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Brief Resume
Debashree Guha Adhya

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Academic Degrees
Ph.D. (Science.) in Mathematics, IIT Kharagpur, Kharagpur, India, 2011.
M.Sc. in Applied Mathematics, Jadavpur University, India, 2005 (82.54%, **1st class, 2nd rank**).
B.Sc. in Mathematics, Jadavpur University, India, 2003 (82.00%, **1st class, 3rd rank**).
Higher Secondary (10+2) in West Bengal Council of Higher Secondary Education, 2000 (84.3%, 1st division, **100th rank in West Bengal**).
Secondary (10th Class) in West Bengal Board of Secondary Education, 1998 (92.25%, 1st division, **20th rank in West Bengal)**.

Research Interests
Predictive data-driven mathematical modelling, Data aggregation and its applications, Medical informatics, Fuzzy sets, Uncertainty handling

Professional Experience
June, 2019-Present: Assistant Professor, School of Medical Science & Technology, IIT Kharagpur
August 2018-June 2019: Visiting Assistant Professor, School of Medical Science & Technology, IIT Kharagpur
February, 2012-August 2018: Assistant Professor, Department of Mathematics, IIT Patna (Presently on Lien)
February, 2011-December 2012: Research Associate, Department of Mathematics, Birla Institute of Technology Patna.
May-July, 2016: Visiting Researcher (with SAIA-NSP scholarship), Department of Mathematics and Descriptive Geometry, Slovak University of Technology, Bratislava

Fellowships/Awards
Received Early career research award by SERB-DST in 2017
Received SAIA-NSP scholarship given by the Government of Slovak Republic for research visit at Slovak
University of Technology, Slovakia (May-July, 2016)
Received Best paper award in International Conference on Systems in Medicine and Biology (ICSMB 2010), IIT Kharagpur, India
Senior Research Fellowship in Mathematical Sciences from CSIR, India (August 2007–July 2010).
Junior Research Fellowship in Mathematical Sciences from MHRD, India (August 2005–July2007).
Awarded National Scholarship for ranking 100th in Higher Secondary Examination, 2000 in West Bengal.
Awarded National Scholarship for ranking 20th in Secondary Examination, 1998 in West Bengal.

Synergistic Activities:
- Invited talk on "International Webinar Series on "Artificial Intelligence and Machine Learning" ", to be held on 25th September, 2020.
- Approved one GIAN course entitled, Computational intelligence in modelling decision support system (approved also for MOOC).
- Invited Talk on "Development of fuzzy reasoning schemes of decision making problems under imprecise environment" Jadavpur University, India, 19th September, 2013.
- Invited talk on "Linguistic information processing and its applications in decision making", National Workshop on Big Data Analytics, Patna University, India, 26th-28th April, 2016.
- Training Assignments: Delivered lectures in short term training program at IIT Patna for the Building Construction Department, (BCD), Govt. of Bihar (GOB), May 2013.

Professional Activities
- Member of Program Committee of International Conference on Mathematics and Computing (ICMC 2018) January, 2018 IIT BHU, India; International conference on Soft Computing and Applications (ISSCA-2016), San Francisco, USA, October, 2016.
- Reviewer of IEEE Transactions on fuzzy Systems, Information Sciences, Fuzzy Sets and Systems, Applied Soft Computing, Applied Mathematical Modelling, Kybernatica, International Journal of Machine Learning and Cybernetics, Advances in Fuzzy Systems, Neural Network and Applications, Opsearch, International Journal of operational Research etc.
- Involved in designing a dashboard for prediction of radiation doses to OAR of prostate cancer using the knowledge based planning model in collaboration with TMC, Kolkata.
- Involved in analyzing the data for a statistical analysis planning for HYPO fractionated Radiation Therapy comparing a standard radiotherapy schedule (over three weeks) with a novel one week schedule in Adjuvant breast cancer jointly with TMC Kolkata.

Selected Publications
1. SMAA-QUALIFLEX methodology to handle multi criteria decision making problems based on q-rung fuzzy set with hierarchical structure of criteria using bipolar Choquet integral, Debasmita Banerjee, Bapi Dutta, **Debashree Guha**, & Luis Martinez, *International Journal of Intelligent Systems* **(**Wiley, Impact factor 7.229**)**, 35, 401-431, 2020.

2. Constructing interval-valued generalized partitioned Bonferroni mean operator with several extensions for MAGDM , Debasmita Banerjee, Bapi Dutta, **Debashree Guha**, & Mark Goh, Neural Computing and Applications (Springer, Impact factor 4.664), 1-28, 2020,

3. Generalization and extension of partitioned Bonferroni mean operator to model optional prerequisites, Swati Rani Hait, **Debashree Guha**, Debjani Chakraborty, & Radko Mesiar, International Journal of Intelligent Systems(Wiley, Impact factor 7.229), 35, 891-899, 2020.

4. Generalized hesitant fuzzy information fusion using extended partitioned Bonferroni mean operator with application in decision-making, Swati Rani Hait, **Debashree Guha**, & Debjani Chakraborty, Computational And Applied Mathematics (Springer, Impact Factor 1.26), Accepted (2020).

5. Information measures in the intuitionistic fuzzy framework and their relationships, Satyajit Das, **Debashree Guha** and Radko Mesiar, IEEE Transactions on Fuzzy Systems, IEEE, 26, 1626-1637, 2018 (Impact factor 8.415).

