

## **CURRICULUM VITAE**

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### **AREAS OF INTEREST**

- Data Stream Processing
- Big Data Analytics
- Twin Support Vector Machine/ Support vector machine
- Complex Event Processing

### **EDUCATIONAL BACKGROUND**

Examination	Institution	Year	Division/Percentage Marks
Ph.D. (IT)	IIIT Allahabad, Uttar Pradesh	2011	-----
M.E. (Computer Science)	MNNIT Allahabad, Uttar Pradesh	2000	I Division
B.E. (Electrical Engineering)	Bhilai Institute of Technology, Ravi Shanker University, Chhattisgarh	1997	I Division
Higher Secondary	Vijaya Raje Girls School, Ujjain M. P. Board	1993	I Division
High School	Adarsh Girls School, Durg, Chhattisgarh M. P. Board	1991	I Division

### **LIST OF PUBLICATIONS**

#### **DETAILS OF INTERNATIONAL JOURNALS (Total=35)**

1. Shamshe Alam, Sanjay Kumar Sonbhadra, Sonali Agarwal, P. Nagabhushan, "Sample reduction using Farthest Boundary Point Estimation(FBPE) for one class support vector classifiers" Elsevier Editorial System for Knowledge Based Systems, Under Review.
2. Shamshe Alam, Sanjay Kumar Sonbhadra, Sonali Agarwal, P. Nagabhushan "One-Class Support Vector Classifiers: A Survey" Elsevier Editorial System for Knowledge Based Systems, Under Review.
3. Sayantan Nath, Sonali Agarwal "Evaluation of Knowledge Gaps for Mathematical Applications in Thermographic Image Processing Technique," has been accepted for publication in ACM Computing Surveys, 2016, 5 Year (Impact Factor :6.559.)

4. Divya Tomar and Sonali Agarwal, "A comparison on Multi-class Classification methods based on Least Squares Twin Support Vector Machine", Knowledge-Based Systems, Elsevier, Vol. 81, June 2015, Pages 131–147. (SCI Journal, Impact Factor: 3.011). [Citations:31]
5. Divya Tomar and Sonali Agarwal, "An effective Weighted Multi-class Least Squares Twin Support Vector Machine for Imbalanced data classification", International Journal of Computational Intelligence Systems, Taylor & Francis, Vol. 8, issue 4, July 2015, Pages 761–771. (SCI Journal, Impact Factor: 0.574).
6. Bakshi Rohit Prasad, Sonali Agarwal, "Critical Parameter Analysis of Vertical Hoeffding Tree for Optimized Performance using SAMOA" is accepted for publication in International Journal of Machine Learning and Cybernetics, Springer, ISSN: 1868-8071 (Print) 1868-808X (Online). Impact Factor: 1.699
7. Divya Tomar and Sonali Agarwal, "Twin Support Vector Machine for Multiple Instance Learning based on Bag Dissimilarities", published in Advances in Artificial Intelligence, Hindawi Journal, Volume 2016, Article ID 1269708, 18 pages, <http://dx.doi.org/10.1155/2016/1269708>.
8. Bakshi Rohit Prasad, Sonali Agarwal, "Stream Data Mining: Platforms, Algorithms, Performance Evaluators and Research Trends", published in International Journal of Data Base and Application (IJDTA) Vol.9, No.9 (2016), pp. 201-218 <http://dx.doi.org/10.14257/ijdta.2016.9.9.19>
9. Divya Tomar and Sonali Agarwal, "Leaf Recognition for Plant Classification using Direct Acyclic Graph Based Multi-Class Least Squares Twin Support Vector Machine", accepted in International Journal of Image and Graphics, 2016, 1650012 (2016) [17 pages] DOI: <http://dx.doi.org/10.1142/S0219467816500121>.
10. Bakshi Rohit Prasad, Sonali Agarwal, "Critical Parameter Analysis of Vertical Hoeffding Tree for Optimized Performance using SAMOA" is accepted for publication in International Journal of Machine Learning and Cybernetics, Springer, ISSN: 1868-8071 (Print) 1868-808X (Online).
11. Divya Tomar, Sonali Agarwal, "Prediction of Defective Software Modules Using Class Imbalance Learning" Published in Applied Computational Intelligence and Soft Computing, Hindawai, Volume 2016, Article ID 7658207, 12 pages, <http://dx.doi.org/10.1155/2016/7658207>
12. Harshal Singh, Divya Tomar and Sonali Agarwal, "Link Prediction for Authorship Association in Heterogeneous Network Using Streaming Classification", International Journal of Grid and Distributed Computing Vol. 9, No. 4(2016), pp.135-150.
13. Geetanjali Chaurasia, Sonali Agarwal "A Hybrid Approach of Clustering and Time-Aware Based Novel Test Case Prioritization Technique", published in International Journal of Database Theory and Application Vol.9, No.4 (2016), pp.23-44 <http://dx.doi.org/10.14257/ijdta.2016.9.4.02>
14. Bakshi Rohit Prasad, Sonali Agarwal, "Comparative Study of Big Data Computing and Storage Tools: A Review", published in International Journal of Data Base and Application (IJDTA) Vol.9, No.1 (2016), pp. 45-66 <http://dx.doi.org/10.14257/ijdta.2016.9.1.05>

