Dr Preeti Aggarwal
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A. General

Name: Dr Preeti Aggarwal

Affiliation: Computer Science and Engineering, University Institute of Engineering and Technology, Panjab University, Chandigarh

Correspondence Address: UIET, Panjab University South Campus, Sector-25, Chandigarh-160014, INDIA

B. Academic Qualification

Examination Passed	University/ Board	Year of Passing	% Marks	Division
Ph.D.	Panjab University, Chandigarh	2014	-	-
M.E. (Computer Sc. & Engg. (IT))	PEC University of Technology	2006	72%	1st
B.Tech	PTU, Jallandhar	2000	75.5%	1st, 9th in University
10+2	CBSE	1996	78.4%	3rd in School
Matriculation	Punjab School Education Board	1994	78.8%	Awarded with National Scholarship Scheme

C. PhD Thesis Title: Semantic and Content- based Medical Image Retrieval for Cancer Diagnosis

D. Research Interests: Image Processing, Machine Learning, Deep Learning, Biomedical Imaging

E. Teaching and Research Experience

Institution	Designation	Duration
UIET, Panjab University	Assistant Professor	Sept'2006-Till Now
PEC University of Technology	Lecturer	Jan'2002-Aug'2006
LogicSoft Int. Pvt. Ltd, New Delhi	Programmer	Nov'2000-Nov'2001
SUS Engg, College, Tangori	Lecturer	Aug'2000-Oct'2000

F. Sponsored Projects/Consultancy Work

1. Principal Investigator in project titled “Development of Indigenous handheld colposcope for image acquisition of pre-cancerous lesions of cervix in women attending OPD of PGIMER, Chandigarh” funded by DST, Chandigarh (Sept’22 – Sept’23). Budget Allocation Rs. 1.5Lacs
2. Co-Principal Investigator in project entitled “AI-Enabled low-cost handheld device for Offline Signature Verification” funded by Directorate of Forensic Science Service (DFSS), Ministry of Home Affairs, Govt. of India (May 2022). Budget Allocation Rs. 39Lacs
3. Co-Principal Investigator in project entitled “AI-enabled handheld device for quick detection of anemia and nutritional deficiencies using cutaneous cues” (Dec 2021-Dec 2022) by DST-BDTD, New Delhi Budget Allocation Rs. 19,96,619/-.
4. Co-Principal Investigator in project entitled “Multi-Modal Framework for Monitoring Active Fire Locations (AFL) and Precision in Allied Agricultural Activities using Communication Technologies” (March 2020-March 2022) by CC&BT, Ministry of Electronics and IT, New Delhi Government of India Budget Allocation: Rs 75.75 Lakhs (Ref No: 13(4)/2020/CC&BT)
5. Co-Principal Investigator in project entitled “NINJA: Non-invasive neonate jaundice estimation using artificial intelligence”, funded by ICMR for 2023-2025. Budget Allocation: Rs 75L.

G. Selected Publications

1. Maqbool, J.,Mann, T.S.,Kaur, N.,Kumar, M.,**Aggarwal P**, Saini, S.S (2023).SegCon: A Novel Deep Neural Network for Segmentation of Conjunctiva Region. Lecture Notes in Networks and Systems, 2023, 653 LNNS, pp. 719–730
2. Chawla, Shrutika & Kaur, Ravreet & **Aggarwal, Preeti**. (2023). Text classification framework for short text based on TFIDF-FastText. Multimedia Tools and Applications. 1-14. 10.1007/s11042-023-15211-5. (**IF: 3.6)**
3. Maqbool, J., **Aggarwal, P**., Kaur, R., Mittal, A., & Ganaie, I. A. (2023). Stock Prediction by Integrating Sentiment Scores of Financial News and MLP-Regressor: A Machine Learning Approach. Procedia Computer Science, 218, 1067-1078. https://doi.org/10.1016/j.procs.2023.01.086
4. Dhalla, S., Maqbool, J., Mann, T. S., Gupta, A., Mittal, A., **Aggarwal, P**., Saluja, K., Kumar, M., & Saini, S. S. (2023). Semantic segmentation of palpebral conjunctiva using predefined deep neural architectures for anemia detection. Procedia Computer Science, 218, 328-337. https://doi.org/10.1016/j.procs.2023.01.015
5. N. Marwah, **P. Aggarwal** and R. Kaur (2022). "Lung Cancer Survivability prediction with Recursive Feature Elimination using Random Forest and Ensemble Classifiers," 2022 2nd International Conference on Computing and Machine Intelligence (ICMI), 2022, pp. 1-5, doi: 10.1109/ICMI55296.2022.9873658.
6. G. Bawa, A. Sharma, H. Kumar, **P. Agarwal** and V. Mangat (2022), "A Hybrid V2S Scheme for Burned Area Identification with Agriculture Fire," 2022 IEEE, 8th International Conference on Advanced Computing and Communication Systems (ICACCS), 2022, pp. 1442-1447
7. Maqbool, J., **Aggarwal, P**., Kaur, R. (2022). Incorporating Financial News Sentiments and MLP-Regressor with Feed-Forward for Stock Market Prediction. In: Singh, P.K., Kolekar, M.H., Tanwar, S., Wierzchoń, S.T., Bhatnagar, R.K. (eds) Emerging Technologies for Computing, Communication and Smart Cities.

