Debarka Sengupta, Ph.D., dob: 29/11/1983 (39 yrs.)

Associate Professor
Depts. Of Comp. Bio. and Comp. Sc. & Engg.
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Education

Genome Institute of Singapore (GIS), SINGAPORE:
Postdoctoral Fellow 2013 – 2016

Indian Statistical Institute, Kolkata, INDIA:
Ph.D. in Computer Science and Engineering 2009 – 2013

Meghnad Saha Institute of Technology, WBUT, Kolkata, INDIA:
B.Tech. in Computer Science and Engineering 2002 – 2006

Academic Positions

Head, Infosys Centre for Artificial Intelligence 2022 – present
Associate Professor, Depts. of CB and CSE, 2020 – present
Assistant Professor, Depts. of CB and CSE, 2017 – 2020
Indraprastha Institute of Information Technology, Delhi, INDIA.

Adj. Associate Professor, 2020 – 2023
Queensland University of Technology, Brisbane, AUSTRALIA.

INSPIRE Faculty, 2016 – 2016
Machine Intelligence Unit, Indian Statistical Institute, Kolkata, INDIA.

Industrial Positions

Scientific Cofounder, 2022 – 2023
GenterpretR Inc., TX, USA.

Scientific Cofounder, 2021 – present
d.kraft Pte. Ltd., SINGAPORE.

Chief Scientific Advisor, 2021 – present
CareOnco Biotech Pvt. Ltd., Delhi, INDIA.

Consultant (Head, Data Sciences), 2018 – 2019
Circle of Life Healthcare Pvt. Ltd., Delhi, INDIA.

Senior Data Scientist, 2013 – 2013
CoreCompete Pvt. Ltd., Hyderabad, INDIA.

Systems Engineer, 2007 – 2009
IBM India Pvt. Ltd., INDIA.

Software Engineer, 2006 – 2007
Infosys Ltd., INDIA.

Technologies Developed/licensed

TEPScan™ - *Early cancer detection test*
CareOnco Biotech Pvt. Ltd., Delhi, INDIA

ZEVAC - AI based antimicrobial stewardship
Circle of Life Healthcare Pvt. Ltd., Delhi, INDIA.

Research Grants (Select)

2023-2025 **Science and Engineering Research Board (SERB)**: "RNA velocity independent direction resolved trajectory inference from scRNA-seq data"; **Amount**: USD 67,000; **Role:** Principal Investigator

2022-2027 **Department of Biotechnology, Govt. of India**: "Establishment of Bioinformatics Centre for Biomedical Applications" under "National Network Projects"; **Amount**: ~ USD 290,000; **Role**: Co-Principal Investigator

2023-2027 **DBT (Indo-Swiss Joint Research Programme)**: "Recurrence-independent inference of rare and non-coding functional mutations in cancer"; **Duration**: 2021-2024; **Amount**: USD 412,000 (Swiss-India combined budget); **Role**: Principal Investigator (Indian Part)

2022-2024 **Science and Engineering Research Board (SERB)** Technology Innovation Hub (TiH) in the area of "Cognitive Computing and Social Sensing" under the NM-ICPS scheme: "A pretrained model based approach to characterisation of functional heterogeneity in cancer"; **Amount**: USD 42,000 [parent program budget ~USD 12 Million]; **Role**: Principal Investigator

2021-2023 **Indian Council of Medical Research**: "Ultrasound placental image texture analysis using artificial intelligence applications to predict hypertension in pregnancy"; **Duration**: 2021-2023; **Amount**: USD 26,800; **Role**: Co-Principal Investigator

2016-2021 **Dept. of Science and Technology, Govt. of India**: "Statistical and computational methods for addressing some unmet challenges in analysis of single cell RNA-seq data"; **Amount**: USD 42,300; **Role**: Principal Investigator

2020 **NextOrbit Platforms and Solutions Pvt. Ltd.**: "Price optimization, demand planning and out of stock prediction using deep learning"; **Amount**: ~ USD 11,600; **Role**: Principal Investigator

Postdoctoral Research Supervised

2022-2023: Urvashi Arora, Ph.D.
2023-2023: Prashant Gupta, Ph.D.

