



## **RESUME**

### **PROFESSOR DR MUHAMMAD HANIF (MURAD)**

(Former **Dean**, Faculty of Science and **Founder**, Dept of Applied Mathematics, Noakhali Science and Technology University)

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**Post Doc & PhD in Applied Mathematics (Artificial Neural Networks)**

**M Phil in Applied Mathematics (Non linear Programming)**

**MSc (Thesis) in Mathematics (Number Arithmetic Function)**

**BSc (Honors) in Mathematics**

**EMPLOYMENT : 24 years, 9 months (December, 2024)**

April 2018-till date	<b>Professor (Grad II), Department of Applied Mathematics</b> Noakhali Science & Technology University Noakhali 3814
Sep.2013-April 2018	<b><u>Associate Professor, Department of Applied Mathematics</u></b> Noakhali Science & Technology University Noakhali 3814.
June 2008 – Sep 2013	<b><u>Assistant Professor, Department of Mathematics</u></b> Noakhali Science & Technology University Noakhali 3814.
June 2006 – June 2008	<b><u>Lecturer, Department. of Mathematics</u></b> Noakhali Science & Technology University Noakhali 3814.
March 2006-June 2006	<b><u>Lecturer, Department of Mathematics</u></b> Chittagong University of Engineering and Technology Chittagong 4201.
March 2004-March 2006	<b><u>Assistant Professor in Mathematics, Department of Computer Science and Engineering</u></b> International Islamic University Chittagong Chittagong 4201.
April 2000-March 2004	<b><u>Lecturer in Mathematics, Department of Computer Science and Engineering</u></b> International Islamic University Chittagong Chittagong 4201.
From 2008-2015	<b>Adjunct Faculty</b> IUB, EWU, AUST, ULAB, CUB, FU.

**EDUCATION**

2014	<b><u>Post Doc in Applied Mathematics (Specialization: Unconstrained Nonlinear Optimization Methods for Feedforward Neural Networks)</u></b> University Grants Commission Bangladesh. Supervisory Consultant: Professor Md Matiur Rhaman Department of Mathematics, University of Chittagong
2007-08	<b><u>PhD in Applied Mathematics. (Specialization: Solution of Feedforward Neural Networking problem using different optimization Methods)</u></b> Research Centre for Mathematical and Physical Sciences University of Chittagong, Chittagong 4201. Joint Supervisors: Professor Jamal Nazrul Islam and Dr Salahuddin Al-Azad
2001-02	<b><u>M. Phil in Applied Mathematics (Specialization: Optimality of Unconstrained Nonlinear Programming Problem)</u></b> Research Centre for Mathematical and Physical Sciences University of Chittagong, Chittagong 4201. Joint Supervisors: Professor Jamal Nazrul Islam and Professor A.M.Chowdhury
1993-94	<b><u>M. Sc in Mathematics (Specialization: An Investigation on Euler's <math>\Phi</math> function in Number Theory)</u></b> Department of Mathematics, University of Chittagong, Chittagong 4201. Obtained 68% marks and stood first class first. Supervisor: Professor Fazlee Hossain.
1990-91	<b><u>B.Sc (Hons) in Mathematics</u></b> Department of Mathematics, University of Chittagong, Chittagong 4201. Obtained 69.6% marks and stood first class first.
1989-90	<b><u>H.S.C</u></b> Noakhali Govt. College Comilla board, Obtained first division (62.1%marks).
1987-88	<b><u>S.S.C</u></b> Brother Andre's High School (Christian Missionary School) Comilla board Obtained first division (63.3% marks).