Lecture Notes in Electrical Engineering, vol 875, pp: 55-67, Springer, Singapore. https://doi.org/10.1007/978-981-19-0284-0_5

8. Chawla, S., **Aggarwal, P**., Kaur, R. (2022). Comparative Analysis of Semantic Similarity Word Embedding Techniques for Paraphrase Detection. In: Singh, P.K., Kolekar, M.H., Tanwar, S., Wierzchoń, S.T., Bhatnagar, R.K. (eds) Emerging Technologies for Computing, Communication and Smart Cities. Lecture Notes in Electrical Engineering, vol 875, pp:15-29, Springer, Singapore. https://doi.org/10.1007/978-981-19-0284-0_2
9. Prabhjot Kaur, Jagdish Chandra Joshi and **Preeti Aggarwal** (2022). Application of artificial neural network in development of multi-model ensemble classifier for avalanche hazard prediction over Himalaya. Abstract proceedings, The 3rd International conference on machine learning and intelligent systems (MLIS2021), 8-11 Nov'2021,pgno 41.
10. Prabhjot Kaur, Jagdish Chandra Joshi, **Preeti Agagrwal** (2021). A multi-model decision support system for avalanche hazard prediction over North West Himalaya; Natural Hazards (Springer);110(10), pgno: 563-585. **(IF-3.656)**
11. Vaneet Kour, **Preeti Aggarwal** and Ravreet Kaur (2020). A fast block-based technique to detect copy-move forgery in digital images. *Second International conference on Artificial Intelligence and data engineering-2020* (held on Dec 22-23, 2020 through virtual mode with Springer as a Publishing Partner).
12. Singh Thakur Agrimaa and **Aggarwal Preeti**, Correlation between Targeted Protein and Drug Side Effects: A Step towards the Prediction of Drug Toxicity (September 2, 2019). Proceedings of International Conference on Advancements in Computing & Management (ICACM) 2019, Available at SSRN: https://ssrn.com/abstract=3446550 or http://dx.doi.org/10.2139/ssrn.3446550
13. Sodhi P., **Aggarwal P.** (2020) Feature Selection Using SEER Data for the Survivability of Ovarian Cancer Patients. In: Sharma H., Govindan K., Poonia R., Kumar S., El-Medany W. (eds) Advances in Computing and Intelligent Systems. Algorithms for Intelligent Systems. Springer, Singapore.
14. Goyal K., **Aggarwal P.,** Kumar M. (2020) Prediction of Breast Cancer Recurrence: A Machine Learning Approach. In: Behera H., Nayak J., Naik B., Pelusi D. (eds) Computational Intelligence in Data Mining. Advances in Intelligent Systems and Computing, vol 990. Springer, Singapore.
15. Goyal K., Sodhi P., **Aggarwal P**., Kumar M. (2019) Comparative Analysis of Machine Learning Algorithms for Breast Cancer Prognosis. In: Krishna C., Dutta M., Kumar R. (eds) Proceedings of 2nd International Conference on Communication, Computing and Networking. Lecture Notes in Networks and Systems, vol 46. 727-734 Springer, Singapore.
16. Ritika, M. Kumar and **P. Aggarwal**, "A Graph based Keyword Extraction from Twitter using Node and Edge Weight," 2019 International Conference on Data Science and Engineering (ICDSE), Patna, India, 2019, pp. 35-39
17. Singh H., Kumar M., **Aggarwal P**. (2019) Approximation of Heaviest k-Subgraph Problem by Size Reduction of Input Graph. In: Krishna C., Dutta M., Kumar R. (eds) Proceedings of 2nd International Conference on Communication, Computing and Networking. Lecture Notes in Networks and Systems, vol 46. Springer, Singapore.
18. Singh H., Kumar M., **Aggarwal P.** (2018) Extraction and Sequencing of Keywords from Twitter. In: Satapathy S., Tavares J., Bhateja V., Mohanty J. (eds) Information and Decision Sciences. Advances in Intelligent Systems and Computing, vol 701. Springer, Singapore.
19. Priyanka Thakur, **Preeti Aggarwal**, Mamta Juneja (2018) Contagious disease detection in cereals crops and classification as 'solid' or 'undesirable': an

