Name: : Dr. Sonal Amit Jain

Designation: Professor

PG Department of Computer Science and
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Courses taught: Mobile Application Development, Artificial Intelligence, Machine Learning, Intelligent Machines, Academic Writing, Web Data Management SAP: Basic Module, Computation Data Analysis, Computing using Python, Operating Systems & Linux, Computer Architecture & Organization, Computer based Optimization models, Computer Fundamentals and C, Data Base Management Systems (DBMS), Management Information Systems, Data and File Structures, Internet and HTML, Scientific & Statistical Computing, Advanced Database Management Systems, E-commerce and ASP, Basic Microcomputer Applications, Design & Analysis of Algorithms

Expertise: Artificial Intelligence, Machine Learning, Technology for Education

Summary of Scholastic and Research Activities:

Dr. Sonal Jain is Professor with over 22 years of academic experience. Before joining PG Department of Computer Science and Information Technology, Sardar Patel University, Vallabh Vidhyanagar, she was associated with GLS Institute of Computer Technology, Ahmedabad for 12 years and then served as Head, Department of Computer Science and Engineering, JK Lakshmipat University, Jaipur for 10 years. She has been trained for PBL Pedagogy at JK Lakshmipat University, for Project Based Learning Pedagogy by Master Class conducted by Prof. Siddharthan, Professor,- Olin College of Engineering, USA. She has co-developed Courses like Computational Data Analysis, Intelligent Automation and Business and Intelligent Machines. Dr. Jain has co-authored books including Personal Computer Software (Wiley India), Simplifying C (Dreamtech Publications) and six text books for Gujarat

State Education Board. Dr. Jain has several publications to her credit and she has presented research papers at National and International conferences.

She is currently guiding 2 PhD Scholars and two students has been awarded doctoral degree. She is recipient of Grant for project titled Early and Automated Diagnosis of Dysgraphia using Deep Neural Network by Science for Equity Empowerment and Development Division of the Department of Science and Technology, GoI, India as Co-Principal Investigator. She is recipient of Australian Innovation Patent grant, young scientist award for Initiatives Discoveries and Developments in the discipline of Information Retrieval by Venus International Foundation, Chennai, December 2016 and Vaigyanik Drashtikon Award at 4th Rajasthan Science Congress. She is Committee Member with IACSIT Singapore and reviewer of various conferences and journal of international repute. She has been visiting faculty at University of J.Seyle, Slovenia, Hungary and also visited Amsterdam university of Applied Sciences under faculty exchange programme at JKLU.

Her area of interest for Research, Training and Consultancy includes Artificial Intelligence, Machine Learning and Technology for Education.

Project
Early and Automated Diagnosis of Dysgraphia using Deep Neural Network by Science for Equity Empowerment and Development Division of the Department of Science and Technology, GoI. Total Cost: 18,00,000, Role: Co-PI

Special Issue: Guest Editor Role
Sunil Pathak, Sonal Jain, Samarjeet Borah, Special Issue on Scope and Future of Machine Learning, Artificial Intelligence, and Big Data Analytics in Healthcare, International Journal of Big Data and Analytics in Healthcare (IJBDAH) 6(1) (https://www.igi-global.com/ijbdah), https://www.igi-global.com/journals/open-access/table-of-contents/international-journal-big-data-analytics/126509, 2021

Journal Publications (Since 2020)

1. Bhandari, S., Pathak, S. & Jain, S.A. (2022), A Literature Review of Early-Stage Diabetic Retinopathy Detection Using Deep Learning and Evolutionary

Computing Techniques. Arch Computat Methods Eng (2022). https://doi.org/10.1007/s11831-022-09816-6 (SCI)

2. Jadwal, P.K., Jain, S., Pathak, S. et al. Improved resampling algorithm through a modified oversampling approach based on spectral clustering and SMOTE. Microsystems Technologies (2022). https://doi.org/10.1007/s00542-022-05287-8, (SCI)

3. Rijwani, P., & Jain, S, (2022), Software Effort Estimation Development from Neural Networks to Deep Learning Approaches, Journal of Cases on Information Technology (JCIT) 24(4), DOI: 10.4018/JCIT.296715, IGI Global Publishers, ISSN: 1548-7717, EISSN: 1548-7725, ESCI, Scopus

4. Jadwal, P.K., Pathak, S. & Jain, S. Analysis of clustering algorithms for credit risk evaluation using multiple correspondence analysis. Microsystems Technologies (2022). https://doi.org/10.1007/s00542-022-05310-y, (SCI)

5. Jadwal, P. K., Jain, S., & Agarwal, B. (2022). Clustering-based hybrid resampling techniques for social lending data. International Journal of Intelligent Systems Technologies and Applications, Special Issue on: Recent Advancements in Artificial Intelligence Systems and Their Applications, 20(3), 183-198. ISSN online, 1740-8873, ISSN print:1740-8865, doi: 10.1504/IJISTA.2021.120495 (Scopus)

