Dr. Muntasir Alam
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Personal Information

Full Name	:	Muntasir Alam
Present Address	:	Flat #4-B2, 4th Floor, Building #4, Bangladesh Bank Cooperative Residential Complex, 17/A Shantibagh, Dhaka-1217, Bangladesh.
Email	:	muntasir.appmath@du.ac.bd, muntasir@kyudai.jp
Sex	:	Male
Date of Birth	:	1st January, 1990
Religion	:	Muslim
Home Town	:	Bogura Sadar, Bogura-5800, Bangladesh.
Nationality	:	Bangladeshi

Educational Background

i. Degree : Doctor of Philosophy (Ph.D.)
Department : Energy and Environmental Engineering (EEE)
School : Interdisciplinary Graduate School of Engineering Sciences
Degree Awarded : 24th March 2021
University : Kyushu University, Fukuoka, Japan.

ii. Degree : Master of Science (M.S.)
Department : Department of Applied Mathematics
University : University of Dhaka
G.P.A. : 4.00 (out of 4.00)
Position : First Class First
Result published in : 21st July 2016

iii.	Degree	: Bachelor of Science (B.S.)
	Department	: Department of Mathematics
	University	: University of Dhaka
	C.G.P.A.	: 3.85 (out of 4.00)
	Position	: First Class Second
	Result published in	: 16th November 2014

iv.	Degree	: Higher Secondary Certificate (H.S.C)
	Board	: Dhaka
	College	: Notre Dame College, Dhaka
	Group	: Science
	G.P.A.	: 5.00 (out of 5.00)
	Result published in	: 10th September 2008

v.	Degree	: Secondary School Certificate (S.S.C)
	Board	: Rajshahi
	School	: Bogura Zilla School, Bogura
	Group	: Science
	G.P.A.	: 5.00 (out of 5.00)
	Result published in	: 22nd June 2006

Profession

Current Position	: Assistant Professor
Affiliation	: Department of Applied Mathematics
Institute	: University of Dhaka
Working Experience	: 2nd February 2017- Onwards

Research Interest

- Evolutionary game theory

- ❖ Mathematical modeling in epidemiology
- ❖ Game-theoretic analysis of public health-related issues
- ❖ COVID-19 epidemic modeling with vaccination scheme
- ❖ Traffic flow modeling and its mathematical analysis
- ❖ Numerical analysis and simulation techniques in BVPs
- ❖ Application of Finite Element Method in engineering sciences

Research Articles

- **Journal Articles:** Total **08** (Peer Reviewed)
  - **i.** Umma Kulsum, **Muntasir Alam**, and Md. Kamrujjaman; "Modeling and investigating the dilemma of early and delayed vaccination driven by the dynamics of imitation and aspiration", *Chaos, Solitons and Fractals*, Vol. 178, 114364, 2024.
  - **ii.** **Muntasir Alam** and Jun Tanimoto; "A Game–Theoretic Modeling Approach to Comprehend the Advantage of Dynamic Health Interventions in Limiting the Transmission of Multi–Strain Epidemics", *Journal of Applied Mathematics and Physics*, Vol. 1, No. 12, 1012248, 2022.
  - **iii.** **Muntasir Alam**, Yuki Ida, and Jun Tanimoto; "Abrupt epidemic outbreak could be well tackled by multiple pre-emptive provisions – A game approach considering structured and unstructured populations", *Chaos, Solitons & Fractals*, Vol. 143, 110584, 2021.
  - **iv.** **Muntasir Alam**, K M Ariful Kabir, and Jun Tanimoto; "Based on mathematical epidemiology and evolutionary game theory, which is more effective: quarantine or isolation policy?", *Journal of Statistical Mechanics: Theory and Experiment*, 033502, 2020.
  - **v.** **Muntasir Alam**, Masaki Tanaka, and Jun Tanimoto; "A game theoretic approach to discuss the positive secondary effect of vaccination scheme in an infinite and well-mixed population", *Chaos, Solitons & Fractals*, Vol. 125, pp. 201-213, 2019.
  - **vi.** **Muntasir Alam**, Kazuki Kuga, and Jun Tanimoto; " Three-strategy and four-strategy model of vaccination game introducing an intermediate protecting measure", *Applied Mathematics and Computation*, Vol. 346, pp. 408-422, 2019.
  - **vii.** **Muntasir Alam** and Md. Shafiqul Islam; "Numerical Solutions of Time Dependent Partial Differential Equations Using Weighted Residual Method With Piecewise Polynomials", *Dhaka University Journal of Science*, Vol. 67, pp. 5-12, 2019.

