



Miranda House

UNIVERSITY OF DELHI

Name: Seema Aggarwal

Department: Computer Science

Current Designation: Associate Professor

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Academic Qualifications (reverse chronological order):

- Ph.D., Department of Computer Science, University of Delhi 2013
- Master of Computer Applications (MCA), Department of Computer Science, University of Delhi 1992
- B.Sc. (Hons) Physics, St. Stephens College, University of Delhi 1989

Research Degree(s) (reverse chronological order):

Ph.D., Department of Computer Science, University of Delhi, 2013
(Thesis Title: Using Mutual Information for extracting Biclusters from Gene Expression Data)

Field of Specialization under the Subject/Discipline:

Data Analysis and Machine learning

Prior Experience (in Software Development Industry): About 3 years

Developed system software including intelligent SCSI device drivers, kernel debuggers, RAID and fault tolerant systems.

Total Teaching Experience:

29 years

Teaching at Miranda House since:

2-9-1995

List of Publications(reverse chronological order):

(Articles in referred/peer-reviewed/UGC Care journals/ Books/Book Chapters)

- G. Aggarwal , H. Ahuja, S. Narang, S. Aggarwal, 2024, Flood Vulnerability Index to aid Decision Making, TELKOMNIKA (Telecommunication, Computing, Electronics and Control) . 22(6), 1431-1442
- B. Gupta, M. M. Jose, S. Aggarwal, O. Ranjan, 2024, A Comprehensive Analysis of Long-term Trends in Temperature and Rainfall Patterns in Sikkim, India, Journal of Climate Change, 10(4), 1-8.
- M. Bhatia Grover, R. Gupta, P. R. Jain, S. Aggarwal, G. Aggarwal, A. Khattar, 2024, Evaluating Online Education in India: Insights from Teachers, Journal of Computational



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Analysis and Applications, 13(7), 374-382.

- B. Gupta, M. M. Jose, S. Aggarwal, 2024, Long-Term Seasonal and Annual Rainfall Trend Analysis of Giridih District, Jharkhand, India, Asian journal of water environment and pollution, 21(4), 73-81.
- G. Aggarwal, S. Aggarwal, 2024, Digital payment fraud: Detection and Prediction, International Journal of Innovation and Multidisciplinary Research, 4(2), 47-53.
- G. Aggarwal, M. Bansal, S. Aggarwal, 2024, Effect of Different MCDM Techniques and Weighting Mechanisms on Women Vulnerability Index, International journal of intelligent systems and applications in engineering, 12 (21s), 3291-3299.
- G. Aggarwal, S. Aggarwal, M. Bansal, 2024, A3-approximation algorithm for uniform capacitated facility location problem with penalties, Journal of Electrical Systems, 20(7s), 461-468.
- G. Aggarwal, M. Bansal, S. Aggarwal, 2024, Women Vulnerability Index (WVI): Multi Criteria Decision Making Approach, International journal of intelligent systems and applications in engineering, 12 (21s), 1232-1238.
- G. Aggarwal, S. Aggarwal, M. Bansal, 2024, How Good Is Local Search for Capacitated Facility Location Problem: An Experimental Study, International Journal on Recent and Innovation Trends in Computing and Communication, 12(1), 213-218.
- G. Aggarwal, M. Bansal, S. Aggarwal, 2023, Crime Against Women and Girls in Indian states: Analysis, Visualization and Prediction, International Journal of Innovation and Multidisciplinary Research, 3(4), 21-31.
- G. Aggarwal, M. Bansal, S. Aggarwal, 2023, BiETech: Bicluster Ensemble Techniques, Study, International Journal on Recent and Innovation Trends in Computing and Communication, 11(9), 4075-4088.
- Sella, N., Manchanda, D., Gupta, I., Bundela, P., Bansal, S., Aggarwal, S., Roy, B., Verma, M., Jolly, P. & Subramanyan, J. 2018. Use of the smartphone as a handy colorimeter. DU Journal of Undergraduate Research and Innovation 3 (2): 56-63
- N. Gupta and S. Aggarwal., 2010. MIB: Using Mutual Information for Biclustering gene expression data. Elsevier Journal of Pattern Recognition, 43(8), 2010, 2692-2697.
- N. Gupta and S. Aggarwal., 2009. Modelling Biclustering as an optimization problem using mutual information In Proceedings of the International Conference on Methods and Models in Computer Science (ICM2CS09), Delhi, India, December 2009.
- N. Gupta and S. Aggarwal., 2008, MIBiClus: Mutual Information based Biclustering Algorithm. International Journal of Electrical and Computer Engineering, 3(2):102-106.
- N. Gupta and S. Aggarwal., 2008, MIB: Using Mutual Information for Biclustering High



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Dimensional Data. In Proceedings of the European Conference on Data Mining, Amsterdam, Netherlands, pages 119-123,

- N. Gupta and S. Aggarwal., 2008, SISA: Seeded Iterative Signature Algorithm for Biclustering Gene Expression Data. In Proceedings of the European Conference on Data Mining, Amsterdam, Netherlands, pages 124-128.

