# Literature Survey

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| S. No | Paper Title | Algorithms Used in the Proposed Work | Inference from the Literature Paper |
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| 1 | C. Suresh, B. C. Pani, C. Swatisri, R. Priya and R. Rohith, "A Neural Network based Model for Predicting Chronic Kidney Diseases," 2020 Second International Conference on Inventive Research in Computing Applications (ICIRCA), 2020, pp. 157-162, doi: 10.1109/ICIRCA48 905.2020.9183318. | Artificial Neural Network algorithms | Many factors (such as Hemoglobin, Blood Pressure, diabetes, obesity) contribute to the continuous decline of kidney function over time. Chronic kidney disease has many stages for the criticality of the disease. Hence, a better diagnosis of chronic kidney disease is required to prevent continuous progression. This work gives a comprehensive study of the bio-clinical phenotype of cases with high-risk of Chronic kidney disease and will repeatedly assess victims over the long term and helps in classifying the stage of chronic kidney disease and then provides better recommendations (food, medicine) to prevent the rise of chronic kidney disease |
| 2 | S. Vashisth, I. Dhall and S. Saraswat, "Chronic Kidney | Multilayer Perceptron Classifier | The diagnosis of CKD is a problematic job as there is no major symptom that serves a classification feature in detecting |

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| | Disease (CKD) Diagnosis using Multi-Layer Perceptron Classifier," 2020 10th International Conference on Cloud Computing, Data Science & Engineering (Confluence), 2020, pp. 346-350, doi: 10.1109/Confluence 47617.2020.905817 8. | | this disease. This paper proposes a Multi-Layer Perceptron Classifier that uses a fully connected Deep Neural Network to predict whether a patient suffers from the problem of CKD or not. The model is trained on a dataset of around 400 patients and considers various symptoms like blood pressure, age, sugar level, red blood cell count, etc. that assist the model in performing accurate classification. Our experimental results show that the proposed model can perform classification with the testing accuracy of 92.5 |
| 3 | N. V. Ganapathi Raju, K. Prasanna Lakshmi, K. G. Praharshitha and C. Likhitha, "Prediction of chronic kidney disease (CKD) using Data Science," 2019 International Conference on Intelligent Computing and Control Systems (ICCS), 2019, pp. 642-647, doi: 10.1109/ICCS4514 1.2019.9065309. | Regression and classification, decision tree classifier, random forest | The main motive of this work is to ascertain the existence of chronic kidney disease by imposing various classification algorithms on the patient medical record. This research work is primarily concentrated on finding the best suitable classification algorithm which can be used for the diagnosis of CKD based on the classification report and performance factors. Empirical work is performed on different algorithms like Support Vector Machine, Random Forest, XGBoost, Logistic Regression, Neural networks, Naive Bayes Classifier. The experimental results show that Random Forest and XGBoost give better results when compared to other classification algorithms and generates 99.29% accuracy. |
| 4 | R. Gupta, N. Koli, N. Mahor and N. Tejashri, "Performance | Regression and classification, decision tree | The main focus in this paper is on the classification techniques, that is, tree-based decision tree, random forest, and logistic regression has been analyzed. |

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| | Analysis of Machine Learning Classifier for Predicting Chronic Kidney Disease," 2020 International Conference for Emerging Technology (INCET), 2020, pp. 1-4, doi: 10.1109/INCET498 48.2020.9154147. | classifier, random forest | Different measure has been used for comparison between algorithms for the dataset collected from standard UCI repository. |
| 5 | A. Maurya, R. Wable, R. Shinde, S. John, R. Jadhav and R. Dakshayani, "Chronic Kidney Disease Prediction and Recommendation of Suitable Diet Plan by using Machine Learning," 2019 International Conference on Nascent Technologies in Engineering (ICNTE), 2019, pp. 1-4, doi: 10.1109/ICNTE448 96.2019.8946029. | Machine Learning Algorithms,M DRD equation | The proposed system extracts the features which are responsible for CKD, then machine learning process can automate the classification of the chronic kidney disease in different stages according to its severity. The objective is to use machine learning algorithm and suggest suitable diet plan for CKD patient using classification algorithm on medical test records. Diet recommendation for patient will be given according to potassium zone which is calculated using blood potassium level to slow down the progression of CKD. |
| 6 | P. Ghosh, F. M. Javed Mehedi Shamrat, S. Shultana, S. Afrin, A. A. Anjum and A. | Support Vector Machine, AdaBoost, Linear | Chronic Kidney disease (CKD), a slow and late-diagnosed disease, is one of the most important problems of mortality rate in the medical sector nowadays. Based on this critical issue, a significant number of |