15. Divya Tomar, Sonali Agarwal "Multiclass Least Squares Twin Support Vector Machine for Pattern Classification" published in International Journal of Data Base and Application (IJDTA) Volume 8, Issue 6 Pages pp.285-302 <http://dx.doi.org/10.14257/ijdt.2015.8.6.26>.
16. Anushree Priyadarshini, Sonali Agarwal "A Map Reduce based Support Vector Machine for Big Data Classification" published in International Journal of Data Base and Application (IJDTA) Volume 8 Issue 5 Pages pp. 77 - 98.
17. Divya Tomar, Sonali Agarwal "An effective Weighted Multi-class Least Squares Twin Support Vector Machine" for Imbalanced data classification" published in International Journal of Computational Intelligence Systems, Taylor & Francis, Vol. 8, issue 4, July 2015, Pages 761–771. **SCI Journal, Impact Factor=0.574**
18. Divya Tomar, Sonali Agarwal "A comparison on multi-class classification methods based on least squares twin support vector machine" published in Knowledge-Based Systems, Elsevier, Vol. 81, June 2015, Pages 131–147. **SCI Journal, Scopus indexed, Impact Factor=3.011**
19. Divya Tomar, Sonali Agarwal "Twin Support Vector Machine: A review from 2007 to 2014" published in Egyptian Informatics Journal, Elsevier, Vol. 16, issue 1, March 2015, Pages 55–69. **Scopus indexed, Impact Factor= 0.810**
20. Divya Tomar, Divya Ojha, Sonali Agarwal "An Emotion Detection System Based on Multi Least Squares Twin Support Vector Machine", published in Advances in Artificial Intelligence, Hindawi Publishing Corporation, Vol. 2014, Article ID 282659, 11 pages, 2014. doi:10.1155/2014/282659. **Acceptance Rate= 9%**
21. Divya Tomar, Sonali Agarwal "Hybrid Feature Selection Based Weighted Least Squares Twin Support Vector Machine Approach for Diagnosing Breast Cancer, Hepatitis, and Diabetes" published in Advances in Artificial Intelligence, Hindawi Publishing Corporation, Vol. 2015, Article ID 265637, 10 pages, 2015. doi:10.1155/2015/265637 **Acceptance Rate= 33%**
22. Bakshi Rohit Prasad, Sonali Agarwal "Handling Big Data Stream Analytics using SAMOA Framework - A Practical Experience " published in International Journal of Data Base and Application (IJDTA) Vol.7, No.4 (2014), pp. 197-208 <http://dx.doi.org/10.14257/ijdt.2014.7.4>.
23. Sonali Agarwal, Divya Tomar "A Survey on Pre-processing and Post-processing Techniques in Data Mining " published in International Journal of Data Base Theory and Application (IJDTA) Vol.7, No.4 (2014), pp.99-128 <http://dx.doi.org/10.14257/ijdt.2014.7.4.09>.
24. Sonali Agarwal, Divya Tomar "A Feature Selection Based Model for Software Defect Prediction" published in International Journal of Advanced Science and Technology Vol. 65 (2014), pp.39-58 <http://dx.doi.org/10.14257/ijast..2014.65.04>
25. Divya Tomar, Shubham Singhal, Sonali Agarwal, "Weighted Least Square Twin Support Vector Machine for Imbalanced Dataset" published in International Journal of Database Theory and Application Vol. 7, No. 2 (2014), pp.25-36 <http://dx.doi.org/10.14257/ijdt.2014.7.2.03>.

26. Divya Tomar, Sonali Agarwal, "Feature Selection based Least Square Twin Support Vector Machine for Diagnosis of Heart Disease"\_published in International Journal of Bio-Science and Bio-Technology Vol. 6, No.2 (2014), pp.69 [http://dx.doi.org/ 10.14257 /ijbsbt.2014.6.2.07](http://dx.doi.org/10.14257/ijbsbt.2014.6.2.07). **Scopus Indexed**
27. Divya Tomar, Sonali Agarwal, "A Survey of Data Mining approaches for Healthcare"\_published in International Journal of Bio-Science and Bio-Technology Vol.5, No.5 (2013), pp. 241-266 <http://dx.doi.org/10.14257/ijbsbt.2013.5.5.25>. **Scopus Indexed**
28. Sonali Agarwal, Ankur Agarwal, "Object oriented model for Bank Account Number Portability" International Journal of Conceptions on Computing and Information Technology Vol. 1, Issue. 1, November 2013; ISSN: 2345 – 9808
29. Sonali Agarwal, G. N. Pandey, and M. D. Tiwari, "Data Mining in Education: Data Classification and Decision Tree Approach," International Journal of e-Education, e-Business, e-Management and e-Learning, vol. 2, no. 2, pp. 140-144, 2012.
30. Vimal Upadhyay, Suchi Sharma, Sonali Agarwal "Inspection of wall thickness of pipes in petrochemical plants through WSN", Journal of Current Engineering Research, Jan. -Feb. 2012, Volume 2, Issue 1.
31. Sayantan Nath, Sonali Agarwal and Qasima Abbas Kazmi "Image Histogram Segmentation by Multi-Level Thresholding using Hill Climbing Algorithm" , International Journal of Computer Applications 35(1):63-72, December 2011. Published by Foundation of Computer Science, New York, USA.
32. Divya, Sonali Agarwal "Classification of Countries based on Macro Economic Variables using Fuzzy Support Vector Machine "\_ International Journal of Computer Applications (0975–8887)Volume 27 –No. 6, August 2011
33. Divya Tomar, Ruchi Arya, Sonali Agarwal " Prediction of Profitability of Industries using weighted SVR", International Journal on Computer Science and Engineering (IJCSSE), Volume 3, No.5, May 2011, ISSN 0975-3397.
34. Sonali Agarwal, Neera Singh and .G.N.Pandey "Implementation of Data Mining and Data Warehousing in E Governance", International Journal of Computer Applications 9(4):18-22, November 2010.Published By Foundation of Computer Science.
35. Sonali Agarwal, G. N. Pandey " Studies of E Governance in India Using Data Mining perspective ", Journal of Computing, volume 2, issue 10, October 2010, ISSN 2151-9617, <https://sites.google.com/site/journalofcomputing>.

