

## Anal Acharya



1. BSc. (Hons.) in Mathematics, Vidyasagar College, **University of Calcutta**, 1993.
2. M.C.A, **Jadavpur University**, 1997.
3. M.E(I.T) ,**West Bengal University of Technology**, 2006.
4. Ph.D. (Tech.) in Computer Science & Engineering from **University of Calcutta** awarded on 13.07.2017.

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**Profile:** Anal Acharya is **Associate Professor** in the Department of Computer Science in St. Xavier's College, Kolkata. He was the **Head** of the **Department of Computer Science** from the period of **01.01.2009 to 30.06.2013**. His present research interests are **Educational and Social Data Mining**. He has **above 25 years of experience** in undergraduate and post graduate teaching. He has several accepted papers in International Conferences and Journals. He is a **Principal Supervisor** in the Department of Computer Science under **Ph.D. program** of St. Xavier's College, Kolkata. He is an invited member of the **Board of Studies** of Statistics Department of the college for M.Sc Data Science Course. He is also an invited member of the **Academic Council** of the college. He is a member of the **Board of Reviewers** for the Multi-disciplinary Research Journal of St. Xavier's College "Aviskaar - The Xaverian Journal of Research".

The details of his publications are given below:

### A. Papers in International Journals

| Serial | Paper Details  |
|--------|--|
| 1.     | Avishek Barman, Anal Acharya, Soumen Mukherjee, <i>Exploring the Role of XAI in Academic Performance Prediction: A Bibliographical Approach</i> , ZKG International, October 2024, Volume: IX, Issue: II. <b>(Indexed by SCI-E)</b>                    |
| 2.     | Debabrata Datta, Anal Acharya, Kashi Nath Dey, <i>Content Based Image Retrieval Through Materialized Views</i> , ZKG International, December 2023, Volume: VIII, Issue: II. <b>(Indexed by SCI-E)</b>  |
| 3.     | Debabrata Datta, Rush Guha, Neelabha Banerjee, Sohan Adhikary and Anal Acharya, <i>Examination Scheduler using a Linear Time Graph Coloring Algorithm</i> , ICTACT Journal on Soft Computing, July 2022, Volume: 12, Issue: 04. <b>(UGC CARE List)</b> |

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| 4.  | Debabrata Datta, Anweshan Mukherjee, Soumen Mukherjee, Arup Kr. Bhattacharjee, Anal Acharya, <i>Image Classification Using Model Ensembling</i> , ICTACT Journal on Image and Video Processing, May 2022, Volume: 12, Issue: 04. <b>(UGC CARE List)</b>  |
| 5.  | Srijita Majumdar, Debabrata Datta, Arpan Deyasi, Soumen Mukherjee, Arup Kumar Bhattacharjee, Anal Acharya, <i>Sarcasm Analysis and Mood Retention using NLP Techniques</i> , International Journal of Information Retrieval Research, IGI Global <b>(Indexed by E-SCI)</b>                         |
| 6.  | Aashijit Mukhopadhyay, Sneharshi Sur, Akash Ghosal, and Anal Acharya, <i>A New Score Generation Algorithm for Student Concept Map Evaluation</i> , Journal of Educational Technology Systems, <b>SAGE Publications. (UGC CARE List)</b>  |
| 7.  | Anal Acharya, Devadatta Sinha, <i>A Mixed Strategy for Collaborative Group Formation and Its Learning Outcomes</i> , Journal of Educational Technology Systems, <b>SAGE Publications. (UGC CARE List)</b>  |
| 8.  | Anal Acharya, Devadatta Sinha, <i>An Intelligent Web based system for Diagnosing Student Learning Problems using Concept Maps</i> : Journal of Educational Computing Research, SAGE Publishers. <b>(Indexed by SSCI, SCOPUS, EBSCO)</b>  |
| 9.  | Anal Acharya, Devadatta Sinha, <i>An Educational Data Mining Approach to Concept Map Construction for Web based Learning</i> , Informatica Economică vol. 21, no. 4/2017. <b>(Indexed by Google Scholar, EBSCO)</b>  |
| 10. | Anal Acharya, Devadatta Sinha: <i>Smart Concept Map Generation for Learning Using Class of Hash Functions</i> , Smart Computing Review, Volume 5, Issue. 4, pp 329-339, August 2015. <b>(Indexed by CrossRef, DBLP, DBPIA, Google Scholar, EBSCO)</b>  |
| 11. | Anal Acharya, Devadatta Sinha: <i>A Multi-Dimensional Assessment Model to Evaluate Web Based Learning Systems</i> , Informatica Economica, Volume 19, Issue 3, pp 32-45, September 2015. <b>(Indexed by Google Scholar, EBSCO)</b>   |
| 12. | Anal Acharya, Devadatta Sinha, Anurag Sarkar, Dibyabivya Seth, Kaustav Basu: <i>A 'Mixed' Approach to Smart Group Formation in Collaborative Learning</i> . Smart Computing Review, Volume 5, Issue. 5, pp 483-497, October 2015. <b>(Indexed by CrossRef, DBLP, DBPIA, Google Scholar, EBSCO)</b> |
| 13. | Anal Acharya, Devadatta Sinha: <i>A Study on the Use of Concept Maps in Web Based Learning</i> , International Journal of Computer Science and Information Technologies, Volume 6, Issue 5, pp. 4191-4200. <b>(Indexed by SciVerse SCOPUS, Google Scholar)</b>                                     |
| 14. | Anal Acharya, Devadatta Sinha : <i>Early Prediction of Students Performance using Machine Learning Techniques</i> , International Journal of Computer Applications, Volume 107, Issue 1, pp 37-43, December 2014. <b>(Indexed by Google Scholar, EBSCO)</b>  |
| 15. | Anal Acharya, Devadatta Sinha : <i>Application of Feature Selection Methods in Educational Data Mining</i> , International Journal of Computer Applications, Volume 103, Issue 2, pp 34-38, October 2014. <b>(Indexed by Google Scholar, EBSCO)</b>  |
| 16. | Anal Acharya, Devadatta Sinha : <i>Assessing the Quality of M-Learning Systems using ISO/IEC 25010</i> , International Journal of Advanced Computer Research, Volume-3, Number-3, Issue-12, pp 67-75, September 2013. <b>(Indexed by Google Scholar, EBSCO)</b>                                    |
| 17. | Anal Acharya, Soumen Mukherjee: <i>Designing A Re-Configurable Fractional Fourier Transform Architecture Using Systolic Array</i> , International Journal of Computer Science Issues, Vol. 7, Issue 6, pp 159-163, November 2010.  |

