### Animesh Dutta

#### **Research interest**

Complex Network

Multi-agent Systems

Semantic web

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#### Education

PhD (2013), Jadavpur University, Kolkata, West Bengal, India. M.Tech (2006), National Institute of Technology, Durgapur, West Bengal, India. B.E. (2002), Regional Engineering College (NIT), Durgapur, West Bengal, India.

Sl No.	Name of scholar	Thesis title	Status
1	Ms. Poulami Dalapati	Multiagent Based Algorithmic Approach	Awarded on 5th
		for Railway Scheduling, Collision Han-	June 2018
		dling and Optimization	
2	Mr. Bikash Choudhury	An Efficient Service Oriented Middleware Awarded on 19	
		for SOC in Mobile Ad Hoc Network	April 2019
3	Mr. Abhijit Adhikari	A Framework for Measuring the Semantic	Awarded on 6th
		Relatedness between Concepts	June 2019
4	Ms. Amrita Namtirtha	Identifying Influential Spreaders: A Graph	Awarded on 15th
		Analytics Approach	June 2020
5	Mr. Narayan Changder	Novel Algorithms for Multi-Agents Coali-	Awarded on 25th
		tion Structure Generation	March 2021
6	Ms. Sangeeta Sen	A Graph Data Model in Semantic Web En-	Awarded on 17th
		vironment	August 2021
7	Ms. Samriddhi Sarkar	Coalition Formation in Multi-agent Sys-	Awarded on 4th
		tems	August 2023
8	Ms. Arunita Das	Enhancement of Partitional Clustering	Awarded on 13th
		Techniques for Pathology Image Segmen-	January 2025
		tation	
9	Mr. Amit Paul	Location Prediction in Social Media using	Awarded on 27th
		Hybrid Modelling	March 2025
10	Mr. Tuhin Kr. Biswas	Coalition Formation of Multi-agent Sys-	Ongoing
		tems in Heterogeneous Environment	
11	Mr. Suman Nandi	Identifying Influential Spreaders through	Ongoing
		Network Analysis	
12	Ms. Srestha Sadhu	Influential Spreaders Identification Across	Ongoing
		a Diverse Range of Networks	
13	Ms. Nilanjana Saha	Mining Social Graphs to Identify Leaders	Ongoing
		in Network Activities	
14	Ms. Devlina Karmakar	_	Ongoing

Current/past research projects (National)				
Sl No.	Sponsoring Agency	Title of the Project		
1	Science Engineering & Research Board (SERB)	Coalition Formation in Multi Agent Systems: An		
	Sanction Order No. MTR/2023/000267	Algorithmic Approach		
2	Department of Science and Technology. Ref No.	Agent Based Algorithmic Approach for Model-		
	SB/FTP/ETA-407/2013	ing and Optimization of Indian Railway System		
3	Department of Science and Technology. Ref No.	Gender Advancement for Transforming Institu-		
	DST/KIRAN/GE-1/2019/17	tions (GATI) Pilot Project		
4	Department of Electronics and Information	Development of Personalized and Performance		
	Technology (DeitY). Ref No. 11(16)/2012-ELG.	based E-Learning tool for existing E-resources		
Current/past research projects (International)				
5	European Union (with Polytechnic of Porto, Por-	Erasmus + ICM (International Credit Mobility)		
	tugal)			
6	Department of Science and Technology. Ref No.	Empower SSE: A Linked Open Data Framework		
	DST/INTPORTUGAL/P-06/2017 (with Univer-	for the Empowerment of Social and Solidarity		
	sity of Minho and ISCAP Polytechnic of Porto,	Economy Agents		
	Portugal)			

### Lab to Land deliverables:

- http://www.eguru.org.in/:Apersonalized and performance based E-Learning tool.
- http://empowersse.net/ :Tool for empowerment of informal sector's worker of India.
- Railway Network Simulator for Indian Railway.

