

DR. SUJOY CHATTERJEE

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Topics of Research Interest

Judgment Analysis, Clustering Ensemble, Crowdsourcing, Machine learning, Data Mining, Multi-objective optimization.

Work Experience

- 2021-till-date **Assistant Professor**, Department of Informatics, School of Computer Science, University of Petroleum and Energy Studies (UPES-Dehradun), India.
- 2019-2020 **Post-doc Researcher**, Department of Industrial Engineering, Ulsan National Institute of Science and Technology (UNIST), South Korea.
- June-July, 2019 **Visiting Researcher**, DIBRIS Laboratory, University of Genova, Italy.
- 2018-2019 **Post-doc Researcher**, I3S Laboratory, Université Côte d'Azur (UCA), Sophia-Antipolis, France.
- 2013–2018 Full-time **Ph.D Student** in the Department of Computer Science and Engineering, University of Kalyani, India.

Education

- 2018 **Ph.D in Computer Science and Engineering**, Department of Computer Science and Engineering, University of Kalyani, India
Supervisor: Dr. Anirban Mukhopadhyay, Professor, Dept. of CSE, University of Kalyani
Dr. Malay Bhattacharyya, Assistant Professor, Machine Intelligence Unit, ISI Kolkata
- 2013 **M.Tech in Computer Science and Engineering**, Department of Computer Science and Engineering, University of Kalyani, India
- 2010 **Master of Computer Applications (MCA)**, Kalyani Government Engineering College, West Bengal University of Technology, India
- 2006 **BSc (Honours) in Physics**, Barrackpore Rastraguru Surendranath College, University of Calcutta, India
- 2003 **Higher Secondary**, Ranaghat Pal Chowdhury Higher Secondary School, West Bengal Council of Higher Secondary Education, India
- 2001 **Secondary**, Ranaghat Pal Chowdhury Higher Secondary School, West Bengal Board of Secondary Education, India

Technical Skill

Languages C, C++, Java, UNIX shell scripts, HTML, Javascript
Subjects Data Mining, DBMS, Advanced DBMS, Data structure, Soft computing, Artificial Intelligence
Mathematical Packages MATLAB
Database and Others MySQL, Oracle, Python, LaTeX

Scholarships and Awards

2020 Received the Best Paper Award from International Association for Educators and Researchers (IAER) in Third International Conference on Emerging Technologies in Computing (iCETiC - 2020) organized by London Metropolitan University, London, UK on August 19-20, 2020.

2019 Obtained an opportunity with fellowship for Postdoc position in UNIST South Korea.

2019 Selected within 15 Young Researchers for Full Travel Fellowship (USD 2500) as 1 month visiting scholar at Italy in Young Investigator Training Program (YITP), funded by ACRI Foundation, in IEEE International Conference on Artificial Intelligence and Knowledge Engineering (IEEE AIKE 2019), in Cagliari, Italy.

2018 Obtained an opportunity with fellowship for Research Associate position in NTU Singapore (not availed).

2018 Obtained an opportunity with fellowship for Postdoc position in University of Nice, France.

2017 Selected and Received Full Student Travel Scholarship for attending in 13th Conference on Web and Internet Economics (WINE - 2017) at Indian Institute of Science, Bangalore, India on December 17-20, 2017.

2017 Selected and Received International Student Travel Scholarship (USD 1000) from IEEE Technical Committee of Data Engineering (IEEE TCDE) to attend PhD Symposium in 33rd International Conference on Data Engineering (ICDE) at San Diego, USA on April 19-22, 2017.

2017 Received the Best Paper Award from Springer in First International Conference on Computational Intelligence, Communications, and Business Analytics (CICBA - 2017) at Calcutta Business School, Kolkata on March 24-25, 2017.

2017 Received International Student Travel Scholarship (USD 950) from Computing Community Consortium Catalyst (CCC) for attending AAAI Spring Symposium 2017 on AI for Social Good (AISOC) at Stanford University, Palo Alto, California, USA.