6. Dubey, A. K., Gupta, U., Jain, S. (2021). Medical Data Clustering and Classification Using TLBO and Machine Learning Algorithms. CMC-Computers, Materials & Continua, Special Issue: Role of Machine Learning and Evolutionary Algorithms for Cancer Detection and Prediction, 70(3), pp.4523-4543, ISSN: 1546-2218 (Print), ISSN: 1546-2226 (Online), doi:10.32604/cmc.2022.021148 (SCI, Scopus)

7. Jadwal, P. K., Jain, S., & Agarwal, B. (2020). Spectral Clustering and Cost-Sensitive Deep Neural Network-Based Undersampling Approach for P2P Lending Data. International Journal of Information Technology and Web Engineering (IJITWE), 15(4), 37-52. doi:10.4018/IJITWE.2020100103 (Scopus, ESCI)

8. Jadwal, P., Jain, S.,Agrawal B., (2020), Financial credit risk evaluation model using machine learning based approach , Special Issue on: Role of Artificial intelligence in entrepreneurship and business management, World Review of Entrepreneurship, Management and Sustainable Development, ISSN: 1746-

0581, 16 (6), Inderscience Publishers, doi: 10.1504/WREMSD.2020.111383 (Scopus Indexed)

Articles / Chapters published in Books/ Full Papers in Conference Proceedings (Since 2019)

1. S. Bhandari, S. Pathak, S. Jain and V. Deshmukh, "A Review on Swarm intelligence & Evolutionary Algorithms based Approaches for Diabetic Retinopathy Detection," 2022 IEEE World Conference on Applied Intelligence and Computing (AIC), 2022, pp. 161-166, doi: 10.1109/AIC55036.2022.9848841.

2. Monish, E.S., Sharma, A., Agarwal, B., Jain, S. (2022). Game-Based Learning System for Improvising Student's Learning Effectively: A Survey. In: Balas, V.E., Sinha, G.R., Agarwal, B., Sharma, T.K., Dadheech, P., Mahrishi, M. (eds) Emerging Technologies in Computer Engineering: Cognitive Computing and Intelligent IoT. ICETCE 2022. Communications in Computer and Information Science, vol 1591. Springer, Cham. https://doi.org/10.1007/978-3-031-07012-9_1

3. Gupta U., Jain S., Kumawat D. (2021) Water Quality Based Zonal Classification of Rajasthan Using Clustering. In: Borah S., Pradhan R., Dey N., Gupta P. (eds) Soft Computing Techniques and Applications. Advances in Intelligent Systems and Computing, vol 1248. Springer, Singapore. https://doi.org/10.1007/978-981-15-7394-1_41

4. Pathak S., Jain S., Borah S. (2021) Clustering Algorithms for MANETs: A Review on Design and Development. In: Borah S., Pradhan R., Dey N., Gupta P. (eds) Soft Computing Techniques and Applications. Advances in Intelligent Systems and Computing, vol 1248. Springer, Singapore. https://doi.org/10.1007/978-981-15-7394-1_51

5. Dubey A.K., Gupta U., Jain S. (2020) Computational Measure of Cancer Using Data Mining and Optimization. In: Karrupusamy P., Chen J., Shi Y. (eds) Sustainable Communication Networks and Application. ICSCN 2019. Lecture Notes on Data Engineering and Communications Technologies, vol 39. Springer, Cham , DOI: https://doi.org/10.1007/978-3-030-34515-0_65, Print ISBN: 978-3-030-34514-3, Online ISBN: 978-3-030-34515-0 (Scopus Indexed)

6. Khangarot, Harshita and Jain, Sonal and Gupta, Umesh (2019), Framework for Managing Collection of E-Waste in Household (October 3, 2019). Proceedings of International Conference on Advancements in Computing & Management (ICACM) 2019,http://dx.doi.org/10.2139/ssrn.3463682

7. Jain S., Khangarot H., Singh S. (2019) Journal Recommendation System Using Content-Based Filtering. In: Kalita J., Balas V., Borah S., Pradhan R. (eds) Recent Developments in Machine Learning and Data Analytics. Advances in Intelligent Systems and Computing, vol 740., ISBN: 978-981-13-1279-3, September 2018, Springer, Singapore (Scopus Indexed)

8. Jadwal, Pankaj Kumar, Sonal Jain, Umesh Gupta, and Prashant Khanna (2019). Clustered Support Vector Machine for ATM Cash Repository Prediction. In Progress in Advanced Computing and Intelligent Engineering, pp. 189-201. Springer, Singapore, ISBN: 978-981-13-1707-1., https://www.springerprofessional.de/en/clustered-support-vector-machine-for-atm-cash-repository-predict/17704016