**THESIS : 04**

- 1 Muhammad Hanif, “Unconstrained Nonlinear Optimization Methods for Feedforward Neural Networks” **Post Doc** Thesis(2014), University Grants Commission Bangladesh.
- 2 Muhammad Hanif, “Solution of Feedforward Neural Networking problem using different optimization Methods”, **PhD** Thesis(2012), Research Center for Mathematical and Physical Sciences, University of Chittagong, Chittagong- 4203, Bangladesh.
- 3 Muhammad Hanif, “Optimality of Unconstrained Nonlinear Programming Problem”, **M.Phil** Thesis(2009), Research Center for Mathematical and Physical Sciences, University of Chittagong, Chittagong- 4203, Bangladesh.
- 4 Muhammad Hanif, “An Investigation on Euler’s  $\Phi$ -function”, **M.Sc** Thesis, (1994), Department of Mathematics, University of Chittagong, Chittagong -4203, Bangladesh.

**PUBLICATIONS: 30**

1. **Muhammad Hanif** , “ Application of Euler’s  $\Phi$  function in Two Special type of Equations”, *HPC Asia Conference Proceeding 2002*, Volume 2, pp. 535-538, Tata McGraw-Hill Publishing Company Limited , New Delhi India. **ISBN 0-07-050241-2**.
2. **Muhammad Hanif**, Salauddin Al-Azad, M.Mostofa Rezbi, A.N.M.Rezaul Karim “ Introduction to Mathematics in Medical Image Processing”, *Bangladesh Journal of Radiology and Imaging(BJRI) 2005, Vol.-13, pp.57-63*, Dhaka-1000, Bangladesh. **ISSN 1726-961**.
3. M. Robiul Alam A.N.M.Rezaul Karim, M. Safiullah, **Muhammad Hanif**, Md Nizam Uddin “A Cell Phone Approach of Room Security”, *J. of the Bangladesh Electronic Society(2007) Vol.7,pp.75-80,* Dhaka- 1000, Bangladesh. **ISSN 1816-1510**.
4. **Muhammad Hanif** , “ Two Theorems Related to Euler’s  $\Phi$  function”, *University of Science and Technology Annual (USTA 2007), Vol-13, No.1, pp.106-112*, University of Science and Technology Chittagong, Foyage Lake, Chittagong -4201, Bangladesh. **ISSN 1728-0435**.
- 5.**Muhammad Hanif** and Abdul Kadar Muhammad Masum, “Advantage of Bangla Keyboard Layout Using the Technique of Data Mining ”, *J. of the Bangladesh Electronic Society(2008), Vol-8 ,pp. 99-107*, Dhaka- 1000, Bangladesh. **ISSN 1816-1510**.
6. **Muhammad Hanif**, Mohammed Nizam Uddin, Abdul Kadar Muhammad Masum and Md Abdul Hakim “An Infrastructure for Secured Mobile Payment System through Short Message Service (SMS) for the Developing Countries like Bangladesh”, *J. of the Bangladesh Electronic Society(2008),Vol-8 ,pp. 93-98*, Dhaka- 1000, Bangladesh. **ISSN 1816-1510**.
7. **Muhammad Hanif** and Salauddin Al-azad, “Optimization Theory Approach for Image Matching in Medical Ultrasound Imaging”, *University of Science and Technology Annual (USTA 2008) Vol-14, No.1, pp.36-50*, University of Science and Technology Chittagong, Foyage Lake, Chittagong -4201, Bangladesh. **ISSN 1728-0435**.
8. M. U. Khadaker, G. Klim, **Muhammad Hanif**, M.Meeaze “Investigation of Proton Energy Degradation of the MC-50 Cyclotron at the Kirams”, *Bangladesh J.of Physics (2008), Vol 29,pp.99-105*,Dhaka 1000, Bangladesh. **ISSN 1816-1081**.
9. **Muhammad Hanif** and Salauddin Al-azad, “Mathematical Techniques in DT-MRI”, *University of Science and Technology Annual (USTA 2009), Vol-15, No.1, pp.55-66*, University of Science and Technology Chittagong, Foyage Lake, Chittagong -4201, Bangladesh. **ISSN 1728-0435**.
10. M.Mostofa Rezvi, **Muhammad Hanif**, G.M.Walliullah, “First Order Optimality in Multiobjective Optimization Problems: Differential Case”, *GANIT, Journal of Bangladesh Mathematical Society(2009), Vol 29,pp.99-*