application of pattern recognition, image processing and machine learning algorithms, International Journal of Engineering & Technology, 7 (1.2) (2018) 160-165

20. Priyanka Thakur, **Preeti Aggarwal**, Mamta Juneja (2017) Plant Disease Detection and Classification using Image Processing: A Review. International Journal of Recent Research Aspects ISSN: 2349-7688, Vol. 4, Issue 3, Sept 2017, pp. 22-27
21. **Preeti Aggarwal**, Renu Vig, HK Sardana (2016). Lung cancer detection using fusion of medical knowledge and content based image retrieval for LIDC dataset, Journal of Medical Imaging and Health Informatics, 6(2), 297-311.
22. **Preeti Aggarwal**, HK Sardana, Renu Vig (2014). Content based image retrieval approach in creating an effective feature index for lung nodule detection with the inclusion of expert knowledge and proven pathology, Current Medical Imaging 10 (3), 178-204
23. **P Aggarwal**, HK Sardana, R Vig (2014). Classification of Annotated Pulmonary Nodules with Pathologically Confirmed Malignant, Benign and Metastasis Cases, International journal of imaging and robotics 12 (1), 22-38.
24. **P Aggarwal**, R Vig, HK Sardana (2013). Semantic and content-based medical image retrieval for lung cancer diagnosis with the inclusion of expert knowledge. Information Processing (ICIIP-2013), 346-351
25. **P Aggarwal**, HK Sardana, R Vig (2013). Correlation between Biopsy Confirmed Cases and Radiologist's Annotations in the Detection of Lung Nodules by Expanding the Diagnostic Database Using Content Based Image Retrieval, International Conference on Computer Analysis of Images and Patterns, Springer , 531-538.
26. **P Aggarwal,** HK Sardana, R Vig (2013). Content-based medical image retrieval using patient's semantics with proven pathology for lung cancer diagnosis, IET Digital Library, 345-351
27. **P Aggarwal**, R Vig, HK Sardana (2013). Largest versus smallest nodules marked by different radiologists in chest CT scans for lung cancer detection, International conference on image engineering, ICIE-2013 organized by IAENG at Hong Kong Vol1.
28. S Bhadoria, **P Aggarwal**, CG Dethe, R Vig (2012). Comparison of segmentation tools for multiple modalities in medical imaging, Journal of advances in information technology, Academy Publisher, Finland, Vol 3(4), 197-205.
29. Sonali Bhadoria, Meenakshi Madugunki, CG Dethe, **Preeti Aggarwal** (2012). Comparison of Color, texture and ICM features in CBIR system, Advanced materials research, Trans Tech Publications Ltd, Vol. 403, 13-19.
30. **P Aggarwal**, R Vig, S Bhadoria, CG Dethe (2011). Role of segmentation in medical imaging: A comparative study, International Journal of Computer Applications 975 (8887), 29.
31. **P Aggarwal**, HK Sardana, R Vig (2010). An efficient visualization and segmentation of lung CT scan images for early diagnosis of cancer, National Conference on Computational Instrumentation (NCCI-2010), CSIO Chandigarh, 19-20 March 2010.
32. **Preeti Aggarwal** and H. K Sardana "Enhancements in medicine by integrating content based image retrieval in computer-aided diagnosis", Proc. SPIE 7546, Second International Conference on Digital Image Processing, 75461X (26 February 2010)
33. **P Aggarwal**, HK Sardana, G Jindal (2009). Content based medical image retrieval: Theory, gaps and future directions, ICGST-GVIP J, Vol 9(2), 27-37.