Doctoral Theses Supervised

2016-2019: Debajyoti Sinha, Ph.D., presently a postdoc at the University of Nantes, FRANCE **(co-advisor)**
2017-2021: Krishan Gupta, Ph.D., presently a postdoc at the Harvard Medical School, MA, USA **(advisor)**
2017-2022: Smriti Chawla, Ph.D., presently a postdoc at the Harvard Medical School, MA, USA **(advisor)**
2017-2022: Asif Adil, Ph.D., to join Indiana University, USA **(co-advisor)**
2017-2023: Prashant Gupta, Ph.D., to join Wellcome Sanger Institute, UK as a postdoc **(co-advisor)**
2017-2023: Aashi Jindal, Ph.D., working at Applied Solar Technologies, INDIA **(co-advisor)**
2017-2022: Priyadarshini Rai, Ph.D., University of Pennsylvania, PA, USA **(advisor)**

(thesis submitted)

2017-2022: Chitrita Goswami (thesis submitted), presently a postdoc at Roche, NY, USA **(advisor)**
2017-2023: Sarita Poonia (thesis submitted), to join Cleveland Clinic, OH, USA **(advisor)**

Editorial Experience

Member, Editorial Board, Communications Biology (NPG journal) (2020-Present)
Academic Editor, PLOS one (2019-Present)
Member, Editorial Board, Scientific Reports (NPG journal) (2019-Present)
Department Editor, Crossroads, The ACM Magazine for Students (2011-2013)

Publications

1. Arora U, **Sengupta D**, Kumar M, Tirupathi, K., Sai, M.K., Hareesh, A., Chaithanya, E.S.S., Nikhila, V., Bhavana, N., Vigneshwar, P. and Rani, A., 2023. Perceiving placental ultrasound image texture evolution during pregnancy with normal and adverse outcome through machine learning prism. **Placenta**. 2023. https://doi.org/10.1016/j.placenta.2023.07.014
2. Ghannoum S*, Fantini D, Zahoor M, Reiterer V, Phuyal S, Leoncio Netto W, Sørensen Ø, Iyer A, **Sengupta D**, Prasmickaite L, Mælandsmo GM, Köhn-Luque A*, Farhan H*. (2023). A combined experimental-computational approach uncovers a role for the Golgi matrix protein Giantin in breast cancer progression. **PLoS computational biology**, 19(4), e1010995. Advance online publication. https://doi.org/10.1371/journal.pcbi.1010995
3. Mishra S, Pandey N, Chawla S, Sharma M, Chandra O, Jha IP, **Sengupta D**, Natarajan KN*, Kumar V*. Matching queried single-cell open-chromatin profiles to large pools of single-cell transcriptomes and epigenomes for reference supported analysis. **Genome Res.** 2023 Feb;33(2):218-231. doi: 10.1101/gr.277015.122. Epub 2023 Jan 18. PMID: 36653120.
4. Mohanty SK, Maryam S, Gautam V, Mittal A, Gupta K, Arora R, Bhadra W, Mishra T, **Sengupta D**, Ahuja G*. Transcriptional advantage influence odorant receptor gene choice. **Brief Funct Genomics**. 2022 Dec 18:elac052. Doi: 10.1093/bfgp/elac052. Epub ahead of print. PMID: 36542133.

