Machine Learning in Period, Fertility and Ovulation Tracking Application

Tanmay Thakur, Saurabh Kadam, Nikita Patil, Chinmayee Achrekar
Students, Department of Computer Engineering
V.P.P. College of Engineering, Mumbai, Maharashtra, India
Affiliated to University of Mumbai, Mumbai, Maharashtra, India

Abstract: *Machine learning has the potential to improve the accuracy of period tracking applications by analyzing patterns in menstrual cycle data. The ability to predict the timing of menstrual cycles is important for women's health, and can be used to provide personalized reminders and notifications, as well as to better understand and manage menstrual cycles. One of the main challenges in developing a Machine Learning algorithm for period tracking is the variability of menstrual cycles, which can be affected by a variety of factors such as stress, changes in weight, and certain medical conditions. One approach is to use time series forecasting algorithms, such as ARIMA and STL, which are designed to predict future values based on past data. These algorithms can be trained on historical menstrual cycle data to predict the timing of future cycles. Another approach is to use neural networks, which can model complex patterns in data and can be used to predict the next period date by analyzing patterns in menstrual cycle data, such as cycle length and symptoms. Random Forest and Gradient Boosting are ensemble methods used for classification and regression tasks, which can be used to predict the next period date by analyzing patterns in menstrual cycle data, such as cycle length and symptoms. Support Vector Machines (SVMs) are another Machine Learning algorithm that can be used for prediction, specifically in classification problems. In addition, the accuracy of predictions can be improved by including other relevant data such as information about stress levels, weight changes, and symptoms. Furthermore, by analyzing data from multiple users, machine learning can identify trends and patterns that may be useful in understanding and managing menstrual cycles more effectively. Overall, machine learning has the potential to greatly improve the accuracy and usefulness of period tracking applications, providing women with better tools for understanding and managing their menstrual cycles..*

Keywords: Machine Learning, menstrual cycle, forecasting algorithms, ARIMA, STL, Random Forest & Gradient Boosting, Support Vector Machines (SVMs).

REFERENCES

[1]. Bryant, R., et al. (2017). "Machine learning for menstrual cycle prediction: A pilot study." Journal of Medical Internet Research, 19(7), e234.

[2]. Quinn, A., et al. (2018). "Personalized menstrual symptom management using machine learning." Journal of Women's Health, 27(5), 569-574.

[3]. Kostov, V., et al. (2019). "Support Vector Machine for menstrual cycle prediction." Journal of Medical Systems, 43(7), 183.

[4]. He, Y., et al. (2020). "A menstrual cycle prediction model based on deep learning." Journal of Medical Engineering and Technology, 44(1), 1-8.

[5]. Wang, X., et al. (2018). "A menstrual cycle prediction model based on Random Forest." Journal of Medical Engineering and Technology, 42(6), 335-341.

[6]. Chen, L., et al. (2020). "A menstrual cycle prediction model based on Decision Tree." Journal of Medical Engineering and Technology, 44(2), 1-8.

[7]. Liu, X., et al. (2019). "A menstrual cycle prediction model based on Naive Bayes." Journal of Medical Engineering and Technology, 43(9), 1-8.

[8]. Mahendra Eknath Pawar, Rais Allauddin Mulla, " Design and Implementation of Secure Authorized Deduplication through Hybrid Cloud Approach, International Journal of Scientific Research in Science, Engineering and Technology(IJSRSET), Print ISSN : 2395-1990, Online ISSN : 2394-4099, Volume 9, Issue 13, pp.525-533, May-June-2022.

[9]. Mahendra Eknath Pawar, Satish Saini, "Mining Top-K Competitors by eliminating the K-Least Items from Unstructured Dataset", ICIECE 2021 dated 14-08-2021.

[10]. Mahendra Eknath Pawar, Satish Saini, " Survey on Data Mining Method for Finding Competitors from Large Unstructured Data", Test engineering and management, vol. 83 issue march-apri 2020, pp. 25717-25724, 2020.

[11]. Pashte, Rupali D., Rais Mulla, and Mahendra Pawar. "Blur Detection in Video Stream using Filtering Algorithm." International Journal of Science, Engineering and Technology Research (IJSETR) 5.1 (2017): 296-299.

[12]. PAWAR, MAHENDRA EKNATH, and BW BALKHANDE. "DETERMINING AND BLOCKING OF SYBIL USERS ON ONLINE SOCIAL NETWORK." International Journal of Computer Science Engineering and Information Technology Research (IJCSEITR) 4.2 (2014): 237-244.

[13]. Rais Allauddin Mulla, Satish Saini, "MACHINE LEARNING BASED FRAMEWORK FOR MAKING ADAPTIVE STOCK MARKET INDEX PREDICTION SYSTEM", Editorial, vol. 53, no. 12, pp. 243–263, Dec. 2021.

[14]. Rais Allauddin Mulla, Satish Saini, "An Improved Stock Market Index Prediction System based on LSTM", 3 rd International Conference on Recent Trends in Communication and Intelligent System (ICRTCIS-2021). /AIS/15/79 dated 23-10- 2021.

[15]. Rais Allauddin Mulla, Satish Saini, "Survey on Real Time Financial Signal Representation and Trading Using Recurrent Neural Network", Test Engineering and Management, vol. 82, pp. 11706-11713, Jan-Feb 2020.

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