results in Physics, 18, (2020) 103305.
- 96) S. Iqbal, S. Ahmad, M. Adil Khan, M. Samraiz, On Some New Grüss inequalities concerning to caputo k-fractional derivative, Punjab University Journal of Mathematics, 52(9) (2020), 17-29.
- 97) S. Zaheer Ullah, M. Adil Khan, Z. A. Khan, Yu-Ming Chu, Coordinate strongly s-convex functions and related results, Journal of Mathematical Inequalities, 14(3) (2020), 829–843.
- 98) E. R. Nwaeze, M. Adil Khan, Y.-M. Chu, Fractional inclusions of the Hermite-Hadamard type for m-polynomial convex interval-valued functions, Advances in Difference Equations, 2020, Article ID 507, 17 pages.
- 99) S. Iqbal, M. Adil Khan, T. Abdeljawad, M. Samraiz, G. Rahman, K. S Nisar, New general Grüss-type inequalities over σ -finite measure space with applications, Advances in Difference Equations, 2020, Article ID 468, 15 pages.
- 100) Tahir Ullah Khan, M. Adil Khan, Hermite-Hadamard inequality for new generalized conformable fractional operators, AIMS Mathematics, 6(1), (2020) 23–38.
- 101) S. Erden, N. Celik, M. Adil Khan, Refined inequalities of perturbed Ostrowski type for higher order absolutely continuous functions and applications, AIMS Mathematics, 6(1) (2020) 362–377.
- 102) S. Khan, M. Adil Khan, Yu-Ming Chu, New estimates for the Jensen gap using s-convexity with applications, Frontier in Physics, Article ID 313, 2020, 1-8.
- 103) M. Adil Khan, Z. Husain, Y.-M. Chu, New estimates for Csiszar divergence and Zipf-Mandelbrot entropy via Jensen-Mercer's inequality, Complexity, Volume 2020, Article ID 8928691, 8 page.
- 104) Hidayat Ullah, M. Adil Khan, J. Pečarić, New bounds for soft margin estimator via concavity of Gaussian weighting function, Advances in Difference Equations, 2020, Article ID 644, 10 pages.
- 105) S. Iqbal, M. Samraiz, Thabet Abdeljawad, Kottakkaran Sooppy Nisar, G. Rahman and M. Adil Khan, New generalized Pólya-Szegő and Cebyšev type inequalities with general kernel and measure, Advances in Difference Equations, 2020, Article ID 672, 20 pages.
- 106) T. U. Khan, M. Adil Khan, New generalized mean square stochastic fractional operators with applications, Chaos, Solitons & Fractals, 2020.
- 107) M. Adil Khan, Đilda Pečarić, J. Pečarić, A new refinement of the Jensen inequality with applications in information theory, Bull. Malays. Math. Sci. Soc. (2020), doi.org/10.1007/s40840-020-00944-5.
- 108) M. Adil Khan, S. Khan, Inam Ullah, Yu-Ming Chu, A novel approach to the Jensen gap through Taylor's theorem, Mathematical Methods in the Applied Sciences, Math Meth Appl Sci. 2020;1–10. <https://doi.org/10.1002/mma.6944>
- 109) M. Adil Khan, S. Khan, Đilda Pečarić, Josip Pečarić, New improvements of Jensen's type inequalities via 4-convex functions with applications, Revista de la Real Academia de Ciencias Exactas, Fisicas y Naturales. Serie A, Matematicas, 115 Article ID 43 (2021) 1-21.
- 110) K. Ahmad, M. Adil Khan, S. Khan, A. Ali, Y.-M. Chu, New estimation of Zipf-Mandelbrot and Shannon entropies via refinements of Jensen's inequality, AIP Advances, 11, Article ID 015147 (2021), 1-10.
- 111) M. Adil Khan, S. Khan, Inam Ullah, Yu-Ming Chu, A novel approach to the Jensen gap through Taylor's theorem, Mathematical Methods in the Applied Sciences, 44 (2021) 3324–3333.
- 112) Tahir Ullah Khan, Muhammad Adil Khan, Yu-Ming Chu A new generalized Hilfer-type fractional derivative with applications to space-time diffusion equation, Results in Physics 22 (2021) 103953, 1-11.
- 113) T. U. Khan, M. Adil Khan, New generalized mean square stochastic fractional operators with applications, Chaos Solitons & Fractals, 142 (2021) 110452, 12 pages.
- 114) H.Wang, J. Khan, M. Adil Khan, S. Khalid, R. Khan, The Hermite-Hadamard-Jensen-Mercer Type Inequalities for Riemann Liouville Fractional Integral, Journal of Mathematics, 2021, (2021) Article ID 5516987, 18 pages.
- 115) H. Wang, T. U. Khan, M. Adil Khan, S. Iqbal, New generalized conformable fractional impulsive delay differential equations with some illustrative examples, AIMS Mathematics, 6(8) (2021), 8149–8172.
- 116) Yongping Deng, Hidayat Ullah, Muhammad Adil Khan, Sajid Iqbal and Shanhe Wu, Refinements of Jensen's Inequality via Majorization Results with Applications in the Information Theory, Journal of Mathematics Volume 2021, Article ID 1951799, 12 pages.