#### Award and recognition:

- Delegation to Seventh BRICS Working Group Meeting on ICT & HPC and WAIC 2023 (World AI Conference) at East China Normal university, Shanghai, P. R. China, during July 6-10, 2023.
- GATI (Gender Advancement for Transforming Institutions ) study visit to UK universities during 27th-31st March 2023 funded by DST, Govt of India, British Council and Advance HE UK.
- ASEM-DUO Professor Fellowship 2020 with Claude Beranard University Lyon 1, France, by European Union
- Delegation of young Indian leaders to "Discover Israel" program, Israel, 1st 7th Sept 2018.
- Delegation to First BRICS Working Group Meeting and Innovation Collaboration Forum on ICT and HPC, Guangzhou, 23rd -26th April 2017.
- Visvesvaray Young Faculty Research Fellowship Award in 2016, by Ministry of Electronics and Information Technology, Govt. of India.

Research Collaboration: National:

• Dr. Biswanath Dutta, Assistant Professor, Documentation Research and Training Centre (DRTC), Indian Statistical Institute (ISI), India.

### International:

- **Prof. Samir Aknine**, Department of Computer Science and Engineering, Claude Bernard University of Lyon 1, France
- Prof. Ana Alice Baptista, Algorithmic Research Centre, University of Minho, Portugal
- Dr. Mariana Curado Malta, Information System Department, ISCAP Polytechnic of Porto, Portugal
- **Prof. Frans Coenen**, Department of Computer Science and Engineering, University of Liverpool,UK
- **Prof. Viviana Mascardi**, DIBRIS Department of Computer Science, Bioengineering, Robotics and Systems Engineering, Faculty Member, University of Genova, Italy

#### Foreign visit for academic purpose:

- Thirty-ninth AAAI Conference on Artificial Intelligence (AAAI-25) in Philadelphia, USA, February 25- March 4, 2025.
- Delegation to Seventh BRICS Working Group Meeting on ICT & HPC and WAIC 2023 (World AI Conference) at East China Normal university, Shanghai, P. R. China, during July 6-10, 2023.
- Delegation to GATI (Gender Advancement for Transforming Institutions ) study visit to UK universities during 27th-31st March 2023 funded by DST, Govt of India, British Council and Advance HE UK.
- Research Visit to Polytechnic of Porto, Portugal under ERASMUS+ICM (International Credit Mobility) Project funded by Euoropean Union during January 16-20, 2023.
- Thirty-fourth AAAI Conference on Artificial Intelligence (AAAI-20) in New York, USA, February 7-12, 2020.
- AAAI 2019 Spring Symposium on Combining Machine Learning with Knowledge Engineering (AAAI-MAKE) at Stanford University, USA, March 25-29, 2019
- Thirty-third AAAI Conference on Artificial Intelligence (AAAI-19) at Honolulu Hawaii, USA, January 27- February 1, 2019
- Delegation to Discover Israel Program, Israel, in September 1-7, 2018
- 10th International Conference on Agents and Artificial Intelligence (ICAART) at Funchal, Madeira-Portugal, January 16-18, 2018.
- Collaborative research programme/visit to University of Minho, Guimaraes-Portugal, January 19-26, 2018.
- Collaborative research programme/visit to Guangzhou Milestone Software Co. Ltd, Guangzhou, Guanghzou, P. R. China, December 17-30, 2017

- Delegation to First BRICS Working Group Meeting and Innovation Collaboration Forum on ICT and HPC at Guanghzou, P.R. China, April 23-26, 2017
- The 12th Semantic Web Summer School (SSSW 2016) at Bertinoro, near Bologna, Italy, July 17-23, 2016.
- Research Visit to University of Genova, Italy, July 25-27, 2016.
- IEEE Region 10 TENCON 2016 Conference at Marina Bay Sands, Singapore, November 22-25, 2016
- International Conference on Principles and Practice of Multi-Agent Systems (PRIMA), Phuket Thailand, August 22-26, 2016.
- 12th International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS 2014), at Salamanca, Spain, June 4-6, 2014.
- Research Visit to BISITE (Bioinformatic, Intelligent Systems and Educational Technology) Research Group, University of Salamance, Spain, June 7-21, 2014.
- Research Visit at the Agents, Interaction and Complexity Group, School of Electronics and Computer Science, University of Southampton, UK, June 17-30, 2013.
- 15th European Agent System Summer School (EASSS-2013) at King's College London, UK, July 1-5, 2013.
- 24th International Conference on Software Engineering & Knowledge Engineering (SEKE'2012), Redwood City, San Francisco Bay, USA July 1-3, 2012.
- The 2010 International Conference on Software Engineering Research and Practice (SERP'10), Las Vegas, USA, July 12-15, 2010.
- IEEE Region 10 TENCON 2010 Conference at Fukuoka, Japan, November 21-24, 2010,
- The 8th WSEAS International Conference on Software Engineering, Parallel and Distributed Systems (SEPADS '09), at University of Cambridge, UK, February 21-23, 2009.

