SHRI MADHWA VADIRAJA INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(A Unit of Shri Sode Vadiraja Mutt Education Trust (R), Udupi)
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Vishwothamanagar, Bantakal – 574 115, Udupi, Karnataka, India
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

APPLICATION FOR THE ALLOTMENT OF SEMINAR TOPIC

Name: SWAROOP KUMAR
USN: 4MW20CS099
Proposed Topics:

1) **Topic: Early identification of PCOS by considering basic symptoms and using the Ensembled technique.**
Reference paper:

1. Shivani Aggarwal, Kavita Pandey, Early identification of PCOS with commonly known diseases: Obesity, diabetes, high blood pressure and heart disease using machine learning techniques, Expert Systems with Applications, Volume 217, 2023, 119532, ISSN 0957-4174.
2. Vedpathak, Shreyas & Thakre, Vaidehi. (2020). PCOcare: PCOS Detection and Prediction using Machine Learning Algorithms. Bioscience Biotechnology Research Communications. 13. 240-244. 10.21786/bbrc/13.14/56.
3. Shamik Tiwari, Lalit Kane, Deepika Koundal, Anurag Jain, Adi Alhudhaif, Kemal Polat, Atef Zaguia, Fayadh Alenezi, Sara A. Althubiti, SPOSDS: A smart Polycystic Ovary Syndrome diagnostic system using machine learning, Expert Systems with Applications, Volume 203, 2022, 117592, ISSN 0957-4174.
4. S. Ahmed et al., "A Review on the Detection Techniques of Polycystic Ovary Syndrome Using Machine Learning," in IEEE Access, vol. 11, pp. 86522-86543, 2023.
5. Reyes-Muñoz E, Sathyapalan T, Rossetti P, Shah M, Long M, Buscema M, Valenti G, La Rosa VL, Cianci S, Vitale SG. Polycystic Ovary Syndrome: Implication for Drug Metabolism on Assisted Reproductive Techniques-A Literature Review. Adv Ther. 2018 Nov;35(11):1805-1815

2) **Topic: Pneumonia Detection using machine learning**
Reference paper:

1. Jatwani, R., Sharma, P.K. (2023). Pneumonia Detection Using Deep Learning: A Bibliometric Study. In: Tomar, R.S., et al. Communication, Networks and Computing. CNC 2022. Communications in Computer and Information Science, vol 1894. Springer,
2. Tuomas Frondelius, Irina Atkova, Jouko Miettunen, Jordi Rello, Gillian Vesty, Han Shi Jocelyn Chew, Miia Jansson, Early prediction of ventilator-associated pneumonia with machine learning models: A systematic review and meta-analysis of prediction model performance. European Journal of Internal Medicine, Volume 121, 2024, Pages 76-87, ISSN 0953-6205.
3. Sharma, S., Guleria, K. (2023). A Deep Learning Model for Early Prediction of Pneumonia Using VGG19 and Neural Networks. In: Marriwala, N., Tripathi, C., Jain, S., Kumar, D. (eds) Mobile Radio Communications and 5G Networks. Lecture Notes in Networks and Systems, vol 588. Springer, Singapore.

Dated Signature of the student:

FOR DEPT. USE ONLY:
1. Topic allotted: _____
2. Allotment of serial number & presentation date: _____

Seminar Coordinator

ABSTRACT:

1. **Early identification of PCOS by considering basic symptoms and using the Ensembled technique:**

   Millions of women worldwide suffer from Polycystic Ovary Syndrome (PCOS), a condition with particularly high prevalence rates in India. To reduce the risk of related problems like diabetes, obesity, and infertility, early identification of PCOS is essential. This research addresses the problem of PCOS identification in two different ways. The first strategy employs data aggregation and feature selection techniques to identify frequent disorders that act as early indications of PCOS. The association between PCOS and other illnesses is validated by supervised and unsupervised learning methods, emphasizing the significance of particular variables for precise prediction. The second method makes use of cutting-edge machine-learning techniques to forecast PCOS in women based on their clinical and physical characteristics. The Gaussian naive Bayes model achieves exceptional accuracy and low computing time. Prolactin, blood pressure, thyroid stimulating hormone, and pregnancy status are among the important predictors that have been found. By making early PCOS detection easier, this research fills a vital gap in the treatment of reproductive health issues and helps afflicted people live better and experience fewer difficulties.

2. **Pneumonia Detection using machine learning:**
   This paper fills a substantial gap in the literature review by doing a comprehensive analysis of pneumonia sickness literature from 2000 to 2020. It looks at the most cited research on pneumonia using Web of Science, Science Direct, IEEE Conference papers, and Citation Index reports. Along with cancer and POCD, pneumonia is one of the top causes of death worldwide, which highlights the critical need for diagnostic breakthroughs. In the meantime, prediction models based on machine learning show promise in expediting diagnosis and directing therapies, especially in ventilator-associated pneumonia (VAP). The effectiveness of different machine learning models in predicting VAP in individuals using mechanical ventilation is assessed through a comprehensive review and meta-analysis. Results show that static prediction models can detect important care-related risk factors with a high degree of predictive accuracy. The creation of dynamic machine learning models with time-dependent predictors for real-time risk assessment and treatment strategy improvement is the main focus of future directions. This synthesis highlights the potential of machine learning to improve diagnosis accuracy and patient outcomes while also advancing our understanding of the literature on pneumonia.