International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Athletes Bioinformatics to Record Cardiovascular Problem Using Our Classifiers

[1]B. Krishna Kumar, [2]Dr. J. Jaya Chithra

[1]II MCA student Department of Computer Science and Applications, Periyar Maniammai Institute of Science and Technology, Vallam, Thanjavur, Tamil Nadu, India. krishnakumar769306@gmail.com

[2]Professer of Department of Computer science and application, Periyar Maniammai Institute of Science and Technology, Vallam, Thanjavur, Tamil Nadu, India. deanscse@pmu.edu

ABSTRACT –

This project can be used to find out the performance of athletes and improve the training process in order to reduce the risk of injuries. It can help to predict the athlete's health status and prevent injuries. The system can also provide the federation with information about the athletes' physical and mental health, which can help them to develop better health for athletes. The system allows athletes to choose their own games according to their grades, provide their physical bio data, and provide their full medical report. The KNN (K – Nearest Neighbour) is used to analyse the test report and the result will show the athlete's decision whether to continue or not. The existing system of analysing the health report is not effective, but this project provides an evident report to support their life.

Keywords: athletes, health report, training, prevent injuries, sports.

I. INTRODUCTION

This project can be used to evaluate athletes' performances and enhance training methods to lower the chance of injuries. It can be used to evaluate data from various sporting competitions and activities and forecast how well sportsmen will do. It can also be used to pinpoint potential training process weak points and suggest performance-enhancing tactics. Finally, it can aid in injury prevention and health status prediction for athletes. The system allows athletes to select their own sports based on their grades, but first they must provide their physical bio data and the whole medical report. The test report is analysed using the KNN (K - Nearest Neighbour)

algorithm, which will display the results and allow the athlete to decide whether to continue or not.

II. LITERATURE SURVEY

[1] The paper published in 2020 - Heterogeneous Dynamic Graph Attention Network - Li, Qiuyan and Shang, Yanlei and Qiao, Xiuquan and Dai, Wei.

This paper proposes a heterogeneous dynamic graph attention network (HDGAN) to take the heterogeneity and dynamics of the network into account. It is based on three levels of attention: structural-level attention, semantic-level attention and time-level attention. Experiments on two real-world heterogeneous dynamic networks show the effectiveness of the HDGAN model.

[2] The paper published in 2017 - Embedding Learning with Events in Heterogeneous Information Networks - Gui, Huan and Liu, Jialu and Tao, Fangbo and Jiang, Meng and Norick, Brandon and Kaplan, Lance and Han, Jiawei.

This paper proposes hebe is a framework to learn object embeddings with events in heterogeneous information networks, where a hyperedge encompasses the objects participating in one event. It is robust to data sparseness and noise, and scalable when data size spirals. Experiments on large-scale real-world datasets show efficacy and robustness.

[3] This paper published in 2022 - Hypergraph Learning: Methods and Practices - Gao, Yue and Zhang, Zizhao and Lin, Haojie and Zhao, Xibin and Du, Shaoyi and Zou, Changqing

This paper proposes hypergraph learning is a technique for conducting learning on a hypergraph structure, and this paper reviews existing literature, introduces existing learning methods, and presents a tensor-based dynamic hypergraph representation and learning framework.

[4] This paper published in 2020 - Harmless Overfitting: Using Denoising Autoencoders in Estimation of Distribution Algorithms - Malte Probst, Franz Rothlauf

This paper suggests using Denoising Autoencoders, which are generative models for EDAs that risk overfitting by simulating complex probability distributions. It is quicker and more efficiently parallelizable, making it the ideal alternative for challenging and extensive optimisation jobs.

[5] This paper published in 2019 - Motif and Hypergraph Correlation Clustering - Li, Pan and Puleo, Gregory J. and Milenkovic, Olgica

This paper proposes motif correlation clustering is a new form of agnostic clustering that aims to minimize the cost of clustering errors associated with both edges and higher-order network structures. It is NP-hard and polynomial-time clustering algorithms provide constant approximation guarantees.