viii. **Muntasir Alam**, Keisuke Nagashima, and Jun Tanimoto; "Various error settings bring different noise-driven effects on network reciprocity in spatial prisoner's dilemma", *Chaos, Solitons & Fractals*, Vol. 114, pp. 338-346, 2018.

- **Conference Proceedings:** Total **03**
  - i. **Muntasir Alam** and Jun Tanimoto; "Dynamical Analysis of a Disease Transmission Model Coupled with Two Pre-emptive Provisions and Quarantine – Isolation Policy – An Approach Based on Evolutionary Game Theory", *7th International Conference on Infectious Disease Dynamics by Elsevier, Charleston, South Carolina, USA*, December 2019.
  - ii. **Muntasir Alam**, Jun Tanimoto; "Introduction of intermediate defense measure in an evolutionary vaccination game", *Traffic Flow Conference at Nagoya University, Japan*, December 2018.
  - iii. **Muntasir Alam**, Jun Tanimoto; "Secondary effect of vaccination on evolutionary vaccination game in an infinite and well-mixed population", *20th Cross Straits Symposium on Energy and Environmental Science and Technology at Pusan National University, South Korea,* November 2018.

Professional Experience

- ✓ **Teaching:** Assistant Professor, Department of Applied Mathematics, University of Dhaka, Dhaka-1000, Bangladesh.
- ✓ **Courses Taught:** Fundamental of Mathematics, Differential and Integral Calculus, Vector Calculus and Complex Analysis, Coordinate and Vector Geometry, Advanced Linear Algebra, Mathematical Methods, Topology and Functional Analysis, Basic Statistics and Probability, Fortran Programming, Mathematica Software Learning, MATLAB Programming.

Technical Skills

- ✓ **Programming Languages:** C, C++, Python, Origin, COMSOL Multiphysics
- ✓ **Data Analysis and Graphing:** MATLAB, Wolfram Mathematica, SPSS
- ✓ **Other Application Software:** Microsoft Office Tools**,** Latex

Academic Awards

i. Dean's Award from the Faculty of Science, University of Dhaka, Dhaka-1000.
ii. Hult Prize Campus Winner (Kyushu University, Japan) 2019 as the Team Leader.
iii. Complementary Scholarship for extraordinary academic performance during one year of master course studies.
iv. Complementary Scholarship for extraordinary academic performance in all four years of undergraduate studies.
v. National Science and Technology fellowship under Ministry of Science and Technology- Government of People's Republic of Bangladesh for M.S. Thesis in the year of 2015-16.
vi. Board scholarship for extraordinary academic result in S.S.C board examination.

Co-curricular Activities

- Singing : Participated in various programs for singing songs.
- Sports : Good at playing Cricket, Football, Bowling, Carrom, Badminton, and Chess.
- Passion/Hobby : Swimming, Reading Novels, Car Racing, etc.
- Memberships : KUFSA, KIISA, Bangladesh Mathematical Society, Dhaka University Mathematics Alumni Association.

References

1. **Professor Dr. Jun Tanimoto**
   Vice Dean, IGSES, Head of Urban and Architectural Environment Laboratory,
   Department of Energy and Environmental Engineering,
   Kyushu University, 6-1 Kasuga-koen, Kasuga-shi, Fukuoka, 816-8580, Japan.
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2. **Professor Dr. Md. Shafiqul Islam**
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