Dr Dilip Senapati

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Research Interests / Specializations

- Stochastic Systems Modeling & Simulation Approaches
- Wireless Sensor Networks & Internet of Things
- Information Theory and Entropy Optimization
- Machine & Deep Learning and Soft-Computing
- Computational Linguistics and Finance
- Network Science and Complex Networks Analysis

Qualification

Degree	Year	Subject	University/Institution
MTech	2009	Computer Science & Technology	**JNU, New Delhi**
PhD	2015	Computer Science	**JNU, New Delhi**

PhD Supervision

Name	Fellowship	Topic	Status
Tanmay Mukherjee	DST INSPIRE	Wireless Communications	Awarded in 2022
Gangadhar Nayak	DST INSPIRE	Data Analytics	Awarded in 2021
Sujit Bebortta	Odisha DST Fellowship	IoT Edge Computing	Continuing
Aditya Ranjan Dalabehera		Computer Vision	Continuing

Professional Recognition/ Award/ Prize/ Certificate/ Fellowship Received

Name of Award	Awarding Agency	Year
Best research outcome in the Department of Computer Science	Ravenshaw University	2019
Research Project **(₹ 9,85,000/-)**	Government of Odisha, Science and Technology	2022
Odisha Start-up Seed Fund Project **(₹ 3,50, 000/-)**	Odisha Higher Education	2019
OHEPEE Research Project **(₹ 2,00,000/-)**	Odisha Higher Education	2022
Co-PI for Machine Translations Project **(more than ₹ 45,00,000/-)**	Odisha Higher Education	2020
NET in Computer Science	UGC	2012
GATE, All India Rank-255	IIT	2006
GATE, All India Rank-256	IIT	2007
JNU, General All India Rank -10	JNU	2007
Joined **SYSCOM** Company as **R&D** Engineer	German based company, Address: Plot no. 153- 154, Noida Special Economy Zone, Block A, Phase-2, Noida, Uttar Pradesh-201305	2009
UGC fellowship	UGC	2007- 2009 and 2009-2012
Computer Science, HoD Assistant Registrar OIC System Nodal Coordinator Esamarth OIC Time Table Nodal Officer Mo Sarkar	Ravenshaw University	2017-2021 2020- April 2023 Jan 2023-April 2023 2020- April 2023 2020- April 2023 2020- April 2023

Publications *(List of papers published in SCI Journals)*

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Sl. No.	Author(s)	Title	Name of Journal	Volume	Page	Year
1	Sujit Bebortta, **Dilip Senapati**, Chhabi Rani Panigrahi, and Bibudhendu Pati	An Adaptive Modeling and Performance Evaluation Framework for Edge-enabled Green IoT Systems	IEEE Transactions on Green Communications and Networking, **IEEE, Index: SCI & Q1 Impact factor: 3.88**	16	836-844	2021
2	Sujit Bebortta, **Dilip Senapati**, Chhabi Rani Panigrahi, and Bibudhendu Pati	An adaptive performance modeling framework for QoS-aware offloading in MEC-based IIoT systems	IEEE Internet of Things, **IEEE Index: SCI & Q1 Impact factor: 11.7**	*9*(12),	10162-10171	2021
3	Tanmay Mukherjee Sujit Bebortta, and **Dilip Senapati**	Stochastic Modeling of q-Lognormal Fading Channels over Tsallis' Entropy: Evaluation of Channel Capacity and Higher Order Moments	Digital Signal Process, **Elsevier, Index: SCI & Q1 Impact Factor: 3.4**	133	103856	2023
4	**Dilip Senapati** and Karmeshu	Generating of cubic power- law for high frequency intra- day returns: Maximum Tsallis entropy framework	Digital Signal Processing, **Elsevier, Index: SCI & Q1 Impact Factor: 3.4**	48	276-284	2016
5	Sujit Bebortta, **Dilip Senapati** et al.	Evidence of power-law behavior in cognitive IoT applications	Neural Computing and Applications, **Springer, Index: SCI & Q1 Impact factor: 5.1**	32	16043-16055	2020
6	Tanmay Mukherjee, Amit Kumar Singh, and **Dilip Senapati**	An adaptive q-Lognormal model towards the computation of Average Channel Capacity in slow fading channels	Telecommunication Systems, **Springer Index: SCI & Q1 Impact factor: 2.3**	79(3)	341-55	2022
7	Sujit Bebortta, Amit Kumar Singh, Bibudhendu Pati and **Dilip Senapati**	A Robust Energy Optimization and Data Reduction Scheme for IoT Based Indoor Environments Using Local Processing Framework	Journal of Network and Systems Management, **Springer Index: SCI & Q1 Impact factor: 2.2**	29	1-28	2021
8	Tanmay Mukherjee, Amit Kumar Singh, and **Dilip Senapati**	Performance evaluation of wireless communication systems over Weibull / q-lognormal shadowed fading Using Tsallis' Entropy Framework	Wireless Personal Communications **Springer, Index: SCI & Q2 Impact factor: 2.01**	106	789-803	2019
9	Gangadhar Nayak, Amit Kumar Singh, and **Dilip Senapati**	Computational modeling of non-Gaussian option price using non-extensive Tsalli's entropy framework	Computational Economics **Springer, Index: SCI & Q2 Impact factor: 1.9**	57	1353-1371	2020