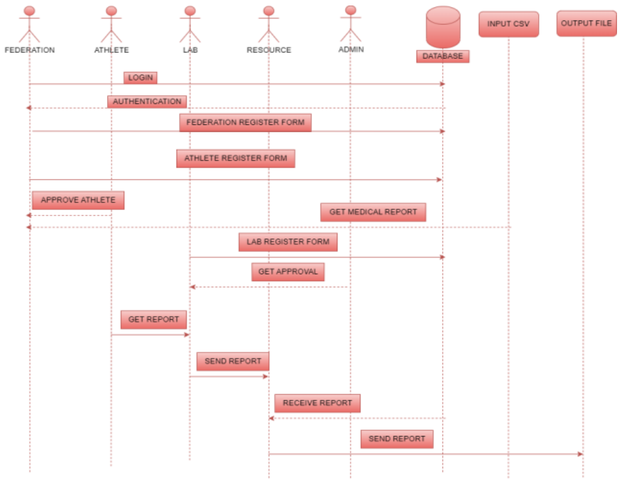
III. EXISTING SYSTEM

The existing system has issues with connectivity, storage, and security. It does not allow users to modify their email address, renewals cannot be cancelled or rolled back, and Variational Autoencoder only offers a tiny slice with sufficient resolution. Applying a proper analysing technique is a tedious task and handling data is more difficult. Fixing these issues is challenging and requires compromise of analytical data or redundancy. Models and methods are not efficient in analysing data effectively.

VI. PROPOSED SYSTEM

The K-Nearest Neighbours (KNN) algorithm is used to analyze the cardiovascular problems of athletes, such as heart failure, chest pain, high blood pressure, and stroke. The K-Nearest Neighbours algorithm uses the K classification approach and considers the distance from a particular point of interest to each object as well as the degree of separation between objects. The analyzing process gets out accurate results. The K-Nearest Neighbours algorithm uses the K classification approach and considers the distance from a particular point of interest to each object as well as the degree of separation between objects.

DIAGRAM



Module description

1) Federation

2) Athlete

3) Lab Manager

4) Resource

5) Admin

- ***federation***

The module provides a registration process for federations with details such as name, email-id, password, and phone number. After approval, the federation can log in and fill out a form with details such as federation type, years of experience, member size, top achievements, and address. Finally, the federation can approve any athlete who needs to be part of their team.

- ***Athletes***

This module allows athletes to register their team details, add their physical details, and select whether they are physically challenged or medically ill. This record will be sent to the federation and approved by the federation. After approval, the athlete can upload medical data such as age, chest pain, Resting Blood Pressure, Cholesterol, Fasting Blood Sugar, Resting electro cardiogram, maximum heart rate achieved, exercise induced angina, depression, the slope of the peak exercise, the number of major vessels, and blood disorder thalassemia. This report will be sent to Lab.contrast enhancement to transform the picture and video into something perceptually accurate.

- ***Lab manager***

This module requires the lab team to register with their name, email-id, password, and phone number. After the initial registration process, the lab team needs to get access from the admin. After login, the lab team can access their account, which includes fields like lab type, licence number, laser present or not, and if any toxins of biological origin are present or not. The admin can view and approve the form, and the lab can analyse the athlete data and send it to the resource for further analysing.

- ***Resource***

The module requires the resource team to register with their name, email-id, password, and phone number and get access from the admin. After login, they can view the health report of an athlete and analyse the data to get a target value. If they get a target of 0, they should stop training and rest.

- ***Admin***

Admin has full rights in approving all modules user registration, including federation, lab, and resource registration. He can also approve the laboratory registration form, allowing the lab to analyse the health report provided by the athlete and send the data to further process.