H. Awards and Membership

1. Awarded with National Scholarship Scheme in 1994.
2. 9th in university (PTU, Jallandhar) in B.Tech (1996-2000)
3. Certificate of Appreciation from Punjab Engineering College, Chandigarh for organizing two days National Symposium on 'Emerging Trends in Networking and Mobile Communication' in 2003.
4. Lifetime member of IAENG (Member No: 129212)
5. Certificate of Appreciation from UIET, Panjab University for organizing two days National Conference on 'Emerging Trends in Wireless Communication and E-Security' in 2007.
6. Certificate of Appreciation from UIET, Panjab University for organizing two days National Symposium on 'Image Processing Analysis and Clinical Applications' in 2010.
7. Research publication award in 2015 by Panjab University, Chandigarh.
8. Certificate of Appreciation from UIET, Panjab University as a Member (Publication Committee) in organizing the 2nd International Conference on RAECS'2015.
9. Certificate of Appreciation from UIET, Panjab University for organizing one week TEQIP Sponsored workshop on 'Image Processing and Machine Leaning for Pattern Recognition' in 2016.
10. Certificate of appreciation from Certificate of Appreciation from UIET, Panjab University for organizing one week TEQIP Sponsored workshop on Machine Learning and Deep Learning: Applications in NLP, Computer Vision and IoT at UIET, Panjab University, Chandigarh from July 10-14, 2018
11. Awarded by Panjab University in 2015 for publishing research paper in SCI indexed journal.

I. Research Guidance

1. ME Thesis Guided

(i) Ms Priyanka Thakur (2017), **Title: " Fungal Disease Detection and Classification of Cereal Crops (Maize, Rice and Wheat) as ' Healthy' or 'Unhealthy'**

(ii) Ms Kashish Goyal, (2018), **" Title: " Predicting the Type of Breast Cancer Recurrence using Machine Learning Techniques"**

(iii) Ms Ritika Gosain, (2018), **Title: " A Graph based Keyword Extraction from Twitter using Node and Edge Weight"**

(iv) Mr Harkirat Singh (2019), **Title: " Extraction and Sequencing of Keywords from Twitter and Approximation of Heaviest k-Subgraph Problem"**

(v) Ms Agrimaa Thakur, (2019), **Title: " Drug Side Effects Prediction Based on Targeted Protein Structures Using Machine Learning"**

(vi) Ms Vaneet Kour, (2021), **Title: " Copy Move Forgery Detection in Digital Images Using Block-based Approach"**

(vii) Ms Shrutika Chawla (2022), Title: "A hybrid approach to detect short-text plagiarism"

(viii) Mr Junaid Maqbool (2022), Title:" Stock Price Prediction Using Different Combinations of Sentiment Scores and MLP-Regressor"

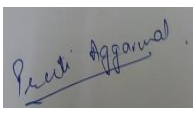
2. PhD Guidance (04 in progress)

(i) Ms Prakriti Sodhi, enrolled in 2016, **Title: "Design of Predictive Model for Evaluating Survivability of Ovarian Cancer."**

(ii) Ms Prabhjot Kaur, enrolled in 2019, **Title: "Development of Predictive System for Avalanche Forecasting Over Northwest Himalayas"**

(iii) Ms Uma Sharma, enrolled in 2021, enrolled in 2021, **Title: "Classification of Skin Lesions from Dermoscopic Images using Deep Learning."**

(iv) Mr Junaid Maqbool, enrolled in 2022.



Dr Preeti Aggarwal

Signature