## **Publications:**

## Conferences

- Devlina Karmakar et al. "LP-GRU Model: A Graph Analytics Approach to Detect Misinformation Infiltrators in Online Communities". In: 2025 17th International Conference on COMmunication Systems and NETworks (COMSNETS). IEEE. 2025, pp. 862–866.
- [2] Suman Nandi, Giridhar Maji, and Animesh Dutta. "Exploring emerging spreaders through GCNbased link prediction and a novel centrality method". In: 2025 17th International Conference on COMmunication Systems and NETworks (COMSNETS). IEEE. 2025, pp. 1018–1022.
- [3] Srestha Sadhu et al. "TGNN-Bet: Approximation of Temporal Betweenness Centrality using Temporal Graph Neural Network". In: 2025 17th International Conference on COMmunication Systems and NETworks (COMSNETS). IEEE. 2025, pp. 911–915.

- [4] Srestha Sadhu et al. "TMGCN-ATT: A Traffic Prediction Model with Multi-Hop GCN and Self-Attention Mechanisms". In: 2025 17th International Conference on COMmunication Systems and NETworks (COMSNETS). IEEE. 2025, pp. 950–954.
- [5] Nilanjana Saha et al. "Hide Exposures by Removing Masterminds External Sources on Social Networ". In: Accepted in: The 39th Annual AAAI Conference on Artificial Intelligence 2025(AAAI). AAAI. 2025.
- [6] Sarjita Soo et al. "Identification of Phishing Mechanism of the Mastermind of Anomaly Community in the Social Networks". In: *2025 17th International Conference on COMmunication Systems and NETworks (COMSNETS)*. IEEE. 2025, pp. 926–930.
- [7] Tuhin Kumar Biswas, Ankit Roy, and Animesh Dutta. "Utility-Profit Based Large-Scale Simultaneous Coalition Structure Generation and Assignment in Constrained Environments". In: *Accepted in: The 23rd IEEE/WIC International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT)*. IEEE. 2024.
- [8] Tuhin Kumar Biswas et al. "Coalition formation for task allocation using multiple distance metrics (student abstract)". In: 38.21 (2024), pp. 23443–23444.
- [9] Suman Nandi and Animesh Dutta. "Local closeness gravity model to identify the vital nodes in complex networks". In: 16th International Conference on COMmunication Systems & NETworkS (COMSNETS). IEEE. 2024.
- [10] Suman Nandi, Dwiparna Mandal, and Animesh Dutta. "CCC: A spreader selection approach to control spreading dynamics in complex networks". In: Accepted in: The 23rd IEEE/WIC International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT). IEEE. 2024.
- [11] Srestha Sadhu et al. "LPC: A Local Path-Based Centrality Method for Identifying Influential Nodes in Temporal Networks". In: Accepted in: 8th International Conference on Data Science and Management of Data (12th ACM IKDD CODS and 30th COMAD). ACM. 2024.
- [12] Nilanjan Saha, Amrita Namtirtha, and Animesh Dutta. "CM-GCN: Crossbred Method based-Graph Convolution Networks for identifying influential spreaders from directed networks". In: 16th International Conference on COMmunication Systems & NETworkS (COMSNETS). IEEE. 2024.
- [13] Nilanjana Saha, Amrita Namtirtha, and Animesh Dutta. "Hide Mastermind using an Intermediate Connection on Social Network". In: 2024 IEEE 31st International Conference on High Performance Computing, Data and Analytics Workshop (HiPCW). IEEE. 2024, pp. 99–100.
- [14] Anju Bhuiya et al. "Semi-Global Circular Centrality to find Influential Spreaders". In: 2023 15th International Conference on COMmunication Systems & NETworkS (COMSNETS). IEEE. 2023, pp. 483– 485.
- [15] Koyena Chowdhury, Amit Paul, and Animesh Dutta. "CancelOut GCN Diffusion (CoutGCN): Finding the Influential Spreaders to Diffuse Information". In: 2023 15th International Conference on COMmunication Systems & NETworkS (COMSNETS). IEEE. 2023, pp. 368–372.
- [16] Arunita Das, Amrita Namtirtha, and Animesh Dutta. "Membership Adjusted Superpixel based Fuzzy C-Means for White Blood Cell Segmentation". In: 10th International Conference on Pattern Recognition and Machine Intelligence (PReMI'23). 2023.
- [17] Suman Nandi et al. "IS-PEW: identifying influential spreaders using potential edge weight in complex networks". In: *International Conference on Complex Networks and Their Applications*. Springer. 2023, pp. 309–320.