V. RESULT ANALYSIS

Fig 5.1 Shows the home page

Fig 5.1 **home page**

Fig 5.2 show the admin page for athlete

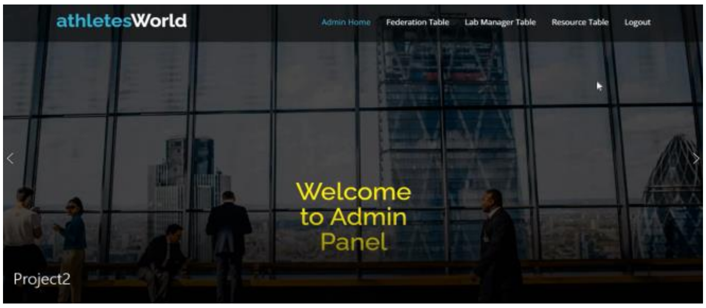


Fig 5.2 admin page

Fig 5.3 shows the federeation approve page

Fig 5.3 federation page

Fig 5.4 shows the athlete health record registration page

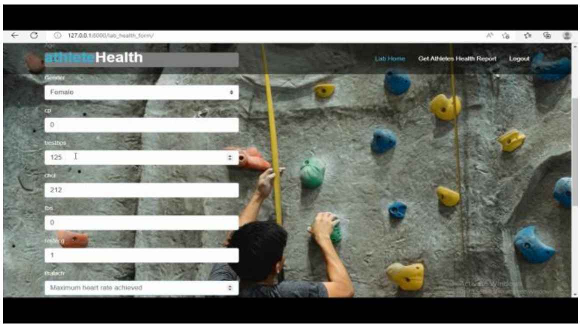


Fig 5.4 athlete health record registration page

Fig 5.5 shows the final athlete approving page

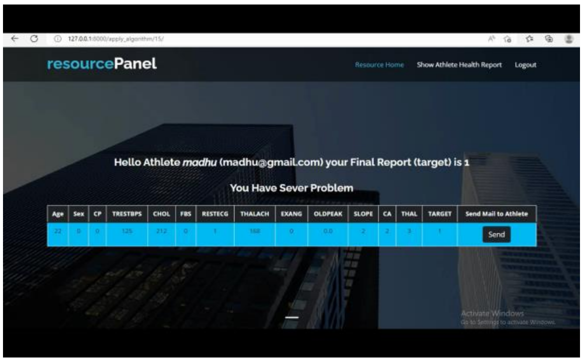


Fig 5.5 athlete final approval page

VI. CONCLUSION

The most important details are that HeteHG-VAE and Autoencoders both have drawbacks, but KNN requires less training or no training at all. HeteHG-VAE can be challenging to forecast which class a given data point will belong, while Autoencoders require a lot of parameters. KNN requires less training or no training at all.

VII. FUTURE ENHANCEMENT

Although we have challenges when grouping together comparable data elements, these issues will eventually be resolved.

VIII. REFERENCES

1. Abdullah M. Moussa , A Fast and Accurate Algorithm for Copy-Move Forgery Detection, Tenth International Coerence on Computer Engineering & Systems (ICCES), 2015.

2. Kanagavalli.N , Latha.L , A Survey of Copy-Move Image Forgery Detection Techniques, International Conference on Inventive Systems and Control, 2017.

3. Mejren Mohammad Al-Hammadi , Improving SURF Based Copy-Move Forgery Detection Using Super Resolution, IEEE International Symposium on Multimedia, 2016
4. Mohammed Ikhlayel , Mochamad Hariadi , I Ketut Eddy Pumama , Modified Multi-scale Feature Extraction for CopyMove Forgery Detection Based on CMFD-SIFT, International Conference on Computer Engineering, Network and Intelligent Multimedia (CENIM), 2018.
5. N. Hema Rajini, Image Forgery Identification using Convolution Neural Network, International Journal of Recent Technology and Engineering (IJRTE), Volume-8, Issue-1S4, June 2019
6. Qi Yan, Rui Yang,Jiwu Huang,Robust Copy–Move Detection of Speech Recording Using Similarities of Pitch and Formant, IEEE Transactions on Information Forensics and Security (Volume: 14 , Issue: 9 , Sept. 2019)
7. Rahul Dixit, Ruchira Naskar,Review, analysis and parameterisation of techniques for copy–move forgery detection in digital images , IET Image Processing (Volume: 11 , Issue: 9 , 9 2017)
8. Srinivasan Ramakrishnan ; Sivasamy Nithya, Two improved extension of local binary pattern descriptors using wavelet transform for texture classification, IET Image Processing (Volume: 12 , Issue: 11 , 11 2018).
9. Yuan Wang , Lihua Tian , Chen Li, LBP-SVD Based Copy Move Forgery Detection Algorithm, IEEE International Symposium on Multimedia (ISM), 2017
10. Yuanfang Guo, Xiaochun Cao, Wei Zhang, Rui Wang, Fake Colorized Image Detection, IEEE Transactions on Information Forensics and Security (Volume: 13 , Issue: 8 , Aug. 2018).