

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 4, Issue 5, April 2024

Survey on Predicting the Risk of Heart Attack Through Retinal Eye Images Analysis

Rumana Anjum¹, Abdul Mohiyuddin², Girisha S³, Manupriya B Patil⁴, Nandish DS⁵,

Faculty, Department of Computer Science and Engineering¹ Student, Department of Computer Science and Engineering^{2,3,4,5} Vidya Vikas Institute of Engineering and Technology, Mysuru, Karnataka, India

Abstract: Cardiovascular diseases (CVDs) remain a leading cause of global morbidity and mortality. Early detection and intervention are crucial for improving patient outcomes and reducing the burden on healthcare systems. Recent research suggests a potential link between retinal vascular changes and cardiovascular health. Retinal images offer a non-invasive means to assess microvascular abnormalities, making them an attractive source of data for predictive modeling. This project focuses on developing a machine learning model, specifically using Recurrent Neural Networks (RNNs), to analyze retinal images and detect patterns indicative of heart diseases. RNNs are well-suited for processing sequential data, making them suitable for capturing temporal dependencies in the retinal images and improving the predictive accuracy of the model.

Keywords: Vulnerability, Web Application, Health care

REFERENCES

- [1]. Adler ED, Voors AA, Klein L, Macheret F, Braun OO, Urey MA et al (2020) Improving risk prediction in heart failure using machine learning. Eur J Heart Fail 22(1):139–147. https://doi.org/10.1002/EJHF.1628
- [2]. Akbilgic O, Butler L, Karabayir I, Chang P, Kitzman D, Alonso A et al (2021) Artificial intelligence applied to ecg improves heart failure prediction accuracy. J Am Coll Cardiol 77(18):3045. https://doi.org/10.1016/S0735-1097(21)04400-4
- [3]. Albert KF, John R, Divyang P, Saleem T, Kevin MT, Carolyn JP et al (2019) Machine learning prediction of response to cardiac resynchronization therapy: improvement versus current guidelines. Circ Arrhythmia Electrophysiol, vol 12(7). https://doi.org/10.1161/CIRCEP.119.007316
- [4]. Ali MM, Paul BK, Ahmed K, Bui FM, Quinn JMW, Moni MA (2021) Heart disease prediction using supervised machine learning algorithms: performance analysis and comparison. Comput Biol Med 136:104672. https://doi.org/10.1016/J.COMPBIOMED.2021.104672
- [5]. Araujo M, Pope L, Still S, Yannone C (2021) Prediction of heart disease with machine learning techniques. Graduate Res, Kennesaw State Un
- [6]. Breiman L (2001) Random forests. Mach Learn 45(1):5-32. https://doi.org/10.1023/A:1010933404324
- [7]. Caruana R, Karampatziakis N, Yessenalina A (2008) An empirical evaluation of supervised learning in high dimensions. In: Conference: machine learning, proceedings of the twenty-fifth international conference (ICML 2008), Helsinki, Finland
- [8]. Dalal S, Onyema EM, Kumar P, Maryann DC, Roselyn AO, Obichili MI (2022) A hybrid machine learning model for timely prediction of breast cancer. Int J Model Simul Sci Comput 0(0):2341023. https://doi.org/10.1142/S1793962323410234
- [9]. Diwakar M, Tripathi A, Joshi K, Memoria M, Singh P, Kumar N (2021) Latest trends on heart disease prediction using machine learning and image fusion. Mater Today: Proc 37(Part 2):3213–3218. https://doi.org/10.1016/J.MATPR.2020.09.078

Copyright to IJARSCT www.ijarsct.co.in DOI: 10.48175/IJARSCT-17589