5. Poonia S, Goel A, Chawla S, Bhattacharya N, Rai P, Lee YF, Yap YS, West J, Bhagat AA, Tayal J, Mehta A, Ahuja G, Majumdar A*, Ramalingam N*, **Sengupta D***. Marker-free characterization of full-length transcriptomes of single live circulating tumor cells. **Genome Res.** 2023 Jan;33(1):80-95. Doi: 10.1101/gr.276600.122. Epub 2022 Nov 22. PMID: 36414416; PMCID: PMC9977151.
6. Gupta K, Balyan K, Lamba B, Puri M, **Sengupta D**, Kumar M*. Ultrasound placental image texture analysis using artificial intelligence to predict hypertension in pregnancy. **J Matern Fetal Neonatal Med.** 2022 Dec;35(25):5587-5594. doi: 10.1080/14767058.2021.1887847. Epub 2021 Feb 17. PMID: 33596762.
7. Flores BCT, Chawla S, Ma N, Sanada C, Kujur PK, Yeung R, Bellon MB, Hukari K, Fowler B, Lynch M, Chinen LTD, Ramalingam N*, **Sengupta D***, Jeffrey SS*. Microfluidic live tracking and transcriptomics of cancer-immune cell doublets link intercellular proximity and gene regulation. **Commun Biol.** 2022 Nov 12;5(1):1231. doi: 10.1038/s42003-022-04205-y. PMID: 36371461; PMCID: PMC9653407.
8. Chawla S, Rockstroh A, Lehman M, Ratther E, Jain A, Anand A, Gupta A, Bhattacharya N, Poonia S, Rai P, Das N, Majumdar A, Jayadeva, Ahuja G, Hollier BG, Nelson CC*, **Sengupta D***. Gene expression based inference of cancer drug sensitivity. **Nat Commun**. 2022 Sep 27;13(1):5680. Doi: 10.1038/s41467-022-33291-z. PMID: 36167836; PMCID: PMC9515171.
9. Gautam V, Gupta R, Gupta D, Ruhela A, Mittal A, Mohanty SK, Arora S, Gupta R, Saini C, **Sengupta D**, Murugan NA, Ahuja G*. deepGraphh: AI-driven web service for graph-based quantitative structure-activity relationship analysis. **Brief Bioinform.** 2022 Sep 20;23(5):bbac288. doi: 10.1093/bib/bbac288. PMID: 35868454.
10. Mittal A, Mohanty SK, Gautam V, Arora S, Saproo S, Gupta R, Sivakumar R, Garg P, Aggarwal A, Raghavachary P, Dixit NK, Singh VP, Mehta A, Tayal J, Naidu S, **Sengupta D***, Ahuja G*. Artificial intelligence uncovers carcinogenic human metabolites. **Nat Chem Biol**. 2022 Nov;18(11):1204-1213. Doi: 10.1038/s41589-022-01110-7. Epub 2022 Aug 11. PMID: 35953549.
11. Gupta P, Jindal A, Ahuja G, Jayadeva*, **Sengupta D***. A new deep learning technique reveals the exclusive functional contributions of individual cancer mutations. **J Biol Chem**. 2022 Aug;298(8):102177. doi: 10.1016/j.jbc.2022.102177. Epub 2022 Jun 24. PMID: 35753349; PMCID: PMC9304782.
12. Rai P, **Sengupta D***, Majumdar A. SelfE: Gene Selection via Self-Expression for Single-Cell Data. **IEEE/ACM Trans Comput Biol Bioinform.** 2022 Jan-Feb;19(1):624-632. doi: 10.1109/TCBB.2020.2997326. Epub 2022 Feb 3. PMID: 32750851.
13. Gautam V, Mittal A, Kalra S, Mohanty SK, Gupta K, Rani K, Naidu S, Mishra T, **Sengupta D**, Ahuja G*. EcTracker: Tracking and elucidating ectopic expression leveraging large-scale scRNA-seq studies. **Brief Bioinform.** 2021 Nov 5;22(6):bbab237. doi: 10.1093/bib/bbab237. PMID: 34184038.
14. Kinyoki D, Osgood-Zimmerman AE, Bhattacharjee NV; **Local Burden of Disease Anaemia Collaborators**; Kassebaum NJ, Hay SI*. Anemia prevalence in women of reproductive age in low- and middle-income countries between 2000 and 2018. **Nat Med.** 2021 Oct;27(10):1761-1782. doi: 10.1038/s41591-021-01498-0. Epub 2021 Oct 12. PMID: 34642490; PMCID: PMC8516651.

