

Dr. Nimisha Ghosh

CONTACT INFORMATION

23/2A DurgaCharan Mukherjee Street Kolkata -
700003

Mobile: +91-9874041577
E-mail:
ghosh.nimisha@gmail.com

RESEARCH INTERESTS

Computational Biology, Machine Learning, Wireless Sensor Network

ACADEMIC APPOINTMENTS

Assistant Professor December 2018 till date
• Computer Science & Information Technology, Siksha 'O' Anusandhan (Deemed to be) University
ERCIM Post Doctoral Fellow August 2021 to July 2022
• Faculty of Mathematics, Informatics and Mechanics, University of Warsaw, Poland

EDUCATION

Indian Institute of Engineering Science and Technology, Shibpur, Howrah.
Ph.D.

Department of Information Technology, September 2014 to December 2018

- *Thesis Topic:-Data Gathering Mechanism of Mobile Data Collectors in Wireless Sensor Networks*
- Adviser: Dr. Indrajit Banerjee, Department of Information Technology

Indian Institute of Engineering Science and Technology, Shibpur, Howrah.

- Master of Engineering, Department of Information Technology, 2012-2014
- Marks : 83.83%, Thesis Topic: Data Collection mechanism in Wireless Sensor Network

Techno India College of Technology, West Bengal University of Technology

- Bachelor of Technology, Department of Information Technology, 2005-2009
- Grade : 8.88 DGPA

JOURNALS

- [1] Nimisha Ghosh, Indrajit Saha, Suman Nandi, Nikhil Sharma, "Characterisation of SARS-CoV-2 clades based on signature SNPs unveils continuous evolution", *Methods*, Volume 203, 282-296
- [2] Nimisha Ghosh, Indrajit Saha, Nikhil Sharma, "Palindromic target site identification in SARS-CoV-2, MERS-CoV and SARS-CoV-1 by adopting CRISPR-Cas technique", *Gene*, Volume 818, 2022, 146136
- [3] Nimisha Ghosh, Suman Nandi, Indrajit Saha, "Phylogenetic analysis of 17271 Indian SARS-CoV-2 genomes to identify temporal and spatial hotspot mutations", *Plos One*, Volume 17, 2022, e0265579.
- [4] Nimisha Ghosh, Indrajit Saha, Dariusz Plewczynski, "Genome-Wide Analysis to Identify Palindromes, Mirror and Inverted Repeats in SARS-CoV-2, MERS-CoV and SARS-CoV-1", *IEEE Access*, Volume 10, 2022, 23708-23715.
- [5] Nimisha Ghosh, Suman Nandi, Indrajit Saha, "A Review on Evolution of Emerging SARS-CoV-2 Variants based on Spike Glycoprotein", *International Immunopharmacology*, Volume 105, 2022, 108565.

- [6] Nimisha Ghosh, Indrajit Saha, Nikhil Sharma, "Palindromic target site identification in SARS-CoV-2, MERS-CoV and SARS-CoV-1 by adopting CRISPR-Cas technique", *Gene*, Volume 818, 2022, 146136.
- [7] Daniele Santoni, Nimisha Ghosh, Indrajit Saha, "An entropy-based study on mutational trajectory of SARS-CoV-2 in India", *Infection, Genetics and Evolution*, Volume 97, 2022, 105154.
- [8] Nimisha Ghosh, Sayantan Saha, Rourab Paul, "iDCR: Improved Dempster Combination Rule for multisensor fault diagnosis". *Engineering Applications of Artificial Intelligence*, Volume 104, 2021, 104369.
- [9] Nimisha Ghosh, Nikhil Sharma, Indrajit Saha, Sudipto Saha, "Genome-wide analysis of indian sars-cov-2 genomes to identify t-cell and b-cell epitopes from conserved regions based on immunogenicity and antigenicity", *International Immunopharmacology*, Volume 91, 2021, 107276.
- [10] Indrajit Saha, Nimisha Ghosh, Suman Nandi, "Hotspot Mutations in SARS-CoV-2", *Frontiers in Genetics*, 2021, 2076.
- [11] Indrajit Saha, Nimisha Ghosh, Debasree Maity, Arjit Seal, Dariusz Plewczynski, "COVID-DeepPredictor: Recurrent Neural Network to Predict SARS-CoV-2 and Other Pathogenic Viruses", *Frontiers in Genetics*, Volume 12, 2021, 83.
- [12] Indrajit Saha, Nimisha Ghosh, Ayan Pradhan, Nikhil Sharma, Debasree Maity, Kaushik Mitra, "Whole genome analysis of more than 10000 SARS-CoV-2 virus unveils global genetic diversity and target region of NSP6", *Briefings in Bioinformatics*, Volume 22, 2021, 1106-1121.
- [13] Nimisha Ghosh, Indrajit Saha, Nikhil Sharma, Suman Nandi, Dariusz Plewczynski, "Genome-wide analysis of 10664 SARS-CoV-2 genomes to identify virus strains in 73 countries based on single nucleotide polymorphism", *Virus Research*, Volume 298, 2021, 198401.
- [14] Nimisha Ghosh, Nikhil Sharma, Indrajit Saha, "Immunogenicity and antigenicity based T-cell and B-cell epitopes identification from conserved regions of 10664 SARS-CoV-2 genomes", *Infection, Genetics and Evolution*, Volume 92, 2021, 104823.
- [15] Rourab Paul, Nimisha Ghosh, Suman Sau, Amlan Chakrabarti, Prasant Mohapatra, "Blockchain based secure smart city architecture using low resource IoTs", *Computer Networks*, 2021, 108234.
- [16] Nimisha Ghosh, Indrajit Saha, Jnanendra Prasad Sarkar, Ujjwal Maulik, "Strategies for COVID-19 Epidemiological Surveillance in India: Overall Policies Till June 2021", *Frontiers in Public Health*, Volume 9, 2021.
- [17] Nimisha Ghosh, Indrajit Saha, Suman Nandi, Nikhil Sharma, "Characterisation of SARS-CoV-2 clades based on signature SNPs unveils continuous evolution", *Methods*, 2021.
- [18] Nimisha Ghosh, Indrajit Saha, Nikhil Sharma, "Interactome of human and SARS-CoV-2 proteins to identify human hub proteins associated with comorbidities" *Computers in biology and medicine*, Volume 138, 2021, 104889.
- [19] Daniele Santoni, Nimisha Ghosh, Indrajit Saha, "An entropy-based study on mutational trajectory of SARS-CoV-2 in India", *Infection, Genetics and Evolution*, 2021, 105154.

