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Prediction of Modernized Loan Approval System Based on Machine Learning Approach

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Abstract: To determine and to understand the working of loan systems for the cause of Loan Prediction using the demographic information of various factors that combine to form the nature of the approval using algorithms and concepts of Machine Learning and ultimately deploying this model on Cloud Based Platforms. Machine learning being aided by Cloud services are progressively seeing immense growth in the industry as they have benefits of Scalability, Affordability and easy use of models on systems as and when required. Therefore datasets are designed, automated and put under testing and training. The major aim of this project is to predict which of the customers will have their loan paid or not using prominent algorithms like Decision Tree, Logistic Regression and Random Forest. Logistic Regression Confusion matrix analysis is relatively in accordance to Decision Tree and Random Forest algorithm helping us attain an accuracy of 86% with minimum error.

Keywords: Loan Prediction, Machine Learning, Cloud services, testing and Training, Logistic Regression.

REFERENCES

- [1]. Á. López García et al., " A Cloud Based Framework for Machine Learning Workloads and Applications," in IEEE Access, vol. 8, p. p. 18681 - 18692, 2020, doi: 10.1109/ACCESS.2020.2964386.
- [2]. Websiteurl:https://towardsdatascience.com/simple-way-todeploymachine-learning-models-to-cloud-fd58b771fdcf, accessed on 20th sept., 2020
- [3]. Website url: https://info.cloudquant.com/2019/07/aiml20190715, accessed on 21st sept., 2020
- [4]. Ongsulee, Pariwat. "Artificial intelligence, machine learning and deep learning." 2017 15th International Conference on ICT and Knowledge Engineering (ICT&KE). IEEE, 2017.
- [5]. Tyagi, Amit Kumar, and Poonam Chahal. "Artificial Intelligence and Machine Learning Algorithms." Challenges and Applications for Implementing Machine Learning in Computer Vision. IGI Global, 2020. 188 - 219.
- [6]. https://cloud.google.com/ai-platform/prediction/docs/deploying-models, accessed on 22nd sept., 2020
- [7]. Pakdel, Rezvan, and John Herbert. "Adaptive Cost Efficient Framework for Cloud Based Machine Learning." 2017 IEEE 41st Annual Computer Software and Applications Conference (COMPSAC). Vol. 2. IEEE, 2017.
- [8]. Miller, Shane, Kevin Curran, and Tom Lunney. " Cloud based machine learning for the detection of anonymous web proxies." 2016 27th Irish Signals and Systems Conference (ISSC). IEEE, 2016.
- [9]. Navada, Arundhati, et al. " Overview of use of decision tree algorithms in machine learning." 2011 IEEE control and system graduate research colloquium. IEEE, 2011.
- [10]. Hamid, Aboobyda & Ahmed, Tarig. (2016). "Developing Prediction Model of Loan Risk in Banks Using Data Mining. Machine Learning and Applications". An International Journal. 3. 1 -9.10.5121/mlaij.2016.3101.
- [11]. Preethi, M. (2017). " Data Mining In Banking Sector " Ikizler, Nazli & Güvenir, Halil Altay. (2001). " Mining Interesting Rules in Bank Loans Data"

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- [12]. Chen, Weimin & Xiang, Guocheng & Liu, Youjin & Wang, Kexi. (2012). "Credit risk Evaluation by hybrid data mining technique". Systems Engineering Procedia. 3. 194 -200.10.1016/j.sepro.2011.10.029.
- [13]. Zurada J. (2002) " Data Mining Techniques in Predicting Default Rates on Customer Loans ". In: Haav HM., Kalja A. (eds) Databases and Information Systems II. Springer,Dordrecht.
- [14]. Dzelihodzic, Adnan & Donko, Dzenana. (2013). "Data Mining Techniques for Credit Risk Assessment Task ".
- [15]. Akcura, Korhan & Chhibber, Appan. (2018). " Design and Comparison of Data Mining Techniques for Predicting Probability of Default on a Loan"
- [16]. S., Singaravelan & Arun, R. & Shunmugam, D. & Soundar, K. & Mayakrishnan, R. & Murugan, D. (2018).
 "ANALYSIS OF CLASSIFICATION ALGORITHMS ON DIFFERENT DATASETS". Review of Innovation and Competitiveness. 4. 41 - 54. 10.32728/ric.2018.42/3.
- [17]. Jothikumar, R. & Sivabalan, R.V. & Sivarajan, E. (2015). "Accuracies of J48 weka classifier with different supervised weka filters for predicting heart diseases". 10. 7788 7793.
- [18]. Desai, Aaditya & Rai, Sunil. (2013). "Analysis of Machine Learning Algorithms using Weka".
- [19]. Shivangi Gupta & Neeta Verma. (2016). Comparative Analysis of classification Algorithms using WEKA tool.International Journal of Scientific & Engineering Research, Volume 7, Issue 8, August 2016. ISSN 2229 5518
- [20]. Ranka, Sanjay, and V. Singh. "CLOUDS: A decision tree classifier for large datasets." Proceedings of the 4th Knowledge Discovery and Data Mining Conference. Vol. 2. No. 8. 1998.
- [21]. Zhu, Xu Dong, Hui Li, and Feng Hua Li. " Privacy preserving logistic regression outsourcing in cloud computing." International Journal of Grid and Utility Computing 4.2 3 (2013): 144 150.
- [22]. R. Ramesh, "Predictive analytics for banking user data using AWS Machine Learning cloud service," 2017 2nd International Conference on Computing and Communications Technologies (ICCCT), Chennai, 2017,
- [23]. p. p. 210 215, doi: 10.1109/ICCCT2.2017.7972282.
- [24]. Motwani, A., P. Chaurasiya, and G. Bajaj. "Predicting Credit Worthiness of Bank Customer with Machine Learning Over Cloud." International journal of computer sciences and engineering 6 (2018): 7.
- [25]. Ravuri, Suman, and Oriol Vinyals. " Classification accuracy score for conditional generative models." Advances in Neural Information Processing Systems. 2019.