15. Gupta K, Yadav P, Maryam S, Ahuja G*, **Sengupta D***. Quantification of Age- Related Decline in Transcriptional Homeostasis. **J Mol Biol.** 2021 Sep 17;433(19):167179. doi: 10.1016/j.jmb.2021.167179. Epub 2021 Jul 30. PMID: 34339725.
16. Gupta R, Mittal A, Agrawal V, Gupta S, Gupta K, Jain RR, Garg P, Mohanty SK, Sogani R, Chhabra HS, Gautam V, Mishra T, **Sengupta D**, Ahuja G*. OdoriFy: A conglomerate of artificial intelligence-driven prediction engines for olfactory decoding. **J Biol Chem.** 2021 Aug;297(2):100956. doi: 10.1016/j.jbc.2021.100956. Epub 2021 Jul 12. PMID: 34265305; PMCID: PMC8342790.
17. Bhattacharjee NV, Schaeffer LE, Hay S*I; **Local Burden of Disease Exclusive Breastfeeding Collaborators**. Mapping inequalities in exclusive breastfeeding in low- and middle-income countries, 2000-2018. **Nat Hum Behav.** 2021 Aug;5(8):1027-1045. doi: 10.1038/s41562-021-01108-6. Epub 2021 Jun 3. PMID: 34083753; PMCID: PMC8373614.
18. Bhattacharya N, Nelson CC*, Ahuja G*, **Sengupta D***. Big data analytics in single-cell transcriptomics: Five grand opportunities. **Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery**. 2021 Jul;11(4):e1414.
19. Kalra S, Mittal A, Bajoria M, Mishra T, Maryam S, **Sengupta D***, Ahuja G*. Challenges and possible solutions for decoding extranasal olfactory receptors. **FEBS J.** 2021 Jul;288(14):4230-4241. doi: 10.1111/febs.15606. Epub 2020 Nov 6. PMID: 33085840
20. Gupta K, Lalit M, Biswas A, Sanada CD, Greene C, Hukari K, Maulik U, Bandyopadhyay S, Ramalingam N, Ahuja G, Ghosh A*, **Sengupta D***. Modeling expression ranks for noise-tolerant differential expression analysis of scRNA-seq data. **Genome Res.** 2021 Apr;31(4):689-697. doi: 10.1101/gr.267070.120. Epub 2021 Mar 5. PMID: 33674351; PMCID: PMC8015842.
21. Gupta K, Mohanty SK, Mittal A, Kalra S, Kumar S, Mishra T, Ahuja J, **Sengupta D***, Ahuja G*. The Cellular basis of loss of smell in 2019-nCoV-infected individuals. **Brief Bioinform.** 2021 Mar 22;22(2):873-881. Doi: 10.1093/bib/bbaa168. PMID: 32810867; PMCID: PMC7462334.
22. Chawla S, Samydurai S, Kong SL, Wu Z, Wang Z, Tam WL, **Sengupta D***, Kumar V*. UniPath: a uniform approach for pathway and gene-set based analysis of heterogeneity in single-cell epigenome and transcriptome profiles. **Nucleic Acids Res**. 2021 Feb 22;49(3):e13. doi: 10.1093/nar/gkaa1138. PMID: 33275158; PMCID: PMC7897496.
23. Gupta A, Choudhary M, Mohanty SK, Mittal A, Gupta K, Arya A, Kumar S, Katyayan N, Dixit NK, Kalra S, Goel M, Sahni M, Singhal V, Mishra T, **Sengupta D***, Ahuja G*. Machine-OlF-Action: A unified framework for developing and interpreting machine-learning models for chemosensory research. **Bioinformatics.** 2021 Jan 8:btaa1104. doi: 10.1093/bioinformatics/btaa1104. Epub ahead of print. PMID: 33416866.
24. Gerkin RC, Ohla K, Veldhuizen MG, (many authors) … , **Sengupta D**, (many authors) … , Niv MY, Munger SD, Parma V*; GCCR Group Author. Recent Smell Loss Is the Best Predictor of COVID-19 Among Individuals With Recent Respiratory Symptoms. **Chem Senses.** 2021 Jan 1;46:bjaa081. Doi: 10.1093/chemse/bjaa081. PMID: 33367502; PMCID: PMC7799216.
25. Rai P, Majumdar A*, **Sengupta D.** 2020. Cluster Aware Deep Dictionary Learning for Single Cell Analysis. In Neural Information Processing: 27th International Conference, **ICONIP 2020**, Bangkok, Thailand, November 18–22, 2020, Proceedings, Part V 27 (pp. 62-69). Springer International Publishing.