- [20] Indrajit Saha, Nimisha Ghosh, Debasree Maity, Nikhil Sharma, Jnanendra Prasad Sarkar, Kaushik Mitra, "Genome-wide analysis of Indian SARS-CoV-2 genomes for the identification of genetic mutation and SNP", *Infection, Genetics and Evolution*, Volume 85, 2020, 104457.
 - [21] Indrajit Saha, Nimisha Ghosh, Debasree Maity, Nikhil Sharma, Kaushik Mitra, "Inferring the genetic variability in Indian SARS-CoV-2 genomes using consensus of multiple sequence alignment techniques", *Infection, Genetics and Evolution*, Volume 85, 2020, 104522
 - [22] Jnanendra Prasad Sarkar, Indrajit Saha, Adrian Lancucki, Nimisha Ghosh, Michal Wlasnowolski, Grzegorz Bokota, Piotr Lipinski, Dariusz Plewczynski, "Identification of miRNA Biomarkers for Diverse Cancer Types using Statistical Learning Methods at the Whole Genome Scale, *Frontiers in Genetics*, Volume 11, 2020, 982.
 - [23] Nimisha Ghosh, Rourab Paul, Satyabrata Maity, Krishanu Maity, Sayantan Saha, "Fault Matters: Sensor Data Fusion for Detection of Faults using Dempster-Shafer Theory of Evidence in IoT-Based Applications", *Expert Systems with Applications*, 2020, 113887.
 - [24] Nimisha Ghosh, Indrajit Banerjee, Simon R. Sherratt, "On-demand fuzzy clustering and ant-colony optimisation based mobile data collection in wireless sensor network *Wireless Networks*", Volume 25, 2019, 1829-1845.
 - [25] Nimisha Ghosh, Tripti Prasad, Indrajit Banerjee, "Differential evolution and mobile sink based on-demand clustering protocol for wireless sensor network" *Wireless Personal Communications*, Volume 109, 2019, 1875-1895
 - [26] Nimisha Ghosh, Riddhiman Sett, Indrajit Banerjee, "An efficient trajectory based routing scheme for delay-sensitive data in wireless sensor network" *Computers & Electrical Engineering*, Volume 64, 2017, 288-304.
 - [27] Nimisha Ghosh, Indrajit Banerjee, "An energy-efficient path determination strategy for mobile data collectors in wireless sensor network", *Computers & Electrical Engineering*, Volume 48, 2015, 417-435.
- CONFERENCE
- [28] Nimisha Ghosh, Satyabrata Maity, Krishanu Maity, Sayantan Saha, "Non-Parametric Learning Technique for Activity Recognition in Elderly Patients", *TENCON 2019, 2019 IEEE Region 10 Conference (TENCON)*.
 - [29] Nimisha Ghosh, Indrajit Banerjee, "Application of mobile sink in wireless sensor networks" *2018 10th International Conference on Communication Systems & Networks (COMSNETS)*, 507-509, 2018.
 - [30] Nimisha Ghosh, Riddhiman Sett, Indrajit Banerjee, "Efficient polling point determination and physical model based throughput maximisation in wireless sensor network", *2016 24th international conference on software, telecommunications and computer networks (SoftCOM)*.
 - [31] Nimisha Ghosh, Indrajit Banerjee, Tuhina Samanta, "Energy efficient coverage of static sensor nodes deciding on mobile sink movements using game theory", *2014 Applications and Innovations in Mobile Computing (AIMoC)*, Pages 118-125.
 - [32] Nimisha Ghosh, Sanku Kumar Roy, Tuhina Samanta, Indrajit Banerjee, "Path determination algorithm of mobile sinks for energy efficient data collection and optimal coverage in wireless sensor network", *2014 International Conference on Information Technology*, Pages 76-81.

ACHIEVEMENTS

- Recipient of ERCIM Post-Doctoral Fellowship: 1st August 2021-31st July 2022 at Faculty of Mathematics, Informatics and Mechanics, University of Warsaw, Poland
- Guest Associate Editor of Frontiers in Genetics (Computational Genomics)
- Coordinator of Foundations of Machine Learning, Department of Computer Science and Engineering, January 2020-April 2020
- Heading Machine Learning Research Group in the Department of Computer Science and Information Technology, Institute of Technical Education and Research, Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar, Odisha, Since September, 2019

INDUSTRIAL EXPERIENCE

- 2009–2011, Software Engineer, Accenture Services Pvt. Ltd., Chennai

TEACHING EXPERIENCE

- 6th December 2018 till date, Assistant Professor, Institute of Technical Education and Research, Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar, Odisha

SUBJECTS TAUGHT

- Foundations of Machine Learning, Software Engineering Principles using Android

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