#### **DETAILS OF INTERNATIONAL CONFERENCES (Total =59)**

1. Punn N.S., Agarwal S., "Testing Concept Drift Detection Technique on Data Stream" In: Mondal A., Gupta H., Srivastava J., Reddy P., Somayajulu D. (eds) Big Data Analytics. BDA 2018. Lecture Notes in Computer Science, vol 11297. Springer, Cham.
2. Gyayak Sanghi, Sagar Deshmukh, Nalin Kanungo, Bakshi Rohit Prasad, and Sonali Agarwal "Abnormal Motion Detection for Automated Video Surveillance System" accepted for

publication in 4th International Workshop on Big Data Analytics 2018 during 24-25th July 2018 at UTM Malaysia.

3. Sonali Agrawal, Sanjay Kumar Sonbhadra, Sonali Agarwal, "Favour prediction of Taxi services using real-time visualization", accepted for presentation in 2018 International Conference on Advances in Computing, Communications and Informatics (ICACCI) at PES Institute of Technology, South Campus, Bangalore, Karnataka, September 19-22, 2018.
4. Devender Kaushik, Bakshi Rohit Prasad, Sanjay Kumar Sonbhadra, Sonali Agarwal, "Post-Surgical Survival forecasting of breast cancer patient: a novel approach", accepted for presentation in 2018 International Conference on Advances in Computing, Communications and Informatics (ICACCI) at PES Institute of Technology, South Campus, Bangalore, Karnataka, September 19-22, 2018.
5. Dhvaj Verma, Sonali Agarwal, "Cardiac Arrhythmia Detection from Single-lead ECG using CNN and LSTM assisted by Oversampling", accepted for presentation in 2018 International Conference on Advances in Computing, Communications and Informatics (ICACCI) at PES Institute of Technology, South Campus, Bangalore, Karnataka, September 19-22, 2018.
6. Bharat Gupta, Pramod Kumar, Shivam Awasthi, Parshant Singh, Likhama Ram, Bakshi Rohit Prasad, Sonali Agarwal "Cross Domain Sentiment Analysis Using Transfer Learning" presented in 12th IEEE international Conference on Industrial and Information System 2017 (ICIIS-2017) at Faculty of Engineering, University of Peradeniya, Srilanka, 15-16 December 2017.
7. Ch. Sarath Chandra Reddy, K. Uday Kumar, J. Dheeraj Keshav, Bakshi Rohit Prasad, Sonali Agarwal, "Prediction of Star Ratings from Online Reviews", presented in TENCON 2017 - 2017 IEEE Region 10 Conference during 5 – 8 November 2017.
8. Vishal Chauhan, Ajay Pilaniya, Vishesh Middha, Arjit Gupta, Ujjain Bana, Bakshi Rohit Prasad, Sonali Agarwal, "Anomalous behavior detection in social networking", presented in 2017 8<sup>th</sup> International Conference on Computing, Communication and Networking Technologies (ICCCNT), during 3-5 July 2017 at IIT Delhi.
9. Gyayak Sanghi, Sagar Deshmukh, Nalin Kanungo, Bakshi Rohit Prasad, Sonali Agarwal, "Abnormal Motion Detection for Automated Video Surveillance System", presented in TENCON 2017 - 2017 IEEE Region 10 Conference during 5 – 8 November 2017.
10. Rohit Raj, Rajat Kumar Sahu, Biki Chaudhary, Bakshi Rohit Prasad and Sonali Agarwal "Real time Complex Event Processing and Analytics for Smart Building" presented in The Conference on Information and Communication Technology (CICT), IIITM Gwalior, India during November 3-5, 2017
11. A. Bharadwaju, Y. Pranay Kumar, K. Anudeep, A. Vamshi Krishna, Bakshi Rohit Prasad and Sonali Agarwal, Real Time Mining of Ego Networks for Exploring Social Associations The Conference on Information and Communication Technology (CICT), IIITM Gwalior, India during November 3-5, 2017
12. Maneesh Kumar Verma, Shankar Yadav, Bhoopesh Kumar Goyal, Bakshi Rohit Prasad and Sonali Agarwal, 'Phishing Website Detection using Neural Network and Deep Belief Network' presented in ICACNI 2017 during 1-3 Jun 2017 at NIT Goa, India.