- 117) Xuexiao You, M. Adil Khan, and Hamid Reza Moradi, Bounds for the Jensen Gap in terms of Power Means with Applications, *Journal of Function Spaces*, Volume 2021, Article ID 1388843, 11 pages.
- 118) M. Adil Khan, S. Anwar, S. Khalid, Z. M. M. M. Sayed, Inequalities of the Type Hermite–Hadamard–Jensen–Mercer for Strong Convexity, *Mathematical Problems in Engineering* Volume 2021, Article ID 5386488, 16 pages.
- 119) Hidayat Ullah, M. Adil Khan, Tareq Saeed, Determination of Bounds for the Jensen Gap and Its Applications, *Mathematics*, 2021, 9, 3132.
- 120) M. Adil Khan, Shahid Khan, S. Erden, M. Samraiz, A new approach for the derivation of bounds for the Jensen difference, *Mathematical Methods in the Applied Sciences*, 45 (2022) 36–48.
- 121) Tareq Saeed, M. Adil Khan, Hidayat Ullah, Refinements of Jensen’s inequality and applications, *AIMS Mathematics*, 7(4), (2022) 5328–5346.
- 122) Hidayat Ullah, M. Adil Khan, Tareq Saeed, Z. M. M. M. Sayed, Some improvements of Jensen’s Inequality via 4-Convexity and Applications, *Journal of Function Spaces*, Volume 2022, Article ID 2157375, 9 pages.
- 123) Shah Faisal, M. Adil Khan, Tahir Ullah Khan, Tareq Saeed, Ahmed Mohammed Alshehri, Eze R. Nwaeze, New “Conticrete” Hermite–Hadamard–Jensen–Mercer fractional inequalities, *Symmetry* 2022, 14, 294.
- 124) M. Samraiz, Z. Perveen, G. Rahman, M. Adil Khan, K. S. Nisar, Hermite-Hadamard Fractional inequalities for differentiable functions, *Fractal and Fractional*, 2022, 6, 60.
- 125) Shah Faisal, M. Adil Khan, Sajid Iqbal, Generalized Hermite-Hadamard-Mercer Type Inequalities via Majorization, *Filomat* 36(2) (2022), 469–483.
- 126) Shah Faisal, Muhammad Adil Khan, Tahir Ullah Khan, Tareq Saeed, Zaid Mohammad Mohammad Mahdi Sayed, Unifications of continuous and Discrete Fractional Inequalities of the Hermite–Hadamard–Jensen–Mercer Type via Majorization, *Journal of Function Spaces*, Volume 2022, Article ID 6964087, 24 pages.
- 127) Xuexiao You, Muhammad Adil Khan, Hidayat Ullah, Tareq Saeed, Improvements of Slater’s Inequality by Means of 4-Convexity and Its Applications, *Mathematics*, 2022, 10, 1274.
- 128) Muhammad Adil Khan, Hidayat Ullah, Tareq Saeed, Hamed H. Alsulami, Z. M. M. M. Sayed, Ahmed Mohammed Alshehri, Estimations of the Slater Gap via Convexity and Its Applications in Information Theory, *Mathematical Problems in Engineering*, Volume 2022, Article ID 1750331, 21 pages.
- 129) Zaid Mohammed Mohammed Mahdi Sayed, Muhammad Adil Khan, Shahid Khan, Josip Pečarić, A Refinement of the Integral Jensen Inequality Pertaining Certain Functions with applications, *Journal of Function Spaces*, Volume 2022, Article ID 8396644, 11 pages.
- 130) Khurshid Ahmad, Muhammad Adil Khan, Shahid Khanb, Yu-Ming Chu, Improved bounds for the Jensen gap with applications in information theory, *ScienceAsia*, 48 (2022): 813–822.
- 131) Muhammad Adil Khan¹, Hidayat Ullah, Tareq Saeed, Some estimations of the Jensen difference and applications, *Math Meth Appl Sci.* 2022;1–30.