2017 Selected and received International Student Travel Scholarship (USD 970) from Association for the Advancement of Artificial Intelligence (AAAI) for attending AAAI Spring Symposium 2017 on AI for Social Good (AISOC) at Stanford University, Palo Alto, California, USA.

2017 Selected and Received Student Travel Scholarship from IKDD CoDS (co-located with COMAD 2017) for presenting work in Graduate Research Workshop at 4th ACM IKDD conferences on Data Sciences (CoDs - 2017) in IIT Madras, Chennai, India.

2015 – 2017 Received Institutional fellowship as Senior Research Fellow from University of Kalyani for pursuing research in the field of Computer Science and Engineering.

2015 Received ACM India Full Student Travel Fellowship for attending 2nd IKDD conferences on Data Sciences (CoDs - 2015) in Bangalore, India.

2013 – 2015 Received Institutional fellowship as Junior Research Fellow from University of Kalyani for pursuing research in the field of Computer Science and Engineering.

- 2012–2013 Received UGC scholarship for pursuing Masters Program in Computer Science & Engineering (Third position in University in respective of DGPA) on the basis of GATE-2011 score (Percentile 93.3).
- 2010 Received Half-free studentship during MCA studies (qualified in West Bengal Joint Entrance Examination for Computer Application (JECA-2007)) at Kalyani Govt Engineering College.
- 2003 Received silver medal and certificate for securing highest marks in English as an individual subject in Ranaghat zone in Madhyamik Examination 2001.
- 2003 National Merit Scholarship for securing good marks in Madhyamik Examination.

Participation in Seminar/Workshop

- 2016 Participated in two-day Workshop on Mathematical and Statistical Foundations for Machine learning Today, held in ISI, Kolkata on December 20-22, 2016 organized by ACM Student Chapter of ISI, Kolkata.
- 2016 Participated in 5-day Winter School on Optimization Techniques held in ISI, Kolkata on December 15-20, 2016 organized by ACMU ISI, Kolkata.
- 2015 Participated in one-day Workshop on Computational Intelligence and Methodologies and Applications (CIM-2015) held in University of Kalyani on March 21, 2015 organized by Research Scholar, Department of CSE, University of Kalyani.
- 2014 Participated in two-day Workshop on Big Data held in ISI, Kolkata on March 21, 2015 organized by ACM Student Chapter of ISI, Kolkata.
- 2014 Participated in one-day Workshop on Computational Methodologies and Applications (CMA-2014) held in University of Kalyani on March 21, 2014 organized by University of Kalyani.
- 2013 Participated in two-day Workshop on Computational Methodologies and Applications (CMA-2013) held in University of Kalyani on April 22-23, 2013 jointly organized by IEST, Shibpur and University of Kalyani.

Presentation of Paper/Poster in International Conferences in India

- 2020 Participated and presented my work “Multi-objective Consensus Clustering Framework for Flight Search Recommendation” in Proceedings of the ICTIS’2020 International Conference on Information and Communication Technology for Intelligent Systems, Ahmedabad, India, May 2020.
- 2017 Participated and presented my work “Judgment Analysis based on Crowdsourced Opinions” in Graduation bits of Thirteenth Conference on Web and Internet Economics (WINE - 2017), on December 17-20, 2017 at Indian Institute of Science, Bangalore, India [Lightning Talk and Poster].
- 2017 Participated and presented my work “Genetic Algorithm-based Matrix Factorization for Missing Value Prediction” in First International Conference on Computational Intelligence, Communications, and Business Analytics (CICBA - 2017), on March 24-25, 2017 at Kolkata, India [Oral] (**Selected for Best Paper Award from Springer**).
- 2017 Participated and presented my work “Dependent Judgment Analysis based on Crowdsourced Opinions” Graduate Research Workshop in 4th ACM India IKDD CoDs, on March 9-11, 2017 at IIT Madras, Chennai, India [Poster].
- 2015 Participated and presented my work “A Biclustering Approach for Crowd Judgment Analysis” 2nd ACM India IKDD CoDs, on March 18-21, 2015 at Bangalore, India [Poster].
- 2013 Participated and presented my work on “Clustering Ensemble: A Multiobjective Genetic Algorithm based Approach”, In First International Conference on Computational Intelligence:

Modeling, Techniques and Applications *CIMTA-2013*, on September 2013 at Kalyani, India [Oral].