13. Shaiwal Sachdev, Abhishek Agrawal, Shubham Bendarkar, Bakshi Rohit Prasad and Sonali Agarwal 'Movie Box-Office Gross Revenue Estimation, presented in ICACNI 2017 during 1-3 Jun 2017 at NIT Goa, India.
14. Ashish Kumar Gupta, Prashant Varshney, Abhishek Kumar, Bakshi Rohit Prasad, Sonali Agarwal, Evaluation of Map-Reduce based Distributed Parallel Machine Learning Algorithms, Presented in International Conference On Big Data And Cloud Computing - ICBDC 2017, Karunya University, Coimbatore during April 1-2, 2017.
15. Bharat Gupta<sup>1</sup>, Shivam Awasthi, Rudraksha Gupta, Likhama Ram, Pramod Kumar, Bakshi Rohit Prasad, Sonali Agarwal, "Taxi Travel Time Prediction using ensemble based Random Forest and Gradient Boosting model", Presented in International Conference On Big Data And Cloud Computing - ICBDC 2017, Karunya University, Coimbatore during April 1-2, 2017.
16. Prasad B. R., Bendale Unmesh Kishor, Agarwal Sonali, "Distributed Information Gain Theoretic Feature Selector using Spark", presented in 11th IEEE international Conference on Industrial and Information System 2016 (ICIIS-2016) at IIT Roorkee, 03-04 December 2016 .
17. Divya Tomar and Sonali Agarwal, "MIMLTWSVM: Twin Support Vector Machine for Multi-Instance Multi-Label learning", presented in 11th IEEE international Conference on Industrial and Information System 2016 (ICIIS-2016) at IIT Roorkee, 03-04 December 2016 .
18. Prasad, B. R., and Agarwal, S. "Distributed Feature Selection using Vertical Partitioning for High Dimensional Data", presented in the International Conference on Advances in Computing, Communications and Informatics (ICACCI-2016), LMNIT, Jaipur, India
19. Suchi Maheshwari, Sonali Agarwal "Three-way decision based Defect Prediction for Object Oriented Software", presented in the International Conference on Advances in Information Communication Technology & Computing (AICTC-2016), ACM, Bikaner, India.
20. Neha Garg, Sonali Agarwal, "Process Mining for Clinical Workflows", presented in the International Conference on Advances in Information Communication Technology & Computing (AICTC-2016), ACM, Bikaner, India.
21. Divya Tomar and Sonali Agarwal, "Multiple instance learning based on Twin Support Vector Machine" presented in International Conference on Computer, Communication and Computational Science, IC4S, 2016, Springer, Ajmer, India.
22. Prasad, B. R., and Agarwal, S. "Performance Analysis and Optimization of Spark Streaming Applications through Effective Control Parameters Tuning", published In proceedings of 4th ICACNI 2016, Springer, Rourkela, India.
23. Ayushi Thatola, Parul Prasad, Sonali Agarwal, "Growth and opportunities in E-commerce using social media text analytics: an exclusive study on twitter" is presented in the RDA's 18th International Conference on "Sustainable Growth & Innovations" at JAIPUR (India) during 26<sup>th</sup> & 27<sup>th</sup> March, 2016.
24. Vimal Upadhyay, Sonali Agarwal, "In-service pipeline inspection crawler" is presented in the first international conference on Intelligent Communication, control and Devices-2016, organized by the department of Electronics, Instrumentation and Control Engineering during 2nd & 3rd April 2016.

25. Divya Tomar, Sonali Agarwal, "A Multilabel approach using Binary Relevance and One-versus-Rest Least Squares Twin Support Vector Machine for Scene Classification" is presented in the International Conference on Computational intelligence and communication technology (ICICT-2016), Ghaziabad, February 12-13.
26. Sonali Agarwal, Bakshi Rohit Prasad, "High Speed Streaming Data Analysis of Web Generated Log Streams" presented in 10th IEEE international Conference on Industrial and Information System 2015 (ICIIS-2015) at Faculty of Engineering, University of Peradeniya, Srilanka, 17-21 December 2015 .
27. Anubha Sharma, Manoj Kumar, Sonali Agarwal, "A Complete Survey on Software Architectural Styles and Patterns" presented in Fourth International Conference on Eco-friendly Computing and Communication Systems (ICECCS-2015) at National Institute of Technology, Kurukshetra, India, 7-8 December 2015 .
28. Geetanjali Chaurasia, Sonali Agarwal and Swarnima Singh Gautam, "Clustering Based Novel Test Case Prioritization Technique " presented in 4th Students' Conference on Engineering and Systems 2015 (SCES-2015) at MNNIT, Allahabad, India, November 6-8, 2015
29. Shwet Ketu, Bakshi Rohit Prasad, Sonali Agarwal, "Effect of Corpus Size Selection on Performance of Map-Reduce Based Distributed K-Means for Big Textual Data Clustering" accepted in Sixth International Conference on Computer and Communication Technology (ICCCT-2015) at MNNIT, Allahabad, India, 25 - 27 September 2015. Acceptance Rate : 33%
30. Shwet Ketu, Sonali Agarwal, "Performance Enhancement of Distributed K-Means Clustering for Big Data Analytics Through In-memory Computation" accepted in Eighth International Conference on Contemporary Computing, (IC3 – 2015) at JP Institute of Information Technology (JIIT), Noida, India, 20 - 22 August 2015. Acceptance Rate : 25%
31. Divya Tomar, Sonali Agarwal, "Multi-class Twin Support Vector Machine for Pattern Classification " presented in 3rd International Conference on Advanced Computing, Networking, and Informatics (ICACNI – 2015) at School of Computer Engineering, Kalinga Institute of Industrial Technology, (KIIT University), Orissa, India 23 - 25 June 2015. Acceptance Rate : 25%, Scopus indexed
32. Divya Tomar, Sonali Agarwal, "Multi-label Classifier for Emotion Recognition from Music "presented in 3rd International Conference on Advanced Computing, Networking, and Informatics (ICACNI – 2015) at School of Computer Engineering, Kalinga Institute of Industrial Technology, (KIIT University), Orissa, India 23 - 25 June 2015. Acceptance Rate : 25%, Scopus indexed
33. Divya Tomar, Sonali Agarwal, "Direct acyclic graph based multi-class twin support vector machine for pattern classification " In Proceedings of the Second ACM IKDD Conference on Data Sciences (CoDS '15). ACM, New York, NY, USA, 80-85. DOI=10.1145/2732587.2732598, <http://doi.acm.org/10.1145/2732587.2732598> Acceptance Rate : 12.28%
34. Bakshi Rohit Prasad, Sonali Agarwal, "Modeling Risk Prediction of Diabetes - A Preventive Measure" presented in 9th International Conference on Industrial and Information Systems