- 132) Shanhe Wu, M. Adil Khan, T. Saeed³ and Z. M. M. M. Sayed, A refined Jensen inequality connected to an arbitrary positive finite sequence, *Mathematics* 2022, 10, 4817.
- 133) Yenny Rangel-Oliverosy, Eze R. Nwaeze, Muhammad Adil Khan, Some q quantum estimates of Hermite-Hadamard inequalities for ϕ -convex functions, *Applied Mathematics E-Notes*, 22(2022), 232-251.
- 134) M. Adil Khan, J. Pečarić, Refinement of the Jensen Inequality for convex functions of several variables with applications, *Thai Journal of Mathematics* Volume 20 Number 3 (2022), 1137-1147.
- 135) S. Iqbal, M. Samraiz, M. Adil Khan, G. Rahman and K. Nonlaopon, New Minkowski and related inequalities via general kernels and measures, *Journal of Inequalities and Applications*, 2023, Article ID 6, (2023), 1-23.
- 136) Muhammad Adil Khan, Adnan, Tareq Saeed and Eze R. Nwaeze, A New Advanced Class of Convex Functions with Related Results, *Axioms* 2023, 12, 195.
- 137) M. Adil Khan, A. Sohail, H. Ullah, T. Saeed, Estimations of the Jensen gap and their applications based on 6-convexity, *Mathematics*, 2023, 11, 1957.
- 138) T. Saeed, M. Adil Khan, S. Faisal, H. H. Alsulami, M. Sh. Alhodaly, New conticrete inequalities of the Hermite-Hadamard-Jensen-Mercer type in terms of generalized conformable fractional operators via majorization, *Demonstratio Mathematica* 2023; 56: 20220225.
- 139) Ç. Yildiz, L. Akgun, M. Adil Khan, and N. Rehman, Some Further Results Using Green’s Function for s -Convexity, *Journal of Mathematics*. Volume 2023, Article ID 3848846, 12 pages.
- 140) F. Alam, S. Iqbal, M. Adil Khan, E. R. Nwaeze, Generalized inequalities of the Mercer type for strongly convex functions, *Journal of Inequalities and Special Functions*, 14(1) (2023), Pages 21-36.
- 141) S. Erden, M. Adil Khan, F. Turk, M. Zeki Sarıkaya, R. Erden, N. Sumer, Generalized Ostrowski type results for twice differentiable functions on fractal sets, *NTMSCI* 11, No. 3, 1-10 (2023).
- 142) A. Basir, M. Adil Khan, Hidayat Ullah, Y. Almalki, S. Chasreechai, T. Sitthiwiratham, Derivation of bounds for majorization differences by a novel method and its applications in information theory, *Axioms*, 2023, 12, 885.
- 143) A. Basir, M. Adil Khan, Hidayat Ullah, Y. Almalki, C. Metpattarahiran, T. Sitthiwiratham, Improvements of integral majorization inequality with applications to divergences, *Axioms* 2024, 13, 21.
- 144) A. Sohail, M. Adil Khan, E. Abouel Nasr, and X. Ding, Further improvements of the Jensen inequality in the integral sense by virtue of 6-convexity along with applications, *AIMS Mathematics*, 9(5) (2024), 11278–11303.
- 145) A. Basir, M. Adil Khan, J. Pečarić, Majorization type inequalities via 4-convex functions, *Journal of Mathematical Inequalities*, 18(1) (2024), 51–67.
- 146) M. Adil Khan, Hidayat Ullah, T. Saeed, Z. M. M. M. Sayed, S. Alshaikey, Emad E. Mahmoud, Determination of novel estimations for the Slater difference and applications, *Complexity*, Volume 2024, Article ID 8481103, 13 pages.