6. Extended Bonferroni Mean under Intuitionistic Fuzzy Environment Based on Strict t-conorm, Satyajit Das, **Debashree Guha** and Radko Mesiar. IEEE Transactions on Systems, Man and Cybernetics: Systems, IEEE, 2083-2099, 2017 (Impact factor: 5.131).

7. A Model Based on Linguistic 2-tuples for Dealing with Heterogeneous Relationship among Attributes in Multi-expert Decision Making, Bapi Dutta, **Debashree Guha** and Radko Mesiar, IEEE Transaction on Fuzzy System, 23, 1817-1831, 2015 (Impact factor 8.415).

8. Aggregation of Heterogeneously Related Information with Extended Geometric Bonferroni Mean and Its Application in Group Decision Making, Bapi Dutta, Felix T.S. Chan, **Debashree Guha**, Ben Niu3, J.H. Ruan, International Journal of Intelligent Systems, Wiley, 33, 487–513, 2018 (Impact factor 3.363).

9. Attribute weight computation in a decision making problem by particle swarm optimization, Satyajit Das and **Debashree Guha**, Neural Computing and Applications, DOI:https://doi.org/10.100 7/s00521-017-3209-z, Springer, 2017 (Impact factor 4.213).

10. Medical diagnosis with the aid of using fuzzy logic and intuitionistic fuzzy logic, Satyajit Das, **Debashree Guha** and Bapi Dutta, Applied Intelligence, Springer, 45, 850-867, 2017 (Impact Factor: 1.215).

11. Partitioned Bonferroni mean based on linguistic 2-tuple for dealing with multi-attribute group decision making, Bapi Dutta, **Debashree Guha**, Applied Soft Computing, Elsevier, 37, 166-179, 2015, (Impact factor 5.472)..

12. Fuzzy multi attribute group decision making method to achieve consensus under the consideration of degrees of confidence of experts' opinions, **Debashree Guha** and Debjani Chakraborty, Computers & Industrial Engineering, 60, 493-504, 2011 (Elsevier, Impact factor: 4.135).

13. A new approach to fuzzy distance measure and similarity measure between two generalized fuzzy Numbers, **Debashree Guha** and Debjani Chakraborty, Applied Soft Computing, 10, 90–99, 201 (Elsevier, Impact factor 5.472).

Recent Development
A COVID-19 Prediction Model: Estimation spread and also the possible duration of the COVID-19 pandemic, by considering both partial lock-down and the corresponding unlocking situations for West Bengal (communicated).

Ph.D. Theses Supervision
1. Nimmalapalli Gowtham Reddy (At IIT Kharagpur, India) is working on Applications of Multi-criteria decision making on Healthcare (Ongoing).
2. Swati Rani Hait (At IIT Kharagpur, India) is working on Aggregation operators and its applications in medical diagnosis (Ongoing).
3. Debasmita Banerjee (At IIT Patna, India) is working on Developing decision making models for inference (Ongoing).
4. Bapi Dutta (At IIT Patna, India) on Decision making with interrelated information (**Awarded, 2017**). He is doing post doc fellow in NUS, Singapore.
5. Satyajit Das (At IIT Patna, India) on Complex decision making using information measures of uncertain data and aggregation operators (**Awarded, 2017**). He is an Assistant Professor in Adamas University.

Sponsored Projects
1. Project Title: Development of Aggregation operators for fusion of uncertain data: A special emphasis to interrelated data and information measures of uncertain data, PI: Debashree Guha Adhya, Co-PI: Prof. Dr. Y.M Tripathi, IIT Patna, Sponsor: SERB-DST.
2. Project Title: Pathology on a Spinning Disc, PI: Prof. Suman Chakraborty, Prof. Arnab Sarkar (IIT BHU), Co-PI: Debashree Guha Adhya, Dr. Satadal Shah, Sponsor: MHRD.
3. Project Title: Application of Multi-criteria Decision Making and Aggregation Operators to Evaluate the Challenging Problems of Healthcare, PI: Dr. Debashree Guha Adhya, Sponsor: SRIC, IIT KGP.

Collaborators: Prof. Arnab Sarkar (Department of Mechanical Engineering, IIT BHU), Dr. Indranil Mallick (TMC Kolkata), Prof. Y.M. Tripathi (IIT Patna), Prof. Suman Chakraborty (IIT KGP, India), Prof. M Manjunatha (IIT KGP, India), Prof. D. Chakraborty (IIT KGP, India), Prof. S. Kar (NIT Durgapur, India), Prof. Radko Mesiar (Slovak University of Technology, Bratislava), Prof. Mark Goh (NUS, Singapore), Prof. Luis Martínez (University of Jaén, Spain), Prof. E. P. Klement (Johannes Kepler University, Linz, Austria).

Important Administrative/Academic Experiences
Coordinator of the Advanced specialization certificate program in Clinical Oncology and Research jointly with TMC Kolkata , **Faculty advisor of** Medical Physics and Biomedical Imaging & Informatics at SMST, **Acted as an associate warden of Girls' Hostel**, IIT Patna, **Acted as female representative of IIT Patna in JAB subcommittee** on increasing female students in IIT B.Tech programs, **Acted as a member of Women's Grievance Cell at IIT Patna.**

Future Plan
1. Developing decision support system
2. Developing mathematical models in infectious disease epidemiology
3. Developing analytic tools for healthcare