(ICIIS) at Atal Bihari Vajpayee Indian Institute of Information Technology and Management Gwalior, India during December 15-17 2014. Scopus indexed

35. Pradeep Kumar Saini, Divya Tomar, Sonali Agarwal, "High Numeric Coherent Association Rule Mining with a Particular Categorical Consequent Class Attribute" presented in 9th International Conference on Industrial and Information Systems (ICIIS) at Atal Bihari Vajpayee Indian Institute of Information Technology and Management Gwalior, India during December 15-17 2014. Scopus indexed
36. Divya Tomar, Bakshi Rohit Prasad, Sonali Agarwal, "An efficient Parkinson disease diagnosis system based on Least Squares Twin Support Vector Machine and Particle Swarm Optimization" presented in 9th International Conference on Industrial and Information Systems (ICIIS) at Atal Bihari Vajpayee Indian Institute of Information Technology and Management Gwalior, India during December 15-17 2014. Scopus indexed
37. Manish Shukla, Sonali Agarwal, "Hybrid Approach for Tuberculosis Data Classification Using Optimal Centroid Selection Based Clustering" presented in IEEE Student's Conference on Engineering and System, SCES-2014, MNNIT, May 28-30, 2014, Allahabad, India, Scopus indexed
38. Manoj Kumar, Anubha Sharma, Sonali Agarwal, "Clinical Decision Support System for Diabetes Disease Diagnosis Using Optimized Neural Network" presented in IEEE Student's Conference on Engineering and System, SCES-2014, MNNIT, May 28-30, 2014, Allahabad, India. Scopus indexed
39. Sonali Agarwal, Divya Tomar, Siddhant Verma, "Prediction of Software defects using Twin Support vector Machine" presented in IEEE Second International Conference on Information Systems and computer Networks ISCON 2014, March 1-2, 2014, Mathura, India. Scopus indexed
40. Divya Tomar, Sonali Agarwal, "Predictive Model for diabetic patients using Hybrid TSVM" presented in Fifth International Conference on Advances in Communication, Network, and Computing (CNC 2014), February 21-22, 2014, Chennai, India.
41. Neha Rathore, Divya Tomar, Sonali Agarwal, "Predicting the survivability of Breast Cancer patients using Ensemble approach" presented in International Conference on Issues and Challenges in Intelligent Computing Techniques (ICICT-2014), February 07-08, 2014, Ghaziabad, India. Scopus indexed
42. Sonali Agarwal, Sanjeev Kumar Sinha, Data Mining based Pervasive System Design for Intensive Care Unit" presented in 2014 International Conference on Computer Communication and Informatics (ICCCI -2014), January 03 – 05, 2014, Coimbatore, India. Scopus indexed
43. Subham Khanna, Sonali Agarwal, "An Integrated Approach towards the prediction of Likelihood of Diabetes", presented in the International Conference on Machine Intelligence Research and Advancement, (ICMIRA-2013), December 21-23, 2013, Katra, Jammu, India. Scopus indexed