- [18] Srestha Sadhu, Anju Bhuiya, and Animesh Dutta. "DSGCN: A Degree Strength Graph Convolution Network for Identifying Influential Nodes in Complex Networks". In: 2023 IEEE/WIC International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT). IEEE. 2023, pp. 330–334.
- [19] Srestha Sadhu et al. "STC+ K: a Semi-global triangular and degree centrality method to identify influential spreaders in complex networks". In: 2023 IEEE/WIC International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT). IEEE. 2023, pp. 655–662.
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- [21] Samriddhi Sarkar et al. "P-tacos: A parallel tabu search algorithm for coalition structure generation". In: 2023 IEEE/WIC International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT). IEEE. 2023, pp. 367–371.
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- [25] Narayan Changder et al. "ODSS: Efficient Hybridization for Optimal Coalition Structure Generation." In: Proceedings of the 34th Annual AAAI Conference on Artificial Intelligence, New York, USA, February 7-12. 2020, pp. 7079–7086.
- [26] Krishnendu Kundu and Animesh Dutta. "Multi-agent Based Distributed MIS Selection for Dynamic Job Scheduling". In: The 2020 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT'20), Melbourne, Australia, December 14-17, IEEE, 2020, pp. 234–241.
- [27] Samriddhi Sarkar, Mariana Curado Malta, and Animesh Dutta. "A Coalition Formation Framework for Platform Cooperatives of Smallholder Farmers". In: *The 2020 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT'20), Melbourne, Australia, December 14-17, IEEE. 2020, pp. 803–809.*
- [28] Sangeeta Sen et al. "Labeled k-partite Graph for Statement Annotation in the Web of Data". In: The 2020 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT'20), Melbourne, Australia, December 14-17, IEEE, 2020, pp. 63–71.
- [29] Priyam Tyagi, Mariana Malta, and Animesh Dutta. "Hashing for cleaner reverse engineered queries for the Entity Comparison Problem in RDF Graphs". In: *The 2020 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT'20), Melbourne, Australia, December 14-17, IEEE, 2020, pp. 177–186.*
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- [31] Narayan Changder, Samir Aknine, and Animesh Dutta. "An Imperfect Algorithm for Coalition Structure Generation". In: Proceedings of the 33rd Annual AAAI Conference on Artificial Intelligence, Honolulu, Hawaii, USA, January 27 - February 1. Vol. 33. 2019, pp. 9923–9924.

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- [33] Narayan Changder, Samir Aknine, and Animesh Dutta. "Leveraging Symmetric Relations for Approximation Coalition Structure Generation". In: PRIMA 2019: The 22nd International Conference on Principles and Practice of Multi-Agent Systems. 2019.
- [34] Amit Paul and Animesh Dutta. "Duplicate Removal for Overlapping Clusters: A Study Using Social Media Data". In: AAAI 2019 Spring Symposium on Combining Machine Learning with Knowledge Engineering (AAAI-MAKE). 2019.
- [35] Amrita Namtirtha, Animesh Dutta, and Biswanath Dutta. "Weighted kshell degree neighborhood method: An approach independent of completeness of global network structure for identifying the influential spreaders". In: *Communication Systems & Networks (COMSNETS), 2018 10th International Conference on.* IEEE. 2018, pp. 81–88.
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- [45] Samriddhi Sarkar and Animesh Dutta. "Petri Net based modelling of railway intersection collision avoidance system". In: Intelligent Rail Transportation (ICIRT), 2016 IEEE International Conference on. IEEE. 2016, pp. 356–361.
- [46] Pratik Kumar Sinha and Animesh Dutta. "Multi-satellite task allocation algorithm for Earth observation". In: *Region 10 Conference (TENCON), 2016 IEEE*. IEEE. 2016, pp. 403–408.
- [47] Abhijit Adhikari et al. "A novel information theoretic approach for finding semantic similarity in WordNet". In: *TENCON 2015-2015 IEEE Region 10 Conference*. IEEE. 2015, pp. 1–6.