105, University of Dhaka, Dhaka- 1000, Bangladesh. **ISSN 1606-3694.**

11. **Muhammad Hanif**, Jamal Nazrul Islam, “First Order Optimization Method for Single and Multi-Layer Feedforward Artificial Neural Networks”, *J. of the Bangladesh Electronic Society*(2008), *Vol-10* ,pp. 33-47, Dhaka-1000, Bangladesh. **ISSN 1816-1510.**

12. **Muhammad Hanif** and Syeda Latifa Parveen, “Feedforward Artificial Neural Networks for Solving Higher Order Ordinary and Partial Differential equations”, *University of Science and Technology Annual (USTA 2011)*, *Vol-17, No.1*, pp.40-50, University of Science and Technology Chittagong, Foyage Lake, Chittagong -4201, Bangladesh. **ISSN 1728-0435.**

13. **Muhammad Hanif** and Syeda Latifa Parveen, “Newton’s Method for Feedforward Artificial Neural Networks”, *University of Science and Technology Annual (USTA 2014)*, *Vol-21, No.1*, pp.59-67, University of Science and Technology Chittagong, Foyage Lake, Chittagong -4201, Bangladesh. **ISSN 1728-0435.**

14. **Muhammad Hanif** and Khabir Ahmed “Mathematical Techniques in SPECT”, *Bangladesh Journal of Radiology and Imaging (BJRI) 2014*, *Vol.-2*, pp.8-13, Dhaka-1000, Bangladesh. **ISSN 1726-961.**

15. **Muhammad Hanif**, Mohammed Nizam Uddin, “The Method of Steepest descent for Feedforward Artificial Neural Networks”, *Jahangirnagar University Journal of Statistical Studies (2015)*, *Vol-32, No.1*, pp.41-52 .Department of Statistics, Jahangirnagar University, Savar, Dhaka, Bangladesh. **ISSN 1022-4734.**

16. **Muhammad Hanif**, “Mathematics for Human Nervous System”, *International Journal of Mathematics Trends and Technology-* (2015), *Vol 27, No 1*, pp.12-18, Seventh Sense Research Group, Royal Shelter Building, Trichy-620018, India. **ISSN 2231-5373.**

17. **Muhammad Hanif**, “Levenberg-Marquardt Method for Feedforward Artificial Neural Networks”, *Pioneer Journal of Mathematical Physics and its Applications (2015)*, *Vol 8 No 1-2*, pp.53-77, Pioneer Research House, Varanasi 221002, India. **ISSN 2277-8799.**

18. **Muhammad Hanif**, “Gauss-Newton Method for Feedforward Artificial Neural Networks”, *International Journal of Mathematics and Computation (2016)*, *Vol 27 No 3*, pp.132-147, Ceser Publications, Roorkee-247667, India. **ISSN 0974-5718.**

19. Anadi Kumar Sardara, **Muhammad Hanif**, Md. Asaduzzamana, Md. Haider Ali Biswas1, “Mathematical Analysis of the Two Species Lotka-Volterra Predator Prey Inter-specific Game Theoretic Competition Model”, *Advanced Modeling and Optimization, Volume 18, Number 2, 2016*, pp 231-242, Centre for Advanced Modelling and Optimization, 8-10, Averescu Avenue, Bucharest 1, Rumania. **ISSN 1841-4311.**

20. Md. Haider Ali Biswas, Md. Mohidul Haque, **Muhammad Hanif**, M. Alhaz Uddin “Optimal Control Applied to Dynamic Model of Climate Change: A Bangladesh Scenario” *Proceedings of the Sixth International Conference on Industrial Engineering and Operations Management* Kuala, Lumpur, Malaysia, March 8 –10, 2016, pp-3005. **ISSN 2169-8767.**

21. Mutun Kumar Mondol, **Muhammad Hanif** and Md. Haider Ali Biswas “A mathematical analysis for controlling the spread of Nipah virus infection”, *International Journal of Modelling and Simulation*, Taylor & Francis, 2017, pp-1-13. **ISSN: 0228-6203.**