10	Sujit Bebortta, and **Dilip Senapati**	Characterizing the epidemiological dynamics of COVID-19 using a non-parametric framework	Indian Academy of Sciences **Current Science Index: SCI &Q1 Impact Factor: 1.1**	122(7)	790	2022
11	Tanmay Mukherjee and **Dilip Senapati**	A tight approximation towards the SEP computation over Nakagami-m fading channels	National Academy Science Letters **Springer, Index: SCI & Q2 Impact Factor: 0.81**	25	1-4	2022
12	Sujit Bebortta, and **Dilip Senapati**	Towards Cost-aware Computation Offloading in IoT-based MEC Systems	National Academy Science Letters **Springer, Index: SCI & Q2 Impact Factor: 0.81**	27	1-4	2023

Publications *(List of papers published in Scopus Journals)*

Sl. No.	Title	Author's Name	Publisher	Volume	page	Year of Publication
1	Evaluation of symbol error probability using a new tight Gaussian q approximation.	Tanmay Mukherjee, Amit Gangadhar Nayak, and **Dilip Senapati**	International Journal of Systems Control and Communications, **Inderscience, Index: Scopus**	12	60-71	2021
2	Fast and Tight Computational Methods for Option Price	Gangadhar Nayak, and **Dilip Senapati**	International Journal of Information Technology, **Springer Index: Scopus**	14(3)	1295-1303	2022
3	Option pricing model based on sentiment using the Gram-Charlier expansion.	Gangadhar Nayak, and **Dilip Senapati**	Sustainable Humanosphere, **Index: Scopus**	16	669-677	2020
4	Integrated bacteria-algal bioreactor for removal of toxic metals in acid mine drainage from iron ore mines.	Hrudananda Sahoo, **DilipSenapati** , Indu SekharThakur , and Umesh Chandra Naik	Bioresource Technology Reports, **Elsevier Index: Scopus**	11	100422	2020
5	Performance Analysis of Multi-access Edge Computing Networks for Heterogeneous IoT Systems	Sujit Bebortta Amit Kumar Singh, and **Dilip Senapati**	Materials Today: Proceedings **Elsevier Index: Scopus**	58	267-272	2022
6	An intelligent spatial stream processing framework for digital forensics amid the COVID-19 outbreak	Sujit Bebortta, Aditya Ranjan Dalabehera, Ganya Ranjan, Biswajit Sahoo and **Dilip Senapati**	Smart Health **Elsevier Index: Scopus**	12	100308	2022

Publications *(List of papers published in International Conferences)*

Sl. No.	Title	Author's Name	Publisher	page	Year of Publication
1	Characterization of range for smart home sensors using tsallis entropy framework.	Sujit Bebortta, Amit Kumar Singh, Surajit Mohanty, and **Dilip Senapati**	Advanced computing and intelligent engineering, Springer **Index: Scopus**	265-276	2020
2	A real-time smart waste management based on cognitive IoT framework.	Bebortta, Sujit, Nikhil Kumar Rajput, Bibudhendu Pati, and **Dilip Senapati**	In Advances in Electrical and Computer Technologies, Springer, Singapore **Index: Scopus**	407-414	2020
3	A non-stationary analysis of erlang loss model.	Amit Kumar Singh, Amit Kumar, **Dilip Senapati**, Sujit Bebortta, and Nikhil Kumar Rajput	In Progress in Advanced Computing and Intelligent Engineering Springer, Singapore **Index: Scopus**	286-294	2021
4	Adaptive applications of maximum entropy principle.	Singh, Amit Kumar, **Dilip Senapati**, Tanmay Mukherjee, and Nikhil Kumar Rajput.	In Progress in Advanced Computing and Intelligent Engineering Springer, Singapore **Index: Scopus**	373-379	2021
5	A non-stationary analysis of erlang loss model.	Singh, Amit Kumar, Dilip Senapati, Sujit Bebortta, and Nikhil Kumar Rajput	In Progress in Advanced Computing and Intelligent Engineering Springer, Singapore **Index: Scopus**	286-294	2021
6	Towards an Intelligent Nature-Inspired Optimization Framework for Managing Healthcare Big Data	Sujit Bebortta, Surajit Mohanty, Soumya Snigdha Mohapatra, and **Dilip Senapati**	International Conference on Advanced Computing and Intelligent Engineering [ICACIE 2022] Springer, Singapore **Index: Scopus**	Paper ID-42	2022
7	Hybrid Machine Learning Framework for Network Intrusion Detection in IoT-based Environments	Sujit Bebortta, Shiba Charan Barik, Ladu Kishore Sahoo, Soumya Snigdha Mohapatra, and **Dilip Senapati**	International Conference on Advanced Computing and Intelligent Engineering [ICACIE 2022] Springer, Singapore **Index: Scopus**	Paper ID-64	2022
8	Stochastic Performance Modeling and Analysis of Mobile Edge Computing for Scale-Free Internet of Things	**Dilip Senapati** and Sujit Bebortta	Odisha Research Conclave		2022
9	Superstatistics Characterization of Composite Fading Channels Using	Tanmay Mukherjee, Sujit Bebortta and **Dilip Senapati**	Odisha Research Conclave		2021