- 147) M. Adil Khan, S. Faisal, Derivation of conticrete Hermite-Hadamard-Jensen-Mercer inequalities through k-Caputo fractional derivatives and majorization, Filomat 38(10) (2024), 3389–3413.
- 148) Z. M. M. M. Sayed, M. Adil Khan, S. Khan, J. Pečarić, Refinement of the classical Jensen inequality using finite sequences, Hacettepe Journal of Mathematics & Statistics, 53 (3) (2024), 608– 627.
- 149) S. Wu, M. Adil Khan, Shah Faisal, T. Saeed, E. R. Nwaeze, Derivation of Hermite-Hadamard-Jensen-Mercer conticrete inequalities for Atangana-Baleanu fractional integrals by means of majorization, Demonstratio Mathematica, 2024; 57: 20240024.
- 150) M. Adil Khan, S. Ivelić, Bradanović, H. A. Mahmoud, New improvements of the Jensen–Mercer inequality for strongly convex functions with applications, Axioms, 2024, 13, 553.

09 Web of Science H-Index: 32

(<https://www.webofscience.com/wos/author/record/R-2925-2018>)

10 Books Published

1. Muhammad Adil Khan, Slavica Ivelić Bradanović, Naveed Latif, Đilda Pečarić and Josip Pečarić, Majorization Inequality and Information Theory, Monographs in inequalities 16, Element, Zagreb, 2019 pp. 390.
2. Muhammad Adil Khan, Khuram Ali Khan, Đilda Pečarić and Josip Pečarić, Some New Improvements of Jensen's inequality, Monographs in inequalities 19, Element, Zagreb, 2020 pp. 148.

11 Chapters Published in Books

- i. Muhammad Adil Khan, Đilda Pečarić and Josip Pečarić, Zaid Mohammad Al-Sahwi, On Zipf-Mandelbrot entropy, Monographs in inequalities 15, Element, Zagreb, 2019 pp. 29-44.
- ii. Muhammad Adil Khan, Đilda Pečarić and Josip Pečarić, Inequalities for Shannon and Zipf-Mandelbrot entropies by using Jensen's type inequalities, Monographs in inequalities 15, Element, Zagreb, 2019 pp. 89-128.
- iii. Muhammad Adil Khan, Tahir Ullah Khan, Generalized conformable fractional operators and their applications, John Wiley & Sons Inc., USA, 2020, pp. 47-89.

12 Research Projects

- i) Research project on “Refinements of Some Inequalities for Convex Functions and Related Results ” under Startup Research Grant HEC, completed.
- ii) HEC NRPU Project No. 17199, completed.

13 Award

Received Gold Medal in M.Sc

14 References

- Prof. Dr. Josip Pečarić
Faculty of Textile Technology,
University of Zagreb, Zagreb - Croatia.
Email: pecaric@element.hr
- Dr. Khuram Ali Khan
Department of Mathematics,
University of Sargodha, Pakistan
E-mail : khuram.ali@uos.edu.pk