22. **Muhammad Hanif** and Farzana Sultana Rafi “A new Method for Optimal Solutions of Transportation Problems ”*Journal of Mathematics Research*, Vol. 10, No. 5; October 2018, pp-60-75, Published by Canadian Center of Science and Education, 1120, Frinch Avenue West, Suite 701-30, Toronto, ON. M3J3H7, Canada, **ISSN 1916-9795.**

23. **Muhammad Hanif** , “ A New Method to Investigate the Optimal Solutions of Game Theory Problems, *Computational and Applied Mathematical Sciences* , *Volume 4, Issue 1*, pp.1-06,2019, International Digital Organization for Scientific Information , P.O. BOX 40468, Deltra, Dubai, United Arab Emirates – UAE. **ISSN: 2222-1328**

24. **Muhammad Hanif** Mohammed Nizam Uddin and AN.M Rezaul Karim “Mathematical Techniques in PET ” *International J. of Science and Engineering*, *Volume 7, Issue 5*, pp.1-7, April 2018, Published by Shobash Chand Dasna,Ghaziabad, INDIA. **ISSN 2319-1805.**

25. Mohammed Nizam Uddin, Mohammed Monir Uddin and **Muhammad Hanif** “Recent Updates in Two Competitive Algorithms for Model Reduction of Large-Scale Dynamical Systems ” *International J. of Mathematics Trends and*

26. **Muhammad Hanif** and M.A. Habib, “Exact solitary wave solutions for a system of some nonlinear space–time fractional differential equations”, *Pramana – J. Phys. (2020) Indian Academy of Sciences*, C V Raman Avenue, Sadashivanagar, P.B. No. 8005, Bengaluru 560 080, India ISSN: **03044289, 09737111**

27. M. A. Habib, **Muhammad Hanif**, A. N. M. Rezaul Karimc, H. M. Shahadat Ali, “ General Closed Form Wave Solutions of Nonlinear Space-Time Fractional Differential Equation in Nonlinear Science, *International Journal of Sciences : Basic and Applied Research ( IJSBAR) , Volume 50, Issue 1, February 2020, pp.175-194,* International Scientific Research and Researchers Association (ISRRA), Postal Code: 11941, Amman, Jordan ISSN **2307-4531**.

28. Nahida Islam, **Muhammad Hanif**, Ashraf Uddin, “A Model of Linear Programming for Profit Optimization and Share Profit between Investment Partners and Seller: A Case Study of Bangladesh Cookies Company” *International Journal of Computer Applications (0975 – 8887) Volume 185 – No. 2, April 2023* ISSN 09758887

29. **Muhammad Hanif**, “Applications of Matrix Theory in Computer Graphics” *International Journal of Mathematics and Computer Science, Vol. 12, Issue 6, June 2024, ISSN: 2320-7167, Impact Factor : 8.316.*

30. **Muhammad Hanif** , “A new Compartmental Mathematical Model for COVID 19 Transmission: Bangladesh Study”, *IOSR Journal of Mathematics, Vol 20, Issue: 3, pp. 38-49, September 2024.* International Organization of Scientific Research, E ISSN : 2278-5728.

#### BOOK: 1

M A Habib and Muhammad Hanif (2020), “ Mathematical solution of game theory problems” LAP LAMBERT, Academic Publishing International Book Market Servicing Ltd 17, Meldrum Street, Beau Bassin 71504, MAURITIUS, ISBN: **978-620- 2- 68523-8**

#### EDITORIAL BOARD MEMBER

1. NSTU Journal, Noakhali Science and Technology University, Noakhali 3814, Bangladesh.
2. Journal of Computational and Applied Mathematical Sciences, International Digital Organization for Scientific Information P.O. BOX 40468, Deltra, Dubai, United Arab Emirates – UAE . ISSN: **2222-1328**
3. Journal of Nonlinear Studies, International Digital Organization for Scientific Information P.O. BOX 40468, Deltra, Dubai, United Arab Emirates – UAE . ISSN: **2222-1328**
4. International Journal of Mathematics Trends and Technology, Seventh Sense Research Group, Royal Shelter Building, Trichy-620018, India. ISSN **2231-5373**