Presentation of Paper/Poster in International Conferences abroad

- 2020 Participated and presented my work “A Multi-Level Consensus Clustering Framework for Customer Choice Modelling in Travel Industry ” at 3rd iCETiC’2020 International Conference on Emerging Technologies in Computing, London, United Kingdom, August 2020, LNICST Series, Springer International Publishing., on Aug 19-20, 2020 at London, UK. [Online]. [Online] ([Selected for Best Paper Award from IAER](#)).
- 2019 Participated and presented my work “Decision Making from Multiple Crowd Opinions” at 2nd IEEE International Conference on Artificial Intelligence and Knowledge Engineering (AIKE), on June 3-5, 2019 at Sardinia, Italy [Poster].
- 2018 Participated and presented my work “Multi-objective Clustering Ensemble for Varying Number of Clusters”, 10th International Workshop on Knowledge Acquisition Reuse & Evaluation tion (KARE 2018) at 14th International Conference on Signal and Image Processing (SITIS 2018), on November 27, 2018 at Las Palmas, Gran Canaria, Spain [Oral].
- 2017 Participated and presented my work “Judgment Analysis based on Crowdsourced Opinions”, PhD Symposium Track of 33rd IEEE International Conference on Data Engineering (ICDE 2017), on April 19-21, 2017 at San Diego, California, USA [Oral and Poster].
- 2017 Participated and presented my work on “Smart City Planning with Constrained Crowd Judgment Analysis”, AAAI Spring Symposium Series on AI for Social Good *AISOC 2017*, on March 27-29, 2017 at Stanford University, California, USA [Oral and Poster].
- 2017 Participated and presented a work on “ In Search of Health Doubles”, AAAI Spring Symposium Series on AI for Social Good *AISOC 2017*, on March 27-29, 2017 at Stanford University, California, USA [Oral and Poster].

Scholarly Activities

- 2014–2017 Acted as a reviewer in conferences: *iNIS 2017* (Bhopal, India), *CSI 2017* (Kolkata, India), *AIST 2017* (Moscow, Russia), *ISED 2017* (Kolkata, India), *IEEE WCCI 2016* (Vancouver, Canada), *ICACNI-2014* (Kolkata, India), *INDIA-2015* (Kalyani, India), *ICIC²-2016* (Kalyani, India), *AIST-2014* (Yeketerinburg, Russia), *AIST-2015* (Yeketerinburg, Russia).
- 2015 Organized the workshop on *Computational Intelligence and Methodolgy (CIM-2015)* held at University of Kalyani.
- 2015–2016 Acted as a committee member to organize the *Second International Conference on Information, Systems Design and Intelligent Application (INDIA-2015)* held at University of Kalyani, Kalyani, India on January, 2015 and *First International Conference on Intelligent Computing and Communication (ICIC²-2016)*, held at University of Kalyani, Kalyani, India on February, 2016.

Supervision on Masters Students

- 2015–2016 Guided Ms. Enaksmi Kundu (M.Tech Student) on project of “Clustering Ensemble”.
- 2016–2017 Guided Ms. Mahenoor Khatoon, Mr. Sudipto Sikdar (M.Tech Students) on project of “Recommender System”.
- 2017–2018 Guided Mr. Kushal Sanyal (M.Tech Student) on project of “Missing Value Prediction using Evolutionary Algorithm”.

Memberships in Professional Bodies

2016–2017 Student member of IEEE, USA (**Membership No. 94251023**).