## B. Book Chapters

| Serial | Chapter Details  |
|--------|--|
| 1.     | Swarup Kumar Shaw, Vinayak Jaiswal, Sun Ghosh, Anal Acharya and Debabrata Datta, <i>Twitter Sentiment Analyser Using NLP Techniques</i> , Empowering Low-Resource Languages With NLP Solutions, IGI Global |

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| 2.  | Madhumita Choudhury, Durba Paul, Anal Acharya, Nisha Banerjee and Debabrata Datta, <i>Face Mask and Social Distancing Detection in Real Time</i> , Perspectives on Social Welfare Applications' Optimization and Enhanced Computer Applications, IGI Global.   |
| 3.  | Debabrata Datta, Anal Acharya, Kwanan Mondal, Meghna Mondal and Tanushree Sarkar, Customer Segmentation Using K-Means Algorithm, Navigating Organizational Behavior in the Digital Age With AI, IGI Global   |
| 4.  | Soumili Dey, Suchandra Datta, Rohan Das, Debabrata Datta and Anal Acharya, <i>Crime Analysis on Spatial Domain Using Machine Learning</i> , Artificial Intelligence for Societal Development and Global Well-Being, IGI Global.  |
| 5.  | Anweshan Mukherjee, Rajarshi Ghosh, Ashwin Gupta, Debabrata Datta and Anal Acharya, <i>Sentiment Analysis Using LSTM</i> , Encyclopedia of Data Science and Machine Learning, IGI Global.  |
| 6.  | Anal Acharya, Madhurima Ghosh, Saran Jha, <i>Automated Detection and Removal of Cycles in a Concept Map</i> , Advancing Online Course Design and Pedagogy for the 21st Century Learning Environment, IGI Global.   |
| 7.  | Soumili Dey, Suchandra Datta, Anal Acharya, and Debabrata Datta, <i>Blended Learning: Is it the way ahead?</i> Digital Pedagogies and the Transformation of Language Education, IGI Global   |
| 8   | Anal Acharya, Soumen Mukherjee, Arup Kumar Bhattacharjee, Debabrata Datta, Arpan Deyasi, <i>COVID-19: Will it be a Game Changer in Higher Education in India?</i> , Data Science for Covid-19, Elsevier.   |
| 9.  | Soumili Dey, Suchandra Datta, Anal Acharya, and Debabrata Datta, <i>A Set of Empirical Models to Evaluate E-learning Web Sites and Their Comparison</i> , Computational Intelligence in Digital Pedagogy, Volume 197, Intelligent Systems Reference Library, Springer. (Indexed by SCOPUS, DBLP, zbMATH, SCImago). |
| 10. | Anal Acharya, Devadatta Sinha: <i>A Web based Collaborative Learning System using Concept Maps: Architecture and Evaluation</i> . Handbook of Research on Natural Computing for Optimization Problems, IGI Global.   |