- [48] Bikash Choudhury, Subhrabrata Choudhury, and Animesh Dutta. "A Multi-agent Based Optimized Service Replication Scheme for SOC in Mobile Ad Hoc Environment". In: Web Intelligence and Intelligent Agent Technology (WI-IAT), 2015 IEEE/WIC/ACM International Conference on. Vol. 2. IEEE. 2015, pp. 43–46.
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- [51] Sangeeta Sen et al. "Hypergraph based query optimization". In: *Computer Communication and Informatics (ICCCI), 2015 International Conference on.* IEEE. 2015, pp. 1–8.
- [52] Bikash Choudhury et al. "A multi-agent based optimised server selection scheme for soc in pervasive environment". In: International Conference on Practical Applications of Agents and Multi-Agent Systems. Springer. 2014, pp. 50–61.
- [53] Poulami Dalapati et al. "Multi agent based railway scheduling and optimization". In: *TENCON* 2014-2014 IEEE Region 10 Conference. IEEE. 2014, pp. 1–6.
- [54] Ankit Bhardwaj, Supriyo Ghosh, and Animesh Dutta. "Modeling of multiagent based railway system using BDI logic". In: International Conference on Future Trends in Computing and Communication. 2013.
- [55] Animesh Dutta et al. "Virtual Medical Board: A distributed Bayesian agent based approach". In: Proceedings of the Twenty Fifth International Conference on Software Engineering & Knowledge Engineering. Knowledge Systems Institute. 2013, pp. 685–689.
- [56] Supriyo Ghosh, Animesh Dutta, and MdAlamgir Alam. "Multi-agent based railway track management system". In: Advance Computing Conference (IACC), 2013 IEEE 3rd International. IEEE. 2013, pp. 1408–1413.
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- [61] Sudipta Acharya, Prajna Devi Upadhyay, and Animesh Dutta. "Fault Tolerance Multi Agent coordination: A petri net based approach". In: *IJCA Proceedings on International Conference on Recent Advances and Future Trends in Information Technology (iRAFIT 2012).* 3. Foundation of Computer Science (FCS). 2012, pp. 15–20.

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- [64] Supriyo Ghosh and Animesh Dutta. "Ontology Driven Conceptual Graph Representation of Natural Language". In: 8th International Conference on Computing and Information Technology (IC2IT), Pattaya, Thailand. Jan. 2012.
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# Journal

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- [2] Suman Nandi et al. "Community-based voting approach to enhance the spreading dynamics by identifying a group of influential spreaders in complex networks". In: *Journal of Computational Science* (2025), p. 102540.
- [3] Amit Paul, Narayan Changder, and Animesh Dutta. "DSF-GAM: a location inference model in social network Twitter". In: *International Journal of Computers and Applications* (2025), pp. 1–21.

- [4] Suman Nandi et al. "IC-SNI: measuring nodes influential capability in complex networks through structural and neighboring information". In: *Knowledge and Information Systems* (2024), pp. 1–42. DOI: https://doi.org/10.1007/s10115-024-02262-9.
- [5] Srestha Sadhu et al. "Normalized strength-degree centrality: identifying influential spreaders for weighted network". In: *Social Network Analysis and Mining* 14.1 (2024), pp. 1–22.
- [6] Arunita Das, Amrita Namtirtha, and Animesh Dutta. "Levy-Cauchy arithmetic optimization algorithm combined with rough K-means for image segmentation". In: Applied Soft Computing (2023), p. 110268. ISSN: 1568-4946. DOI: https://doi.org/10.1016/j.asoc.2023. 110268. URL: https://www.sciencedirect.com/science/article/pii/ S1568494623002867.
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