Project Experiences

M.Tech Thesis

Title	Algorithms for Clustering Ensemble: Applications in Image Segmentation
Supervisor	Dr. Anirban Mukhopadhyay, Associate Professor of University of Kalyani.
Description	Clustering analysis has been widely applied in many real world application domains such as data compression, data mining and pattern recognition. However, it is in fact an illposed combinatorial optimization problem and no single clustering algorithm is able to achieve satisfactory clustering solutions for all types of data sets. Ensemble clustering corresponds to the scenario in which a number of different (input) clusterings have been obtained for a dataset and it is desired to find a single (consensus) clustering which is a better fit in some sense than the existing clusterings. In this work, ensemble of different clustering solutions is proposed using the concept of single objective genetic algorithm, multi-objective genetic algorithm and other deterministic algorithms. Then comparison is done in terms of different cluster validity indices with some other traditional clustering ensemble algorithm.

Publications

• Journals/Magazines

1. **S. Chatterjee** and A. Mukhopadhyay and M. Bhattacharyya, “Dependent Judgment Analysis: A Markov Chain based Approach for Aggregating Crowdsourced Opinions”, *Information Sciences*, 396:83-96, 2017, DOI: 10.1016/j.ins.2017.01.036. (**Latest IF: 5.9**) [**SCI Indexed**]
2. **S. Chatterjee** and M. Bhattacharyya, “Judgment Analysis of Crowdsourced Opinions using Biclustering”, *Information Sciences*, 375:138-154, 2017, DOI: 10.1016/j.ins.2016.09.036. (**Latest IF: 5.9**) [**SCI Indexed**]
3. **S. Chatterjee**, A. Mukhopadhyay and M. Bhattacharyya, “Constrained Crowd Judgment Analysis”, *ACM SIGWEB NEWSLETTER*, Autumn, 2017.
4. **S. Chatterjee** and A. Mukhopadhyay and M. Bhattacharyya, “A Weighted Rank Aggregation Approach towards Crowd Opinion Analysis”, *Knowledge-based Systems*, 149:47-60, DOI: 10.1016/j.knosys.2018.02.005, 2018 (**Latest IF: 5.9**) [**SCI Indexed**].
5. **S. Chatterjee** and M. Bhattacharyya, “Scalable Human Decision Making with Crowdsourcing”, *The Brunswik Society Newsletter*, 34, pp. 7-9, November, 2019 (ISSN: 2296-9926).
6. **S. Chatterjee** and A. Mukhopadhyay and M. Bhattacharyya, “A Review of Judgment Analysis Algorithms for Crowdsourced Opinions”, *IEEE Transactions on Knowledge and Data Engineering*, 32(7), pp. 1234-1248, 2020 (**Latest IF: 4.9**) [**SCI Indexed**].
7. S. Mridha and B. Sarkar and **S. Chatterjee** and M. Bhattacharyya, “ViSSa: Recognizing the Appropriateness of Videos on Social Media with On-demand Crowdsourcing”, *Information Processing & Management*, 2020 (**Latest IF: 4.78**) [**SCI Indexed**].
8. **S. Chatterjee** and S. Lim, “A Multi-objective Differential Evolutionary Method for Constrained Crowd Judgment Analysis.” *IEEE Access* 8 (2020): 87647-87664 (**Latest IF: 3.75**) [**SCIE Indexed**].

9. N. Pasquier and **S. Chatterjee**, “Customer Choice Modelling: A Multi-Level Consensus Clustering Approach”. In *Annals of Emerging Technologies in Computing*, 5(2):103-120, International Association for Educators and Researchers (IAER), April 2021, DOI 10.33166/AETiC.2021.02.009 [Scopus-Indexed]