26. Goswami C, Chawla S, Thakral D, Pant H, Verma P, Malik PS, Jayadeva, Gupta R*, Ahuja G*, **Sengupta D***. Molecular signature comprising 11 platelet-genes enables accurate blood-based diagnosis of NSCLC. **BMC Genomics**. 2020 Oct 27;21(1):744. doi: 10.1186/s12864-020-07147-z. PMID: 33287695; PMCID: PMC7590669.
27. Kalra S, Mittal A, Gupta K, Singhal V, Gupta A, Mishra T, Naidu S, **Sengupta D***, Ahuja G*. Analysis of single-cell transcriptomes links enrichment of olfactory receptors with cancer cell differentiation status and prognosis. **Commun Biol.** 2020 Sep 11;3(1):506. doi: 10.1038/s42003-020-01232-5. PMID: 32917933; PMCID: PMC7486295.
28. Mongia A, **Sengupta D***, Majumdar A. deepMc: Deep Matrix Completion for Imputation of Single-Cell RNA-seq Data. **J Comput Biol**. 2020 Jul;27(7):1011-1019. doi: 10.1089/cmb.2019.0278. Epub 2019 Oct 29. PMID: 31657645.
29. Iyer A, Gupta K, Sharma S, Hari K, Lee YF, Ramalingam N, Yap YS, West J, Bhagat AA, Subramani BV, Sabuwala B, Tan TZ, Thiery JP, Jolly MK, Ramalingam N*, **Sengupta D***. Integrative Analysis and Machine Learning based Characterization of Single Circulating Tumor Cells. **J Clin Med.** 2020 Apr 22;9(4):1206. Doi: 10.3390/jcm9041206. PMID: 32331451; PMCID: PMC7230872.
30. Sinha D, Sinha P, Saha R, Bandyopadhyay S*, **Sengupta D***. Improved dropClust R package with integrative analysis support for scRNA-seq data. **Bioinformatics.** 2019 Nov 6:btz823. doi: 10.1093/bioinformatics/btz823. Epub ahead of print. PMID: 31693086.
31. Goswami C, Poonia S, Kumar L*, **Sengupta D***. Staging System to Predict the Risk of Relapse in Multiple Myeloma Patients Undergoing Autologous Stem Cell Transplantation. **Front Oncol.** 2019 Jul 12;9:633. doi: 10.3389/fonc.2019.00633. PMID: 31355145; PMCID: PMC6640159.
32. Mukherjee M, Naqvi, SA, Verma A, **Sengupta D,** Parnami A., 2019. MenstruLoss: sensor for menstrual blood loss monitoring. **Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies,** 3(2), pp.1-21.
33. Mongia A, **Sengupta D***, Majumdar A. McImpute: Matrix Completion Based Imputation for Single Cell RNA-seq Data. **Front Genet.** 2019 Jan 29;10:9. Doi: 10.3389/fgene.2019.00009. PMID: 30761179; PMCID: PMC6361810.
34. Gupta K*, Jain T*, **Sengupta D.** 2018. Texture Classification Using Deep Convolutional Neural Network with Ensemble Learning. In Mining Intelligence and Knowledge Exploration: 6th International Conference, **MIKE 2018**, Cluj-Napoca, Romania, December 20–22, 2018, Proceedings 6 (pp. 341-350). Springer International Publishing.
35. Jindal A, Gupta P, Jayadeva*, **Sengupta D***. Discovery of rare cells from voluminous single cell expression data. **Nat Commun.** 2018 Nov 9;9(1):4719. Doi: 10.1038/s41467-018-07234-6. PMID: 30413715; PMCID: PMC6226447.
36. Talwar D, Mongia A, **Sengupta D***, Majumdar A. AutoImpute: Autoencoder based imputation of single-cell RNA-seq data. **Sci Rep.** 2018 Nov 5;8(1):16329. Doi: 10.1038/s41598-018-34688-x. PMID: 30397240; PMCID: PMC6218547.
37. Lall S, Sinha D, Bandyopadhyay S*, **Sengupta D***. Structure-Aware Principal Component Analysis for Single-Cell RNA-seq Data. **J Comput Biol.** 2018 Aug 22. doi: 10.1089/cmb.2018.0027. Epub ahead of print. PMID: 30133312.
38. Srivastava D, Iyer A, Kumar V*, **Sengupta D***. CellAtlasSearch: a scalable search engine for single cells. **Nucleic Acids Res.** 2018 Jul 2;46(W1):W141-W147. doi: 10.1093/nar/gky421. PMID: 29788498; PMCID: PMC6030823.