44. Manoj Kumar, Manish Shukla, Sonali Agarwal, "A Hybrid Approach Of Requirement Engineering In Agile Software Development", presented in the International Conference on Machine Intelligence Research and Advancement, (ICMIRA-2013), December 21-23, 2013, Katra, Jammu, India. Scopus indexed
45. Akhilesh Kumar Yadav, Divya Tomar, Sonali Agarwal, "Clustering of Lung Cancer data using Foggy K-means" presented in 3rd International Conference on Recent trends in Information Technology (ICRTIT-2013), July 25-27, 2013, Chennai India. Scopus indexed
46. Manoj Kumar, Manish Sharma, Sonali Agarwal, G. N. Pandey, "An E Governance Model Using Cloud Computing Technology for Developing Countries", presented in 2013 International Conference on e-Learning, e-Business, Enterprise Information Systems, and e-Government (EEE'13), July 22-25, 2013, World Congress of Computer Science, Computer Engineering and Applied Computing, Las Vegas, Nevada
47. Sonali Agarwal, G.N. Pandey, "Human Computer Interface Design for Neonatal Intensive Care with Data Mining", presented in 4th International Conference on Intelligent Human Computer Interaction 2012 (IHCI 2012), IIT-Kharagpur. Scopus indexed
48. Sonali Agarwal, G.N. Pandey, M.D. Tiwari, "Aml based WSN application for Monitoring of Cardiac Condition in ICU", presented in Eighth International Conference on Wireless Communication and Sensor Networks, (WCSN-2012), Naresuan University, Phitsanulok, Thailand.
49. Ankur Agarwal, Sonali Agarwal "Object Oriented Concept for Inter-Banking Account Portability based on Unique Identification Number", is presented in International Conference on Engineering, Technology and Management (ICETM 2012), in Tirupati on September 7-8, 2012.
50. Sonali Agarwal, G.N. Pandey "Interoperability of Cloud Computing based e-Governance Factor for Rural E Healthcare Administration", presented in WORLDCOMP 2012 - The 2012 World Congress in Computer Science, Computer Engineering, and Applied Computing in Las Vegas, Nevada, USA on July 16-19, 2012.
51. Prashish Raj Bhandari, Rabi Chandra Shah, Sonali Agarwal, "Graph Database Model for Querying Searching and Updating", 2012 International conference on Software and Computer Application (ICSCA), Singapore.
52. Sonali Agarwal, G.N. Pandey, M.D. Tiwari "E Governance Data Mining: Pulse Polio Immunization Case Study" Proceedings of WORLDCOMP2011, July 18-21, Las Vegas Nevada USA.
53. Qasima Abbas Kazmi, Sayantan Nath, Sonali Agarwal "Hill Climbing Based Histogram Clustering for Coal Fire Monitoring" Proceedings of International Conference on Electronics Computer Technology, ICECT 2012, held during April 6-8, 2012, in Kanyakumari, India.
54. Sonali Agarwal, Divya "Weighted Support Vector Regression approach for Remote Healthcare monitoring" Proceedings of ICRTIT 2011, June 3-5, 2011, Anna University, Chennai.
55. Sonali Agarwal, G.N. Pandey, M.D. Tiwari "Data Mining in Education: Data Classification and Decision Tree Approach" Proceedings of IC4E 2011, January 7-9, 2011, NMITD, Mumbai.

56. Sonali Agarwal, Divya, G.N. Pandey, "SVM Based Context Awareness Using Body Area Sensor Network For Pervasive Healthcare Monitoring" Proceedings of IITM 2009, December 28-30, 2010, IIT Allahabad, India.
57. Sonali Agarwal, Neera Singh "Associating Crime and Intelligence: A Data Mining Approach for Identifying Risk Behavior and Reducing Social Disorder" Proceedings of INDIAS 2009, September 19-21, 2010, University of Allahabad, India.
58. Neera Singh, Sonali Agarwal "A study on environment changes leading to a resurgence of malaria in non endemic areas" Proceedings of INDIAS 2009, September 19-21, 2010, University of Allahabad, India
59. Sonali Agarwal "Knowledge Discovery in E Governance based on Data Mining" Proceedings of RAIT-09, February 6-7, 2009, ISM Dhanbad, India

### **DETAILS OF BOOK CHAPTERS (3)**

1. Gupta B. et al. (2018) Taxi Travel Time Prediction Using Ensemble-Based Random Forest and Gradient Boosting Model. In: Rajsingh E., Veerasamy J., Alavi A., Peter J. (eds) Advances in Big Data and Cloud Computing. Advances in Intelligent Systems and Computing, vol 645. Springer, Singapore
2. Gupta A.K., Varshney P., Kumar A., Prasad B.R., Agarwal S. (2018) Evaluation of MapReduce-Based Distributed Parallel Machine Learning Algorithms. In: Rajsingh E., Veerasamy J., Alavi A., Peter J. (eds) Advances in Big Data and Cloud Computing. Advances in Intelligent Systems and Computing, vol 645. Springer, Singapore
3. Prasad B.R., Agarwal S. (2018) Performance Analysis and Optimization of Spark Streaming Applications Through Effective Control Parameters Tuning. In: Sa P., Sahoo M., Murugappan M., Wu Y., Majhi B. (eds) Progress in Intelligent Computing Techniques: Theory, Practice, and Applications. Advances in Intelligent Systems and Computing, vol 719. Springer, Singapore

### **DETAILS OF NATIONAL WORKSHOPS**

1. Subham Khanna, Sonali Agarwal, "A Systematic Approach For The Classification of Diabetes Disease: Application of Iterative Learning Process" presented in National Seminar on Data Mining Applications in Healthcare, June 1-2, 2013, Indian Institute of Information Technology, Allahabad.
2. Divya, Akhilesh Yadav, Sonali Agarwal, "Cloud enabled Data Mining framework for Monitoring Healthcare especially for Rural India", presented in National Seminar on Data Mining Applications in Healthcare, June 1-2, 2013, Indian Institute of Information Technology, Allahabad.
3. Vijesh Patel, Sonali Agarwal, I.I.T. Allahabad, "Efficient algorithm for classification of Heart Disease patients using Association rule" presented in National Seminar on Data Mining Applications in Healthcare, June 1-2, 2013, Indian Institute of Information Technology, Allahabad.
4. Manoj Kumar, Manish Shukla, Sonali Agarwal, "Data mining for Pediatric Health Care" presented in National Seminar on Data Mining Applications in Healthcare, June 1-2, 2013, Indian Institute of Information Technology, Allahabad.

