Dr. Mukesh Kumar

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Works in Artificial Intelligence, Information Retrieval, Web Mining, Social Media Analytics,, Algorithms, Soft Computing

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List of Publications

1. S. Rani and M. Kumar, "Influential Node Detection and Ranking With Fusion of Heterogeneous Social Media Information", in *IEEE Transactions on Computational Social Systems, 2022 (Impact Factor= 4.747).*

2. Saakshi Kapoor, Mukesh Kumar, Manisha Kaushal, "Deep learning based whale detection from satellite imagery", Sustainable Computing: Informatics and Systems, Volume 38, 2023, *Elsevier (Impact Factor= 4.923).*

3. Muskan, Kumar M., KEST: A graph-based keyphrase extraction technique for tweets summarization using Markov Decision Process (2022)*, Expert Systems with Applications, 209, Art. No. 118110, Elsevier (Impact Factor= 8.665).*

4. Rani S., Kumar M., Heterogeneous Information Fusion based Topic Detection from Social Media Data (2022) *Information Systems Frontiers, Springer Nature (Impact Factor= 5.261).*

5. Ranking community detection algorithms for complex social networks using multilayer network design approach (2022), *International Journal of Web Information Systems, Emerald Insights (Scopus).*

6. S. Rani and M. Kumar, "Social media video summarization using multi-Visual features and Kohnen's Self Organizing Map", *Information Processing and Management, 57 (3), art. no. 102190, Elsevier (Impact Factor= 7.466)*

7. Studies on production, optimization and machine learning-based prediction of biosurfactant from Debaryomyces hansenii CBS767*. Int. J. Environ. Sci. Technol. (2021), Springer (Impact Factor= 3.519)*

8. The structure of word co-occurrence network for microblogs, Physica A Statistical Mechanics and its Applications, Vol. 512, pp 698-720, 2018, *Elsevier, (Impact Factor= 3.778.*

9. Identifying influential segments from word co-occurrence networks using AHP, *Cognitive Systems Research, Vol. 47, pp. 28-41, January 2018, Elsevier (Impact Factor = 4.541)*

10. Review on event detection techniques in social multimedia, Online Information Review, Vol. 40, No. 3, pp.347-361, 2016, *Emerald Group Publishing Limited ((Impact Factor = 2.901).*

11. Graph node rank based important keyword detection from Twitter", Applied Computing and Informatics, Emerald Insight, Vol. 17 No. 2, pp. 194-209, 2021 *(Scopus).*

12. Artificial Neuro-Fuzzy Inference System (ANFIS) based validation of laccase production using RSM model, Biocatalysis and Agricultural Biotechnology, Vol. 14, pp. 235-240, 2018, *Elsevier (Scopus)*

13. Multivariate short-term traffic flow prediction based on real-time expressway toll plaza data using non-parametric techniques (2022), *International Journal of Vehicle Information and Communication Systems, 7 (1), pp. 32 – 50 (Scopus).*

14. Topic modeling and its applications in materials science and engineering (2021) Materials Today: Proceedings, 45, pp. 5591-5596, Elsevier

15. Finding summaries to obtain event phrases from streaming Microblogs using Word Co-occurrence Network (2020) 2020 International Conference on COMmunication Systems and NETworkS, COMSNETS 2020, art. no. 9027299, pp. 200-206, IEEE

16. Prediction of Breast Cancer Recurrence: A Machine Learning Approach (2020) Advances in Intelligent Systems and Computing, 990, pp. 101-113.

17. A Graph based Keyword Extraction from Twitter using Node and Edge Weight (2019) 2019 International Conference on Data Science and Engineering, ICDSE 2019, art. no. 8971482, pp. 35-39, IEEE.

18. Comprehensive Study of Keyphrase Extraction Metrics for Uncertain User-Generated Data (2019) Lecture Notes in Electrical Engineering, 553, pp. 1191-1200.

19. Approximation of Heaviest k-Subgraph Problem by Size Reduction of Input Graph (2019) Lecture Notes in Networks and Systems, 46, pp. 599-605.

20. Comparative Analysis of Machine Learning Algorithms for Breast Cancer Prognosis (2019) Lecture Notes in Networks and Systems, 46, pp. 727-734.

21. TWCM Twitter Word Co-occurrence Model for Event Detection, *Procedia Computer Science, Volume 143, 2018, Pages 434-441, Elsevier.*

22. A Modular Approach for Social Media Text Normalization, Information and Decision Sciences, Advances in Intelligent Systems and Computing, Vol. 701, pp.187-195,2018, *Springer* (ISBN 9789811075629)

23. Extraction and Sequencing of Keywords from Twitter, Information and Decision Sciences, Advances in Intelligent Systems and Computing, Vol. 701, pp.177-185,2018, *Springer* (ISBN 9789811075629)

24. Local Tetra Pattern-Based Fruit Grading Using Different Classifiers, Intelligent Engineering Informatics, Advances in Intelligent Systems and Computing, Vol. 701, pp. 273-284,2018, *Springer* (ISBN 9789811075629)

25. Domain Ontology Graph Approach Using Markov Clustering Algorithm for Text Classification, Advances in Intelligent Systems and Computing, Vol. 632, pp.515--531, 2018, *Springer* (ISBN 9789811075629)

26. Evaluation and Comparison of Entity based search Implied by SVM and Neural Network, ICTCS-2016, proceedings to be published by *ACM* – ICPS, ISBN No 978-1-4503-3962-9.

27. Hybrid Focused Crawling Based Upon VSM Similarity, WordNet Semantics and Hub Score Learning, International Journal of Information and Management Sciences (IJIMS), Vol. 24, No. 3, pp. 249-263, ISSN 1017-1819, 2013.