#### RESEARCH INTEREST

- Algebra, Number Theory and Cryptography
- Nonlinear Programming and Game Theory
- Artificial Neural Networks
- Bio Medical Mathematics

## RESEARCH PROJECT

1. Project Director (2020-2021), Research Cell, Noakhali Science and Technology University, Field: **Applied Mathematics**, Title: A New Proposed Model for a General Traffic System Using Mixed Integer Linear Programming Problem (MILPP)
2. Project Director (2021-2022), Research Cell, Noakhali Science and Technology University, Field: **Applied Mathematics**, Title: A New Proposed Compartmental Mathematical Model and its Implementation in Bangladesh for the Spread of the COVID-19
3. Project Director (2022-2023), Research Cell), Noakhali Science and Technology University, Field: **Computer Science**, Title: Applications of Matrix Theory in Computer Graphics
4. Project Director (2022-2023), University Grants Commission Bangladesh, Field: **Applied Mathematics** Title: To establish a new Compartmental Mathematical Model for COVID 19 Transmission: Bangladesh Study
5. Principal Investigator (2022-2023), Ministry of Science and Technology, Bangladesh, Field: **Computer Science**, Title: Analyzing the Security System through Matrices in Cryptography.

## PROJECTS/ THESIS SUPERVISIONS

From 2017-till date, Guided by **60** Honours Project Students and **25** M.Sc Thesis Students at the department of Applied Mathematics, Noakhali Science & Technology University, Noakhali 3814

## SCHOLARSHIPS/FELLOWSHIPS

- Obtained scholarship from Chittagong University for achieving first class first position in BSc and M.Sc.
- Obtained fellowship from Chittagong University for PhD programme.
- Obtained fellowship from University Grants Commission Bangladesh for Post Doc programme.

## EXTRACURRICULAR ACTIVITIES

- Member Regent Board , Academic Council ,Planning and Development , Inquiry Board
- Member Secretary Discipline Board  
Noakhali Science & Technology University Noakhali 3814 (June 2006-August 2008).

## EXTERNAL EXAMINER MEMBER

- Department of Applied Mathematics, Dhaka University.
- Department of Applied Mathematics, Rajshahi University.
- Department of Mathematics, Chittagong University.
- Mathematics Discipline, Khulna University.

## ADMINISTRATIVE / ACADEMIC DUTIES

1. **Proctor**, Noakhali Science & Technology University Noakhali 3814 (June 2006-August 2008).
2. **Chairman**, Department of Mathematics Noakhali Science & Technology University Noakhali 3814 (June 2006-August 2008)
3. **Chairman**, Department of Applied Mathematics Noakhali Science & Technology University Noakhali 3814 (Sep 2012- Jan 2014, July 2015- Feb 2017, April , 2018- till date)
4. **Dean**, Faculty of Science, Noakhali Science & Technology University Noakhali 3814 (January , 2021- January 2023)
5. **Provost**, Basha Shahed Abdus Salam Hall, Noakhali Science & Technology University Noakhali 3814 (September 2024- till date).
6. **Treasurer**, Noakhali Science & Technology University Noakhali 3814 (December 2024 - till date)

## PERSONAL DETAILS

Father: Late Md Abdul Mannan  
Mother: Shamsunnahar Begum  
143, South Laksmipur, P.O. Sonapur, Sadar, Noakhali 3802  
Date of Birth: 10-04-1973, Sex: Male, Married  
National ID: 8212766706

## REFEREES

1. Professor Dr Aman Ullah, Department of Mathematics, Chittagong University..
2. Professor Dr Ali Akbar, Department of Applied Mathematics, University of Rajshahi
3. Professor Dr Shawkat Ali, Department of Applied Mathematics, University of Dhaka
4. Professor Dr Md Haider Ali Biswas, Mathematics Discipline, Khulna University

Professor Dr Muhammad Hanif (Murad)