39. Sinha D, Kumar A, Kumar H, Bandyopadhyay S*, **Sengupta D***. dropClust: efficient clustering of ultra-large scRNA-seq data. **Nucleic Acids Res.** 2018 Apr 6;46(6):e36. doi: 10.1093/nar/gky007. PMID: 29361178; PMCID: PMC5888655.
40. Sinha D, **Sengupta D***, Bandyopadhyay S*. ParSel: Parallel Selection of Micro- RNAs for Survival Classification in Cancers. **Mol Inform.** 2017 Jul;36(7). Doi: 10.1002/minf.201600141. Epub 2017 Feb 13. PMID: 28727297.
41. Li H, Courtois ET, **Sengupta D**, Tan Y, Chen KH, Goh JJL, Kong SL, Chua C, Hon LK, Tan WS, Wong M, Choi PJ, Wee LJK, Hillmer AM, Tan IB*, Robson P*, Prabhakar S*. Reference component analysis of single-cell transcriptomes elucidates cellular heterogeneity in human colorectal tumors. **Nat Genet.** 2017 May;49(5):708-718. doi: 10.1038/ng.3818. Epub 2017 Mar 20. PMID: 28319088.
42. **Sengupta D**, Bandyopadhyay S, Sinha D. A Scoring Scheme for Online Feature Selection: Simulating Model Performance Without Retraining. **IEEE Trans Neural Netw Learn Syst.** 2017 Feb;28(2):405-414. doi: 10.1109/TNNLS.2016.2514270. Epub 2016 Jan 21. PMID: 26812738.
43. Cima I, Kong SL, **Sengupta D**, Tan IB, Phyo WM, Lee D, Hu M, Iliescu C, Alexander I, Goh WL, Rahmani M, Suhaimi NA, Vo JH, Tai JA, Tan JH, Chua C, Ten R, Lim WJ, Chew MH, Hauser CA, van Dam RM, Lim WY, Prabhakar S, Lim B, Koh PK, Robson P, Ying JY, Hillmer AM, Tan MH*. Tumor-derived circulating endothelial cell clusters in colorectal cancer. **Sci Transl Med.** 2016 Jun 29;8(345):345ra89. doi: 10.1126/scitranslmed.aad7369. PMID: 27358499.
44. **Sengupta D**, Aich I, Bandyopadhyay S*. Feature selection using feature dissimilarity measure and density-based clustering: application to biological data. **J Biosci.** 2015 Oct;40(4):721-30. doi: 10.1007/s12038-015-9556-y. PMID: 26564974.
45. Basu S, **Sengupta D,** Maulik U, Bandyopadhyay S. 2014, January. A strong Nash stability based approach to minimum quasi clique partitioning. In 2014 Sixth International Conference on Communication Systems and Networks **(COMSNETS)** (pp. 1-6). IEEE.
46. **Sengupta D**, Pyne A, Maulik U, Bandyopadhyay S. Reformulated Kemeny optimal aggregation with application in consensus ranking of microRNA targets. **IEEE/ACM Trans Comput Biol Bioinform.** 2013 May-Jun;10(3):742-51. Doi: 10.1109/TCBB.2013.74. PMID: 24091406.
47. Bandyopadhyay S*, **Sengupta D**, Maulik U*. GRF: A Greedy Rank Fusion Algorithm for Combining MicroRNA Target Orderings. **Mol Inform.** 2013 Aug;32(8):685-91. Doi: 10.1002/minf.201200165. Epub 2013 Jul 23. PMID: 27480061.
48. **Sengupta D**, Bandyopadhyay S*. Topological patterns in microRNA-gene regulatory network: studies in colorectal and breast cancer. **Mol Biosyst.** 2013 Jun;9(6):1360-71. doi: 10.1039/c3mb25518b. Epub 2013 Mar 11. PMID: 23475160.
49. **Sengupta D,** Maulik U, Bandyopadhyay S. 2012. Score based aggregation of microRNA target orderings. In Bioinformatics Research and Applications: 8th International Symposium, **ISBRA 2012,** Dallas, TX, USA, May 21-23, 2012. Proceedings 8 (pp. 237-248). Springer Berlin Heidelberg.
50. **Sengupta D**, Maulik U, Bandyopadhyay S*. Weighted Markov Chain Based Aggregation of Bio-molecule Orderings. **IEEE/ACM Trans Comput Biol Bioinform.** 2012 May-Jun;9(3):924-933. doi: 10.1109/TCBB.2012.28. Epub 2012 Jan 31. PMID: 22331863.