5. Mr. Manoj Kumar, Mr. Manish Sharma, Dr. Sonali Agarwal, "Optimization of Electricity Consumption using Ambient Intelligence", presented in National Seminar cum Workshop for Rural Empowerment, April 15-16, 2013, Rajiv Gandhi Institute of Information Technology, Amethi.
6. Dr. Sonali Agarwal, "A Data Mining based Energy Management for Load Prediction", presented in National Seminar on IT Applications in Energy Management, April 15-16, 2013, Rajiv Gandhi Institute of Information Technology, Amethi.
7. Dr. Sonali Agarwal, "Pervasive Telemedicine System with Data Mining," presented in National Seminar cum Workshop for Rural Empowerment, April 15-16, 2012, Rajiv Gandhi Institute of Information Technology, Amethi.

## **PRESENT EMPLOYMENT**

### **16<sup>th</sup> January 2019 to till date**

Working as Associate Professor in Information Technology Department of Indian Institute of Information Technology, Allahabad.

### **8<sup>th</sup> October 2011 to January 16<sup>th</sup> 2019**

Working as Assistant Professor in Information Technology Department of Indian Institute of Information Technology, Allahabad.

### **7<sup>th</sup> October 2009 to 7<sup>th</sup> October 2011**

Worked as Lecturer in Information Technology Division of Indian Institute of Information Technology, Allahabad

### **17<sup>th</sup> July 2007 to 7<sup>th</sup> October 2009**

Worked as Assistant Professor in Computer Science & Engineering Department of BBS College of Engineering & Technology, Allahabad (affiliated to UP Technical University).

### **2<sup>nd</sup> December 2002 to 17<sup>th</sup> July 2007**

Worked as Lecturer in Computer Science & Engineering Department of BBS College of Engineering & Technology, Allahabad (affiliated to UP Technical University).

### **October 2001 to 30<sup>th</sup> November 2002**

Worked as a Faculty member and Administrative officer in FACE-IT, which imparted computer education in collaboration with Motilal Nehru National Institute of Technology, Allahabad

## **INDUSTRY EXPERIENCE**

### **17<sup>th</sup> April 2000 to 12<sup>th</sup> February 2001**

Worked as a Software Developer and Project Leader in Srishti Infotech Pvt. Ltd. Allahabad, and developed various project using VB and ASP.

## **PART TIME/GUEST FACULTY TEACHING EXPERIENCE**

### **16<sup>th</sup> July 2001 to 30 November 2001**

Worked as a Part Time Lecturer in Computer Science & Engineering Department of Motilal Nehru National Institute of Technology, Allahabad

### **19th February 2000 to 14th April 2000**

Worked as a Guest Lecturer in Design Centre, Motilal Nehru National Institute of Technology, Allahabad

### **FUNDED PROJECT (NATIONAL)**

- **Real Time Complex Event Processing and Analytics for Smart Buildings**  
Project scheme/Agency : Call for proposal under the Interdisciplinary Cyber Physical Systems (ICPS) program. Government of India Ministry of Science & Technology Department of Science & Technology Interdisciplinary Cyber Physical Systems (ICPS) Division. (From February 2019 to January 2022)
- **Title of the Project: Stream Analytics for Processing Big Data in motion for Real Time Responses, Funding Agency, IIIT Allahabad. (From February 2018 to January 2021)**

### **FUNDED PROJECT (INTERNATIONAL)**

- **Title: Medical Cyber-Physical System for lifestyle diseases using Big Data Analytics**  
Project scheme/Agency: ASEAN-India Science & Technology Development Fund (AISTDF), ASEAN-India collaborative R&D program (From February 2018 to January 2021)
- **Title: Micro and Nano-Electronic Devices and Technologies for Environmental Monitoring**  
Name of Funding Agencies: Indo Swiss Joint Research Program (ISJRP)  
Nature of Funding: Full Financial Support was awarded to carry out joint research work and to gain knowledge regarding the recent research and experimental facility/work at EPFL. From December 2011 to January 2012
- **Title: Data Mining using OALP Techniques**  
Name of Funding Agencies: Liverpool John Moores University, Liverpool U.K. under Indo-UK REC Project, a joint collaboration in between School of Computing & Mathematical Science, LJMU Liverpool UK and Motilal Nehru National Institute of Technology, Allahabad.  
Nature of Funding: Free Training provided by School of Computing & Mathematical Science, LJMU, Liverpool UK.  
Duration: From November 1999 to February 2000

### **CONTRIBUTION MADE TO LABORATORY DEVELOPMENT ACTIVITIES**

- Established Big Data Analytics lab for research students including Apache Flink and Spark at Indian Institute of Information Technology, Allahabad, India.
- Established Software Engineering Research Lab for Masters students doing specialisation in Software Engineering.
- Established the Operating System Lab for Open Source Operating System using Minix OS at Indian Institute of Information Technology, Allahabad, India.
- Established Electrical Engineering Lab for B. Tech. Second Semester Course at Indian Institute of Information Technology, Allahabad, India.