	Non-Extensive Tsallis' Entropy Framework			
10	Developing Energy Efficient Frameworks for Dynamic IoT Environments: Adaptive Modeling and Performance Evaluation Techniques	**Dilip Senapati,** Sujit Bebortta, and Aditya Ranjan	Odisha Research Conclave	2021
11	Stylizing Indian Gita Corpus Through Zipf's Law	Arpita Debishree, Laxmipriya Das Sujit Bebortta, and **Dilip Senapati**	International Conference on Advanced Computing and Intelligent Engineering [ICACIE 2022]	2022
12	Robust IoT based Deep Learning Framework for Real-time Human Activity Recognition.	Aditya Ranjan, Sujit Bebortta, and **Dilip Senapati**	International Conference on Advanced Computing and Intelligent Engineering [ICACIE 2022]	2022

Book Chapters

Sl. No.	Title	Author's Name	Publisher	Volume	page	Year of Publication
1	A secure blockchain based solution for harnessing the future of smart healthcare.	Sujit Bebortta, and **Dilip Senapati**	**Elsevier Index: Scopus**	Book Chapter	167-191	2021
2	Empirical characterization of network traffic for reliable communication of IoT devices.	Sujit Bebortta, and **Dilip Senapati**	**Springer Index: Scopus**	Book Chapter	67	2021
3	Precision Healthcare in the Era of IoT and Big Data: Monitoring of Self-care Activities.	Sujit Bebortta, and **Dilip Senapati**	**CRC Press Index: Scopus**	Book Chapter	91-118	2023

Visiting Lecturer Title

1. Introduction to IoT and its applications, TEQIP-III BPUT, Dreams Engineering College, Tangi, Odisha.

2. Evidence of power-law behavior in cognitive IoT applications, TEQIP-III BPUT, Dreams Engineering College, Tangi, Odisha

3. Hands-on session: IoT prototype design and applications, TEQIP-III BPUT, Dreams Engineering College, Tangi, Odisha.

4. Application of Monte-Carlo simulation methods, UGC lecture series, BBAM, Chandikhole, Odisha.

5. Roles of eigenvalues and eigenvector in dynamical systems, UGC lecture series, BBAM, Chandikhole, Odisha.

6. IoT application and its prototype design principles, St. Frencise De Sales College, Seminary Hills, Nagpur.

Conference Presentations

1. Progress in Advanced Computing and Intelligent Engineering, ICACIE 2019 Springer.
2. Progress in Advanced Computing and Intelligent Engineering, 2019 Springer.
3. Progress in Advanced Computing and Intelligent Engineering, ICACIE 2019 Springer.
4. Progress in Advanced Computing and Intelligent Engineering, ICACIE 2018, Springer.
5. International Conference on Advances in Electrical and Computer Technologies2, 019, Springer.
6. The International Conference on Artificial Intelligence & Energy Systems, AIES, 2021, Elsevier.
7. Towards an Intelligent Nature-Inspired Optimization Framework for Managing Healthcare Big Data, ICACIE 2022, Springer.
8. Hybrid Machine Learning Framework for Network Intrusion Detection in IoT-based Environments, ICACIE 2022, Springer.
9. Developing Energy Efficient Frameworks for Dynamic IoT Environments: Adaptive Modeling and Performance Evaluation Techniques, ICACIE 2022, Springer.
10. Stochastic Performance Modeling and Analysis of Mobile Edge Computing for Scale-Free Internet of Things, ICACIE 2022, Springer.