Research Guidance (reverse chronological order)

- Undergraduate Research Projects DSKC (D.S. Kothari Central Inter-disciplinary Research Facility; formerly D.S. Kothari Centre for Research and Innovation in Science Education), Miranda House, University of Delhi, Delhi, at the Summer Workshops 13 June 2024 to 25 July 2024.
- Undergraduate Research Projects DSKC (D.S. Kothari Central Inter-disciplinary Research Facility; formerly D.S. Kothari Centre for Research and Innovation in Science Education), Miranda House, University of Delhi, Delhi, at the Summer Workshops Flavor of Research, 15 June to 31 July 2021

Research Projects (reverse chronological order):

- Co PI in Delhi University Innovation Project - Mobile! My Lab Anytime Anywhere (Project Code MH 305), from 01 September 2015- October 2016.
- Worked under PI in Delhi University Research project titled "Analysis of Gene Expression Data" 2007-March 2010.

Administrative Responsibilities(reverse chronological order):

- Teacher-in-Charge, Department of Computer Science, Miranda House, July 2018 to April 2022, July 2014 to July 2016, July 2011 to July 2012, and July 1997 to July 2007.
- Member of the College Extended Admission Committee 1997-2007, 2011-2012, 2014-till date.
- Member of College IQAC team 2020-2022.
- Conceptualized, drafted the syllabus and was the Coordinator of Add-on course in "Data Science and Analytics" conducted by Department of Computer Science, 2018-till date.
- Coordinator of Add-on course in "Operations Research" conducted by Department of Computer Science and Mathematics 2015-2016.
- Nodal Officer of College for conduct of OBE for odd semester 2021.
- Member of NIRF task force 2017-2022.
- NAAC Coordinator for Computer Science Department, Miranda House, 2021.



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- Member of the editorial team for NAAC 2021.
- Website and connectivity committee 2019- continuing.
- Member of the selection committee for appointment of lab staff, adhoc and guest faculty in computer science department.
- As DBT Star Coordinator (2011-2012), conducted the following workshops for students of Department of Computer Science, Miranda House
 - Robotics: Touching Lives (9 April and 10 April, 2012)
 - Scientific Visualization of Life Systems (23 March and 24 March, 2012)
- NSS Program Officer and in charge, NSS Unit: 1996-99.

Seminars/Workshops/Conferences attended (reverse chronological order):

- One day workshop on Artificial Intelligence and Machine Learning, organized by JNRN Vidyapeeth and Pantech E Learning Pvt. Ltd. on 19 June 2024.
- FDP on AI in Education organized by TLC Ramanujan College, University of Delhi and SGGCC under PMMMNMTT, 29 March 2024 – 04 April 2024
- FDP on Cyber Security, High Performance Computing, AI/ML and GenAI organized by DUCC, University of Delhi, 04 October – 06 October.
- Online FDP on Python with Data Analytics organized by TLC Ramanujan College and MAIT under PMMMNMTT, 07 August – 13 August 2023 (1 week)
- Online FDP on Mathematical Computing in Python organized by Department of Mathematics, Miranda House, University of Delhi, 20 July – 23 July 2023 (5 days)
- Online FDP Python: Essentials, Programming and Analytics organized by University of Delhi in collaboration with GADTLC, SGTB Khalsa College, under PMMMNMTT, 27 October 2022 – 3 November 2022 (1 week)
- Course Workshop on “Digital Empowerment” organized by Value Addition Courses Committee (University of Delhi) in collaboration with Mahatma Hansraj Faculty Development Centre, Hansraj College, Oct 19, 2022
- Workshop titled “Implementation of NEP 2020: Implications for Undergraduate Colleges” by Dr. Leena Gahane at Miranda House, University of Delhi, 23 Sep 2022
- Online FDP “Natural Language Processing and It’s Applications” organized by Department of Computer Science P.G.D.A.V. College (M), University of Delhi under the Pandit Madan Mohan Malviya National Mission on Teachers and Training scheme of MHRD, Hansraj College (University of Delhi), 5 Mar 2022 - 11 Mar 2022 (1 week)



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- Coordinator for Add on course on Data Science and Analytics (using R language), Miranda House, DU, Sep 2019 -Jul 2022.
- Managing Online Classes and Co-Creating MOOCS" – organized by TLC, established under the Pandit Madan Mohan Malviya National Mission on Teachers and Training scheme of MHRD, Ramanujan College (University of Delhi), 18 May-3 Jun 2020 (Two Week).