- Supervised the establishment of four computer labs having more than 200 systems with Windows 2000 operating system and other required software at BBS College of Engineering & Technology, Allahabad, India.
- Developed many other labs as per Uttar Pradesh Technical University (UPTU) syllabus at BBS College of Engineering & Technology, Allahabad, India.

#### **ADMINISTRATIVE /OTHER EXPERIENCE**

- Managing day-to-day academic activities as Associate Professor in Information Technology Department of Indian Institute of Information Technology, Allahabad.
- Worked as one of the member of following Committees at Indian Institute of Information Technology, Allahabad.
  - (a) Proctorial Board
  - (b) Flying Squad
  - (c) Cultural Committee
- Worked as one of the member of following Administrative Committee at BBS College of Engineering & Technology, Allahabad
  - (a) Proctorial Board
  - (b) Flying Squad
  - (c) Extra-Curricular Activity Committee
- Appointed as a Head Examiner for the MBA Second Semester Examination of Uttar Pradesh Technical University, Lucknow for the paper of E Business (MBA 218) at June 2006
- Appointed as an Observer and Practical Examiner for the various examination of Uttar Pradesh Technical University, Lucknow from 2002 to 2009

#### **BOOK AUTHORED**

- E Governance Data Centre, Data Warehousing and Data Mining: Vision to Realities (2013), Sonali Agarwal, M.D. Tiwari, Iti Tiwari, River Publishers, Niels Jernes Vej 10, 9220 Aalborg, Denmark.

#### **WORKSHOP/CONFERENCE ORGANISED (As a convener)**

- Organizing special sessions/issue Special Session on "Non-parallel Support Vector Machine Classifiers" at IEEE SMC 2019, Bari, Italy.
- Organizing International Conference on Machine Intelligence and Signal Processing (MISP-2019) will be held at Indian Institute of Technology, Allahabad, India, on September 7-10, 2019.
- Conducted self-financed short-term course titled: Real-Time Stream Analytics and Machine Learning for Cyber-Physical Systems (RTSML4CPS). This proposed workshop will be hosted in conjunction with International Conference on Distributed Computing and Networking (ICDCN 2018) at IIT BHU During January 4-7, 2018.
- Conducted self-financed short term course titled: Parallel and Distributed Data Stream Mining, MHRD Scheme on Global Initiative on Academic Network(GIAN), during Dec 18 – Dec 22, 2017

- Conducted self-financed short-term course titled: Big Data Analytics: Recent Trends and Applications. Bilateral Workshop on “Big Data Analytics: Recent Trends and Applications” Jointly organized by IIIT Allahabad and University of Peradeniya, Sri Lanka during December 13-14, 2017.
- Organized two days national Seminar on Data Mining Applications in Healthcare, during June 1-2, 2013 at Indian Institute of Information Technology, Allahabad funded by CSIR, New Delhi.

### **Invited Lecture and Short Term Course Conducted**

- Visited Universitas Budi Luhur Jl. Jakarta Indonesia under ASEAN-India Science & Technology Development Fund (AISTDF) an ASEAN-India collaborative R&D program to work on a joint project titled Medical Cyber-Physical System for lifestyle diseases using Big Data Analytics".I will also offer a short course on Big Data and Machine Learning for Cyber-Physical System during my stay there at Universitas Budi Luhur Jl. Jakarta Indonesia., from 26 Jun, 2018 to 06 Jul, 2018

### **PhD SUPERVISION**

- Sayantan Nath (Fire Protection in Coal Mine through Image Processing) (Awarded-2017)
- Divya (Twin Support Vector Machine: Extension to different supervised learning frameworks and Applications) (Awarded-2017)
- Bakshi Rohit Prasad (Machine Learning for Big Data Analytics) (Ongoing)
- Sanjay Sonbhadra (Dimensionality reduction of distributed data for target specific mining) (Joint Supervision with Prof. P. Nagabhushan) (Ongoing)
- Sadhana Tiwari (Dynamic data management in Lifestyle diseases using CPS) (Ongoing)

### **Professional Services**

- PC Member: BDA2017, DAWAK2017, DAWAK 2018, ICIIS 2016, ICACCI 2017, ICACCI 2016, EDA 2017, CICT 2019
- Reviewer: ACM CSUR, JMLC, ICIIS 2017, ICIIS2016, BDA 2016, RAETCS2017, JSS, IJITDM, NEUCOM

### **MEMBERSHIP OF PROFESSIONAL SOCIETY**

- The Institute of Electrical and Electronics Engineers (IEEE)  
(Membership No. : 91192772)
- Association of Computing Machinery (ACM)  
(Membership No. : 3965400)
- Computer Society of India (CSI)  
(Membership No. : 01094684)
- International Economics Development Research Center (IEDRC)  
(Membership No. : 90080034)

**PERSONAL INFORMATION**

*Name* : *Sonali Agarwal*  
*Husband's Name* : *Mr. Ankur Agarwal*  
*Date of Birth* : *May 4<sup>th</sup>, 1976*  
*Marital Status* : *Married*  
*Passport No.* : *B 0680630*  
*Other Interests* : *Traveling, Reading and Listening Music.*

Date: 01 April , 2019

(Sonali Agarwal)