**Literature review:**

Emine Cengil et al.[1] performed an analysis using Convolutional Neural Networks (CNN) and classification methods on X-Ray images which contains three classes (COVID, normal, pneumonia). Feature extraction methods like-AlexNet, 36 Xception, 37 NASNetLarge, 38 and EfficientNet-B039 methods were used for automated feature extraction which then after was passed to the classification algorithms- Support Vector Machine (SVM), Linear Discriminant Analysis (LDA), k-Nearest Neighbor (KNN), Naïve Bayes (NB) and Decision Tree (DT). The accuracy obtained for the best model using the “COVID-19 Image Dataset,” [2] “COVID-19 Pneumonia Normal Chest X-ray (PA) Dataset,” [5] and “COVID-19 Radiography Database”[3,4] was 98.8%, 95.9% and 99.6% respectively which classifies the X-Ray as COVID, normal or pneumonia.

1. Cengil, Emine, and Ahmet Çınar. “The Effect of Deep Feature Concatenation in the Classification Problem: An Approach on COVID‐19 Disease Detection.” *International Journal of Imaging Systems and Technology*, vol. 32, no. 1, John Wiley & Sons, Inc, 2022, pp. 26–40, https://doi.org/10.1002/ima.22659.
2. Covid-19 Image Dataset. [accessed 2021 Apr 08]. https://www. kaggle.com/pranavraikokte/covid19-image-dataset
3. Chowdhury, Muhammad & Rahman, Tawsifur & Khandakar, Amith & Mazhar, Rashid & Kadir, Muhammad & Mahbub, Zaid & Islam, Khandakar & Khan, Muhammad Salman & Iqbal, Atif & Al-Emadi, Nasser & Reaz, Mamun Bin Ibne & Islam, Mohammad. (2020). Can AI help in screening Viral and COVID-19 pneumonia?. IEEE Access. 8. 132665 -132676. 10.1109/ACCESS.2020.3010287.
4. Rahman T, Khandakar A, Qiblawey Y, Tahir A, Kiranyaz S, Abul Kashem SB, Islam MT, Al Maadeed S, Zughaier SM, Khan MS, Chowdhury MEH. Exploring the effect of image enhancement techniques on COVID-19 detection using chest X-ray images. Comput Biol Med. 2021 May;132:104319. doi: 10.1016/j.compbiomed.2021.104319. Epub 2021 Mar 11. PMID: 33799220; PMCID: PMC7946571.
5. COVID19\_Pneumonia\_Normal\_Chest\_Xray(PA)\_Dataset. [accessed 2021 April 08]. https://www.kaggle.com/amanullahasraf/covid19- pneumonia-normal-chest-xraypa-dataset