• Conferences/Workshops

1. **S. Chatterjee**, S. Lim. “A TOPSIS-based Multi-objective Model for Constrained Crowd Judgment Analysis”, In *Eighth AAAI Human Computation and Crowdsourcing (HCOMP-2020)*, Hilversum, Netherland, October 26 - 29, 2020. [Works-in-Progress].
2. **S. Chatterjee**, N. Pasquier, “A Multi-Level Consensus Clustering Framework for Customer Choice Modelling in Travel Industry”, In *Proceedings of the 3rd (iCETiC’2020) International Conference on Emerging Technologies in Computing. iCETiC’2020*, London, United Kingdom, August 2020, LNICST Series, Springer International Publishing. (**Selected for Best Paper Award**)
3. **S. Chatterjee**, N. Pasquier, S. Nanty, M. A. Zuluaga. Multi-objective Consensus Clustering Framework for Flight Search Recommendation in Proceedings of the (**ICTIS’2020**) International Conference on Information and Communication Technology for Intelligent Systems, Ahmedabad, India, May 2020, Smart Innovation, Systems and Technologies series, Springer International Publishing.
4. **S. Chatterjee**, “Decision Making from Multiple Crowd Opinions” at 2nd IEEE International Conference on Artificial Intelligence and Knowledge Engineering (**IEEE AIKE**), on June 3-5, 2019 at Sardinia, Italy [Poster].
5. **S. Chatterjee**, N. Pasquier, A. Mukhopadhyay, “Multi-objective Clustering Ensemble for Varying Number of Clusters”, in 10th International Workshop on Knowledge Acquisition Reuse & Evaluation (KARE 2018) at 14th International Conference on Signal and Image Processing (**IEEE SITIS 2018**), Las Palmas, Gran Canaria, Spain, IEEE, November 27, 2018. (Accepted)
6. **S. Chatterjee**, “A Crowd-Powered Model for Identifying Negative Citations”, In *SIR 2018 Workshop collocated with 27th International Conference on Information and Knowledge Management (CIKM-2018)*, Turin, Italy, October 22, 2018.
7. **S. Chatterjee**, A. Mukhopadhyay and M. Bhattacharyya, “Quality Enhancement by Weighted Rank Aggregation of Crowd Opinion”, In *Fifth AAAI Human Computation and Crowdsourcing (HCOMP-2017)*, Quebec City, Canada, October 24 - 26, 2017. [Works-in-Progress].
8. S. Mridha, B. Sarkar, **S. Chatterjee** and M. Bhattacharyya, “Identifying Unsafe Videos on Online Public Media using Real-time Crowdsourcing”, In *Fifth AAAI Human Computation and Crowdsourcing (HCOMP-2017)*, Quebec City, Canada, October 24 - 26, 2017. [Works-in-Progress].
9. **S. Chatterjee** and M. Bhattacharyya, “A Probabilistic Approach to Group Decision Making”, In *Proceedings of the 36th ACM SIGCHI Conference on Human Factors in Computing System (CHI Extended Abstracts)*, Denver, USA, May 6-11, ACM Press, 2017 [**Top-most conference, Acceptance rate: 20%**].
10. **S. Chatterjee**, A. Mukhopadhyay and M. Bhattacharyya, “Judgment Analysis based on Crowdsourced Opinions”, In *Proceedings of 33rd IEEE International Conference on Data Engineering (ICDE 2017)* at California, USA on April 19-22, 2017. [**Top-most conference, Average Acceptance rate: 18.6%**]

11. **S. Chatterjee**, A. Mukhopadhyay and M. Bhattacharyya, “Smart City Planning with Constrained Crowd Judgment Analysis”, In *Proceedings of the AAAI 2017 Spring Symposium on AI for Social Good (AISOC)*, Palo Alto, USA, March 27-29, SS-17, AAAI Press, 2017.
12. **S. Chatterjee** and A. Mukhopadhyay, “Genetic Algorithm-based Matrix Factorization for Missing Value Prediction”, In *Proceedings of the 1st International Conference on Computational Intelligence, Communications, and Business Analytics (CICBA 2017)*, Kolkata, India, March 24-25, Springer CCIS, 2017. **(Selected for Best Paper Award from Springer)**
13. A. Dash, **S. Chatterjee**, T. Prasad and M. Bhattacharyya, “Image Clustering without Ground Truth”, In *GroupSight Workshop collocated with the Fourth AAAI Human Computation and Crowdsourcing (HCOMP-2016)*, Austin, USA, November 03, 2016. [Cited by: 1]
14. **S. Chatterjee**, E. Kundu and A. Mukhopadhyay, “A Markov Chain based Ensemble Method for Crowdsourced Clustering”, In *Fourth AAAI Conference on Human Computation and Crowdsourcing (HCOMP-2016)*, Austin, USA, October 31 - November 02, 2016. [Works-in-Progress] [Cited by: 1]
15. **S. Chatterjee**, A. Mukhopadhyay and M. Bhattacharyya, “Consensus of Dependent Opinions”, In *Fourth AAAI Conference on Human Computation and Crowdsourcing (HCOMP-2016)*, Austin, USA, October 31 - November 02, 2016. [Works-in-Progress] [Cited by: 1]
16. **S. Chatterjee** and M. Bhattacharyya, “A Biclustering Approach for Crowd Judgment Analysis”, In *Proceedings of the 2nd ACM IKDD Conference on Data Sciences (CoDS 2015)*, Bangalore, India, March 18-21, pp. 118-119, ACM Press, 2015 [Poster] **[Acceptance rate: 39.5%]** [Cited by: 1].
17. **S. Chatterjee** and A. Mukhopadhyay, “Clustering Ensemble: A Multiobjective Genetic Algorithm based Approach”, In *First International Conference on Computational Intelligence: Modeling, Techniques and Applications (CIMTA-2013)*, Procedia Technology, Vol. 10, pp. 443-449, Elsevier, Kalyani, India, September 2013 [Cited by: 10].