### C. Papers presented in International Conferences

| Serial | Paper Details   |
|--------|---|
| 1.     | Anisha Mitra, Aakash Decosta, Nilanjana Roychoudhury and Anal Acharya, <i>Students' performance prediction using Educational data mining</i> , Lecture Notes in Electrical Engineering, International Conference on IoT and its Applications, NIT Jamshedpur, 26-27 December, 2020, Springer(2020). <b>(Indexed by SCOPUS, Springerlink)</b>                              |
| 2.     | Anal Acharya, Devadatta Sinha : <i>A Concept Map Approach to Supporting Diagnostic and Remedial Learning Activities</i> , Advanced Computing, Networking and Informatics (ICACNI 2014), St. Thomas College of Engineering and Technology, Volume 1, pp. 565-575, 25-27 June, 2014, Springer International Publishing (2014). <b>(Indexed by SCOPUS, Springerlink)</b>     |
| 3.     | Anal Acharya, Devadatta Sinha : <i>Construction of Automated Concept Map of Learning using Hashing Technique</i> , Frontiers in Intelligent Computing: Theory and Applications (FICTA 2014) , Volume 1, pp. 567- 578, 14-15 November 2014, Springer International Publishing (2015). <b>(Indexed by SCOPUS, Google Scholar, DBLP, Springerlink)</b>                       |
| 4.     | Anal Acharya, Devadatta Sinha : <i>A Weighted Concept Map Approach to Generate Learning Guidance in Science Courses</i> , Information Systems Design and Intelligent Applications (INDIA 2015) , Kalyani University, Volume 2, pp. 143-152, 8-9 January, 2015, Springer International Publishing (2015). <b>(Indexed by SCOPUS, Google Scholar, DBLP, Springerlink)</b> . |
| 5.     | Anal Acharya, Devadatta Sinha : <i>A Hierarchical Framework to evaluate the Learning</i>  |

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|     | <i>Characteristics of M-Learning</i> , First International Science and Technology Congress 2014 (IEMCONGRESS 2014), Institute Of Engineering and Management (IEM) , pp. 58-66 , August 28-29, 2014, Elsevier Science and Technology Procedia.   |
| 6.  | Anal Acharya, Devadatta Sinha : <i>Dimension reduction in distributed data mining using Wavelet Transforms</i> , Second International Conference on Computing and Systems (ICCS 2013), Burdwan University, pp. 214-217, September 21-22,2013,McGraw Hill Education.                             |
| 7.  | Anal Acharya, Devadatta Sinha: <i>Towards Reduction of Data Flow in a Distributed Network using Principal Component Analysis</i> , Advancement of Computing in Engineering Research (ACER 2013), March 22-23,2013.  |
| 8.  | Soumen Mukherjee, Anal Acharya, <i>An Efficient Reconfigurable Architecture for Fractional Fourier Transforms</i> , International Conference in Signals, Systems and Automation (ICSSA-09) , CGET, Anand, 28-29 December, 2009, pp. 85-88, Universal Publishers.                                |
| 9.  | Soumen Mukherjee, Debabrata Datta, Anal Acharya, <i>Patenting Software: An Ethical Issue</i> , International Conference on Business Ethics and Corporate Social Responsibilities (ICBECSR'09), KLMR, Belgaum, 3-5 December 2009, pp. 276-280, Macmillan Publishers.                             |
| 10. | Anal Acharya, Soumen Mukherjee, <i>Modeling Value Chain Analysis of Distance Education using UML</i> , International Conference on Modeling, Optimization and Computing (ICMOC 2010), NIT Durgapur, October 28-30, 2010, American Institute Of Physics (AIP), AIP Conf. Proc. 1298, 658 (2010). |

#### D. Invited Lectures

| Serial | Lecture Details  |
|--------|--|
| 1.     | <i>Generation of Concept Maps using AI Techniques</i> delivered in “Artificial Intelligence and Digital Content Creation”, UGC sponsored seminar organized by EMMRC, 23rd August, 2024, St. Xavier’s College (Autonomous), Kolkata.                        |
| 2.     | <i>Use of Concept Maps in Collaborative Learning</i> delivered in Faculty Development Program “Recent Applications of Fuzzy Logic and Evolutionary Algorithms” on 26 <sup>th</sup> June, 2024, RCCIIT, Kolkata.  |
| 3.     | <i>Applications of Artificial Intelligence in Education</i> delivered on the occasion of 75 <sup>th</sup> Anniversary, , 8 <sup>th</sup> January, 2024, Dumdum Shree Aurobindo Vidya Mandir, Kolkata.  |
| 4.     | <i>Role of Digital Education in Sustainable Education</i> delivered on 17 <sup>th</sup> March, 2023, RCCIIT, Kolkata.  |
| 5.     | <i>Use of Artificial Intelligence in Digital Education</i> delivered in “Data Mining and Learning Analytics in Educational Research”, 28 <sup>th</sup> June,2022, organized by Department of Education, St. Xavier’s College (Autonomous), Kolkata.        |
| 6.     | <i>Use of Artificial Intelligence in Education</i> delivered on 22 <sup>nd</sup> October, 2020 as resource person in Tech Fest of Kristu Jayanti College, Bangalore.   |
| 7.     | <i>Concept Map Generation and Implementation in Personalized Environment</i> , delivered in “Impact of Digital Pedagogy in Technical Education in Covid and Post Covid Situation”, 22 <sup>nd</sup> July,2022, co-organized by MAKAUT and RCCIIT, Kolkata. |