| | | Discriminant Analysis, and Gradient Boosting. | men and women are now suffering due to the lack of early screening systems and appropriate care each year. However, patients' lives can be saved with the fast detection of disease in the earliest stage. In addition, the evaluation process of machine learning algorithm can detect the stage of this deadly disease much quicker with a reliable dataset. In this paper, the overall study has been implemented based on four reliable approaches |
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| | A. Khan, "Optimization of Prediction Method of Chronic Kidney Disease Using Machine Learning Algorithm," 2020 15th International Joint Symposium on Artificial Intelligence and Natural Language Processing (iSAI-NLP), 2020, pp. 1-6, doi: 10.1109/iSAI-NLP51646.2020.9376787. | | |
| 7 | R. K. Chiu, R. Y. Chen, Shin-An Wang and Sheng-Jen Jian, "Intelligent systems on the cloud for the early detection of chronic kidney disease,International Conference on Machine Learning and Cybernetics, 2012, pp. 1737-1742, doi: 10.1109/ICMLC.2012.6359637. | Back-propagation networks, Generalized Feed Forward Neural Networks, and Modular Neural Networks. | the technologies of artificial neural networks including back-propagation network (BPN), generalized feed forward neural networks (GRNN), and modular neural network (MNN) are developed respectively for the early detection of chronic kidney disease (CKD). The comparison of accuracy, sensitivity, and specificity among three models is subsequently performed. The model of best performance is chosen for system development. |
| 8 | Marwa Almasoud and Tomas E Ward, "Detection of Chronic Kidney | Optimization of Prediction Method of Chronic | Chronic kidney disease (CKD) is one of the most critical health problems due to its increasing prevalence. In this paper, we aim to test the ability of machine learning |

| | | Kidney Disease Using Machine Learning Algorithm. | algorithms for the prediction of chronic kidney disease using the smallest subset of features. Several statistical tests have been done to remove redundant features such as the ANOVA test, the Pearson's correlation, and the Cramer's V test. Logistic regression, support vector machines, random forest, and gradient boosting algorithms have been trained and tested using 10-fold cross-validation. We achieve an accuracy of 99.1 according to F1-measure from Gradient Boosting classifier. |
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| | Disease using Machine Learning Algorithms with Least Number of Predictors" International Journal of Advanced Computer Science and Applications(IJACSA), 10(8), 2019. http://dx.doi.org/10.14569/IJACSA.2019.0100813 | | |
| 9 | J. Qin, L. Chen, Y. Liu, C. Liu, C. Feng and B. Chen, "A Machine Learning Methodology for Diagnosing Chronic Kidney Disease," in IEEE Access, vol. 8, pp. 20991-21002, 2020, doi: 10.1109/ACCESS.2019.2963053. | Optimization of Prediction Method of Chronic Kidney Disease Using Machine Learning Algorithm. | KNN imputation was used to fill in the missing values, which selects several complete samples with the most similar measurements to process the missing data for each incomplete sample. Missing values are usually seen in real-life medical situations because patients may miss some measurements for various reasons. After effectively filling out the incomplete data set, six machine learning algorithms (logistic regression, random forest, support vector machine, k-nearest neighbor, naive Bayes classifier and feed forward neural network) were used to establish models |
| 10 | Kavitha, K., Kala, K. (2021). Early Diagnosis of Chronic Kidney Disease Using Machine Learning Algorithms with | Linear, Logistic, Decision tree, CART, and Random forest classifier | Early detection of CKD would be very supportive for giving the treatments in the earlier stage and reduce the mortality rate. Most accurate and efficient models have to be implemented for avoiding this risk. Many researchers have undergone research in this area. But still, the prevalence level raised globally. The main |

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| | Least Parameters by RFE and Feature Importance Techniques. In: Peng, SL., Hao, RX., Pal, S. (eds) Proceedings of First International Conference on Mathematical Modeling and Computational Science. Advances in Intelligent Systems and Computing, vol 1292. Springer, Singapore. https://doi.org/10.1007/978-981-33-4389-4_17 | | intention of this research work is to improvise the diagnosis accuracy by evaluating the best feature selection and establishing prediction model through machine learning techniques. Ranking of each parameter was generated using RFE and the importance of features were identified using statistical values through linear, logistic, decision tree, CART, random forest classifier techniques. |