• Peer-Reviewed Book Chapters

1. **S. Chatterjee**, A. Mukhopadhyay, “An Evolutionary Matrix Factorization Approach for Missing Value Prediction”, J. K. Mandal, S. Mukhopadhyay and P. Dutta (Eds.), In *Advances in Intelligent Computing of series entitled “Studies of Computational Intelligence”*, Springer Nature, 2018 [Appeared in the *International Conference on Computational Intelligence, Communications, and Business Analytics (CICBA 2017)*, Kolkata, India, March 24-25, Springer Nature, 2017].
2. **S. Chatterjee**, S. K. Mridha, S. Bhattacharyya, S. Shakhari and M. Bhattacharyya, “Dynamic Congestion Analysis for Better Traffic Management using Social Media”, S. Das and S. C. Satapathy (Eds.), In *Springer Smart Innovation, Systems and Technologies* 51, Vol. 2, Chapter 09, pp. 85-95, 2016, DOI: 10.1007/978-3-319-30927-9_9 (ISBN: 978-3-319-30926-2), 2016 [Appeared in the *International Conference on ICT for Intelligent Systems (ICTIS)*, Ahmedabad, India, November 28-29, 2015].

• Doctoral Consortium

1. **S. Chatterjee**, “Judgment Analysis based on Crowdsourced Opinions”, In *PhD Symposium in 33rd IEEE International Conference on Data Engineering (ICDE 2017)* at California, USA on April 19-22, 2017 [Oral and Poster] **((Only 4 students were selected for presentations))**.
2. **S. Chatterjee**, “Dependent Judgment Analysis based on Crowdsourced Opinions”, In *Graduate Research Workshop in 4th ACM IKDD Conference on Data Sciences (CoDs-2017)* at IIT Madras, India on March 9-11, 2017 [Poster].

• Graduating Bits

1. **S. Chatterjee**, “Judgment Analysis based on Crowdsourced Opinions”, In *Graduating bits of 13th Web and Internet Economics (WINE 2017)* at Indian Institute of Science, Bangalore, India on December 17-20, 2017 [Lightning Talk and Poster].

* Manuscript under Revision/Preparation

1. A. Dash, **S. Chatterjee**, T. Prasad and M. Bhattacharyya, “Crowdsourced Clustering”, (*Submitted in IEEE Transactions on Knowledge and Data Engineering*).
2. **S. Chatterjee** and A. Mukhopadhyay and M. Bhattacharyya, Multi-objective Formulation of Constrained Crowd Judgment Analysis (*Under final stage*).
3. **S. Chatterjee** and A. Mukhopadhyay and M. Bhattacharyya, A Markov Chain based Clustering Ensemble method (*Under final stage*).

Personal Details

Name	Sujoy Chatterjee
Father’s Name	Sanjoy Kr Chatterjee
Sex	Male
Marital Status	Single
Nationality	Indian
Languages	English, Bengali