28. Focused Crawling Based Upon TF-IDF Semantics and Hub Score Learning, published in Journal of Emerging Technologies in Web Intelligence, Vol 5, No 1, pp 70-77, ISSN 1798-0461, 2013.

29. Online e -Library Content Generation Using Focused Crawling, published by IEEE as proceedings of the International Symposium on Computational and Business Intelligence (ISCBI 2013), pp. 158-161, 2013.

30. Term-frequency Inverse-Document frequency Definition Semantic (TIDS) Based Focused Web Crawler, published by Springer (LNCS) in the book titled 'Global Trends in Information Systems and Software Applications', pp 31-36, 2012, ISBN 978-3-642-29215-6, 2012.

31. Learnable Focused Meta Crawling Through Web, published in Procedia Technology, *Elsevier*, Volume 6, pp 606-611, ISSN 2212-0173, 2012.

32. e -Library Content Generation Using WorldNet Tf-Idf Semantics, published by *Springer* Berlin Heidelberg in its book series Advances in Intelligent and Soft Computing (AISC), Volume 199, pp 221-227, ISBN 978-3-642-35314-7, 2012.

33. Learning Capable Focused Crawler for Information Technology Domain, published by International Journal of Computer Applications, Volume 43, No.23, ISSN 0975 – 8887, 2012.

34. Multilingual Context Ontology Rule Enhanced Focused Web Crawler, published by international Journal of Advances in Information Technology, Vol. 1, No. 1, ISSN 1798-2340, 2010.

35. Design of CORE Context Ontology Rule Enhanced Focused Web Crawler, published by ACM as proceedings of the International Conference on Advances in Computing, Communication and Control, pp 494-497, ISBN 978-1-60558-351-8, 2009.

36. LSI based relevance computation for topical web crawler, Journal of Emerging Technologies in Web Intelligence, Volume 5, Issue 4, November 2013, Pages 401-406.

37. Web usage mining An analysis, Journal of Emerging Technologies in Web Intelligence, Volume 5, Issue 3, August 2013, Pages 240-246.

38. Comparative analysis of IR based web service similarity measures using vector space model, Communications in Computer and Information Science, Springer-Verlag Berlin Heidelberg,Volume 270 CCIS, Issue PART II, 2012, Pages 752-760.

39. Medical diagnosis using generic intelligent agents, Communications in Computer and Information Science, Springer-Verlag Berlin Heidelberg, Volume 125 CCIS, 2011, Pages 41-48.

40. Consistency enforcement using ontology on web, Journal of Computers, Volume 5, Issue 10, October 2010, Pages 1520-1526

41. A Hybrid Revisit Policy for Web Search, Jounal of Advances in Information Technology, Volume 3, pp. 36-47.

42. A Meta Search Approach to Find Similarity between Web Pages Using Different Similarity Measures, Advances in Computing, Communication and Control Communications in Computer and Information Science, Springer-Verlag Berlin Heidelberg, Volume 125, 2011, pp 150-160.

43. Consistency Management and Content Editing Using Ontologies on Personalized Web, IACC 2009, pp. 1694-1696.

44. Focused Crawler Based Upon Efficient URL Queue Prioritizing Algorithm, IACC 2009, pp. 1697-1700

45. Spam Detection using KNN, Back Propagation and Recurrent Neural Network, International Journal of Engineering Research & Technology, Volume/Issue Volume. 4 - Issue. 09, September – 2015, e-ISSN 2278-0181.

Research Projects

1. Chief Investigator for Capacity Building and Research Entrepreneurship Centre in Artificial Intelligence, Big Data and IoT for SC/ST, Rs. 72.94 Lacs Ministry of Electronics and IT (MeitY), Govt. of India.

2. Chief Investigator for DRDO SASE CARS project on Acoustics Based Avalanche Detection, 9.93 Lacs for 2 Years.

3. Co-Principal Investigator for Multi-Modal Framework for Monitoring Active Fire Locations (AFL) and Precision in Allied Agricultural Activities using Communication Technologies, Rs. 81.25 Lacs, Ministry of Electronics and IT (MeitY), Govt. of India.

4. Co-Principal Investigator for Design of Monitoring & Surveillance System for Active Fire Locations in Haryana, Rs. 5.5 Lacs ,Agriculture Department, Haryana

5. Co-Principal Investigator for Real time damage identification and monitoring in structural building model through smart sensors, 1.0 Lacs, DST Chandigarh

6. Co-Investigator in MHRD's Design Innovation Center (DIC) sanctioned to UIET, under the Energy Theme being led by Dr. Y.P. Verma. Various projects being undertaken/completed under DIC are
   - Automatic Quotes generation for any Image using YOLO and LSTM based learning.
   - Multimodal (Video, Text and Image) Summarization using NLP, CNN and LSTM
   - Multidocument summarization using Reinforcement Learning
   - Luggage theft detection system
   - Internal Navigation system for Visually Impaired persons using BLEs, WiFi and GPS techniques.
   - Smart Parking System

Research Guidance

• Number of PhDs Completed: 2

• Number of PhDs Going on: 6

• Number of M.E. Thesis Supervised: 45

• Number of ME Thesis going on: 2

Workshops and Conference Organized

- Successfully organized 2nd International Conference on Recent Advances in Engineering & Computational Sciences at UIET in 2015 (proceedings are available at IEEExplore.org)

- Successfully organized International Conference on Recent Advances in Engineering & Computational Sciences at UIET in 2014 (proceedings are available at IEEExplore.org)

- Organized 2 workshops on Machine Learning and Deep Learning at UIET.

- Organized 2 workshops on Social Media and Network Analysis at UIET.

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