#### E. Papers in Aviskar : A Xaverian Journal of Research

| Serial | Paper Details  |
|--------|--|
| 1.     | Anal Acharya, Devadatta Sinha, <i>A Comparative Study of Personalized and Collaborative Concept Map based Web Learning Systems</i> , Volume X, 2018. |
| 2.     | Kaustuvi Basu, Ayan Roy, Anal Acharya : <i>Dimension Reduction of Educational Data</i>   |

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|    | <i>Using Principal Component Analysis</i> , Volume VII, January,2015.   |
| 3. | Soumalik Roy, Kaushik Mitra, Prity Gupta, Anal Acharya : <i>An Obstacle Avoidance Algorithm using Fuzzy Neural Network</i> , Volume VI, January,2014. |
| 4. | Sumona Sil, Madhurima Bose, Sayanti Chakraborty, Anal Acharya : <i>A New Approach to e-mail Cleaning</i> , Volume V, January,2013.                    |

## F. Papers presented in National Conferences

| Serial | Paper Details   |
|--------|---|
| 1.     | Anal Acharya, Debabrata Datta, Soumen Mukherjee : <i>A Study on Use of ICT in Indian Education</i> " ICT in Higher Education-Opportunities and Challenges in the 21st Century, St.Xavier's College, Kolkata (Autonomous), 28th March, 2012 pp. 18-23.   |
| 2.     | Anal Acharya Soumen Mukherjee : <i>Designing Fractional Fourier Transforms using Systolic Arrays</i> , National Conference on Emerging Trends in Computer Science and Information Technology (ETCSIC) -2010, K K Wagh Institute of Engineering Education and Research , Nasik, 29-30th January 2010, pp. 163-166. |
| 3.     | Soumen Mukherjee, Anal Acharya and Moumita Ghosal, <i>An Object Based Design &amp; Implementation of Data Cleaning</i> , National Seminar on Data Mining & Decision Support, Vidyasagar University, 4-5 th March 2010, pp. 32-37.   |

## G. Seminars/Workshops attended

| Serial | Seminars/Workshop Details   |
|--------|---|
| 1.     | One day Workshop on "Matlab and Simulink" organized by <i>Department of Computer Science</i> in association with <i>Elmax Projects and Services</i> , held in St. Xavier's College, Kolkata on 18 <sup>th</sup> December, 2015.                       |
| 2.     | One day Workshop on "Linux Administration and Virtualization" organized by <i>Department of Computer Science</i> , held in St. Xavier's College, Kolkata on 22 <sup>nd</sup> December, 2014.  |
| 3.     | One day Workshop on "Information Retrieval" organized by <i>Department of Computer Science</i> in association with <i>Information Retrieval Society of India</i> , held in St. Xavier's College, Kolkata on 27 <sup>th</sup> March, 2011.             |
| 4.     | One day Workshop on "MATLAB and Simulink Toolboxes" organized by <i>Department of Computer Science</i> in association with <i>Computer Society of India Kolkata Chapter</i> , held in St. Xavier's College, Kolkata on 2 <sup>nd</sup> October, 2010. |
| 5.     | One day Seminar on "Modeling and Simulation Techniques for Computational Problems using MATLAB" organized by <i>Department of Computer Science</i> in association with <i>Computer Society of India Kolkata Chapter</i> , held in St. Xavier's        |

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|    | College, Kolkata on 1 <sup>st</sup> October, 2010.  |
| 6. | One day Seminar on “Data Mining and Data Warehousing” organized by <i>Department of Computer Science</i> held in St. Xavier’s College, Kolkata on 31 <sup>st</sup> October, 2009. |
| 7. | Workshop on “Oracle 9i fundamentals & introduction to DBA 1” organized by <i>Oracle University</i> held in Bangalore, 22-28 <sup>th</sup> November, 2008.                         |
| 8. | Workshop on “Technology development in Indian Languages” organized by <i>Indian Statistical Institute</i> held in Kolkata, 19-23 <sup>th</sup> March, 2001.                       |