51. **Sengupta D**, Bandyopadhyay S*. Participation of microRNAs in human interactome: extraction of microRNA-microRNA regulations. **Mol Biosyst.** 2011 Jun;7(6):1966-73. doi: 10.1039/c0mb00347f. Epub 2011 Apr 11. PMID: 21483898.
52. **Sengupta D,** Maulik U, Bandyopadhyay S. 2011, March. Entropy steered Kendall's tau measure for a fair Rank Aggregation. In 2011 **2nd National Conference on Emerging Trends and Applications in Computer Science** (pp. 1-5). IEEE.
53. **Sengupta D,** Bandyopadhyay S, Maulik U. 2010, February. A novel measure for evaluating an ordered list: application in microRNA target prediction. In **Proceedings of the international symposium on biocomputing** (pp. 1-7).

Patents

1. Ahuja G, **Sengupta D**, Mittal A, Garg P, S. R. Ensemble classifier engine for classifying carcinogenicity (Indian patent application no.: 202111052929; Application date: 17/12/2021; Current status: Published)
2. **Sengupta D**, Goswami C, Chawla S. Gene panel for detecting the presence of blood-based genetic markers of non-small cell lung cancer (Indian patent application no.: 202011042049; Application date: 28/09/2020; Current status: Published); Note: IIIT-D transferred the technology to CareOnco Biotech Pvt. Ltd.
3. Jayadeva, Gupta, P., Jindal, A., and **Sengupta, D**., Compressed binary search tree for K-NN searches in hamming space (Indian patent application no.: 202011002697; Application date: 21/01/2020; Current status: Published)
4. Jayadeva, Jindal, A., Gupta, P., and **Sengupta, D**., Finding rare samples in a given dataset. (Indian patent application no.: 201811042117; Application date: 08/11/2018; Current status: Published)
5. Bandyopadhyay S, **Sengupta D**, Maulik U. Determining a relative importance among ordered lists (US patent, No. US9842147B2: Application Granted)

Awards

2023: Faculty Research Award by Precision Group
2022: INAE Young Innovator and Entrepreneur Award
2022: Faculty Research Award by Applied Solar Technologies
2021: IIIT-D Department outstanding researcher
2020: Adjunct Associate Professor QUT Australia
2015: INSPIRE Faculty Fellowship
2014: INSPIRE Faculty Fellowship (not activated)
2012: Travel award by DST
2012: Travel award by NSF, USA
2011: Invention Award by Intellectual Ventures
2007: Infosys Spot Award

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