IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 11, April 2025
Impact Factor: 7.67

A Freelance Integrated Approach for Client Satisfaction Using Naive Bayes Algorithm

Mrs. R. Priya[1], N. Athi Sankar[2], M. Dhakshith[3], P. Indrajith[4], B. Kamalesh[5]
Associate Professor, Department of Information Technology[1]
Students,B.Tech., FinalYear, Department of Information Technology[2,3,4,5]
Anjalai Ammal Mahalingam Engineering College, Thiruvarur, India

Abstract: *The goal of the Improvisational Capability program is to introduce the fundamentals of improvisation mainly with Entrepreneur in order to promote innovative thinking and teamwork, enhance performance abilities, and boost team effectiveness. As an alternative to conventional coaching methods, the curriculum can be applied in a variety of fields. Each session starts with a review of the previous module, followed by a discussion that provides a more thorough explanation of how improvisation functions, its benefits and risks, as well as how we may utilize it most efficiently. In our model, we will be using the concept of freelancing in IT services. There are many similarities between freelancers and businesses in the IT industry. When it comes to finding and keeping employees, creating a business culture, managing people, and managing projects, both groups experience similar difficulties. However, there are some significant distinctions in how they approach business planning that might help you decide if your company will benefit more from a freelancer or corporation model. Some people find success working as a freelancer, while others find it difficult. Finding clients, keeping them, and getting the appropriate remuneration are the key obstacles to generating money as a freelancer. Additionally, self-employment calls for ongoing attempts to generate income through the investment in systems and infrastructure for ongoing success. Especially if you operate from home or other remote locations, being a freelancer frequently requires full-time dedication. To succeed as a freelancer in the IT business, you need to be persistent and patient when it comes to finding clients and making payment deadlines. There are numerous web services available if you're seeking for freelance work, and they can all help you quickly get your ideal position. The Naive Bayes machine learning algorithm, which is based on the Bayes theorem, is utilized for various classification functions. The generalization of Naive Bayes is called Gaussian Naive Bayes. Although there are numerous functions used to estimate data distribution, the Gaussian or normal distribution is the most straightforward to employ..*

Keywords: Naives Bayes Algorithm, Classification, In-house and Freelance Employee

I. INTRODUCTION

The ability to think and behave flexibly and creatively in response to unforeseen or changing circumstances is referred to as improvisational capability. It is the ability to come up with fresh, original ideas, adjust to shifting conditions, and make wise decisions on the fly without consulting a pre-written plan. Improvisational skills can be developed with practice, imagination, and a risk-taking attitude. It entails developing an open mindset, accepting uncertainty, and being at ease with making mistakes. The capacity to improvise is frequently regarded as a crucial component of effective creativity and imaginative problem-solving. In the context of IT, achieving client expectations and requirements for the provision of IT solutions and services is referred to as providing client satisfaction. The quality of their work, the promptness of their deliverables, and the overall cost of their services must all be satisfactory to their clients for IT experts. To meet client's expectation and satisfaction improvisational capability is an important factor, so we have included freelance concept within the IT firm, which helps the client to choose which type of employee can work for them.

DOI: 10.48175/IJARSCT-25801

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 11, April 2025
Impact Factor: 7.67

A regression is made for the usefulness of data collection, data analysis and data integration. The larger areas such as information technology which are developing tons of data will obtain the aid of regression to every element of data operations like data labeling, segmenting and analyzing. The fusion of regression with massive data is a never-ending loop encountering the requirements of the client is the most critical element for a profitable business. Regression analyzes the hierarchy and helps the team to complete the project on time to benefit their clients. The massive data allows information technology to calculate the probability of different outcomes and decisions. Predictive analysis helps then by providing resources for the right team. The input of regression is the information extracted for massive data. Hereby making a regression of finding the hierarchy for the allocating the resource in the enormous team of employees, makes the information technology advances in their business by providing a good service to the clients.

II. NAIVE BAYES ALGORITHM

The Naive Bayes classifier is a simple but effective probabilistic learning algorithm based on the Bayes theorem with strong independence assumptions among the features. Despite the naive in its name, Naive Bayes has been proved a great classifier not only for text related tasks like spam filtering, and sport events classification but also to predict medical diagnosis. This article will give you an overview as well as more advanced use and implementation of Naive Bayes in machine learning.

- Naïve Bayes is a classification algorithm for categorical variables, which is based on the well-known Bayes theorem.
- Used mostly in high-dimensional text classification
- The Naïve Bayes Classifier is a simple probabilistic classifier and it has very few number of parameters which are used to build the ML models that can predict at a faster speed than other classification algorithms.

The Naive Bayes algorithm plays a classification and prediction role in the project described in the document. Here's how it contributes:

- Classification Tasks: It is used to classify data efficiently, such as categorizing types of employees (freelance or in-house), predicting budget allocations, or identifying resource needs for different teams.
- Real-Time Predictions: The algorithm is highlighted for its speed and simplicity, making it useful for making quick, real- time decisions—important in dynamic freelancing scenarios.
- Nonlinear Data Handling: Naive Bayes is noted in the document as particularly advantageous in dealing with cases where no prior assumptions or complex models are required, making it suitable for unpredictable freelance project environments.

III. INHOUSE AND FREELANCE EMPLOYEE

In-house Employee:

An in-house employee is someone who is directly hired and employed by a company to work within that company, typically at its own office or location. They are a permanent or long-term part of the company's workforce, unlike freelancers, consultants, or employees from external agencies.

- Stable salary and benefits (health insurance, bonuses, paid leaves).
- Career growth opportunities inside the company.
- Sense of belonging and being part of a bigger mission.
- Access to resources

Freelance Employee:

Actually, the term "freelance employee" can be a little confusing because freelancer and employee usually mean two different things:

- A freelancer is self-employed — they work for themselves, not for a company.
- An employee works directly for a company — usually with a contract, salary, benefits, and under company rules.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 11, April 2025
Impact Factor: 7.67

Benefits,

- Work from anywhere.
- Flexible work hours.
- Unlimited Income Growth.
- Diverse Projects.

IV. EXISTING SYSTEM

No matter how objectively you look at it, the Ambidextrous Search is inevitably seen as a drawback because of how easy it is for a user to become sidetracked by the battery usage due to its ambidextrous nature. Even though the hybrid version we currently use has undergone extensive revision and improvement, several problems still remain. Because they frequently don't charge in time, the original chargers are famously temperamental and have a short lifespan overall. Due to the requirement for several chargers to be used with various devices, their price will inevitably climb, pushing them into the pricey range.

Demerits:

- Selection of appropriate kernel function is a tedious operation and practicality in those functionalities is dimmed.
- Using a large data set requires more amount of time, which reduces the efficiency in the processing of data.
- We cannot predict the features and the outcome of the data, which leads to a wastage of time and cost-effectiveness.
- Even if the data changes are slight, the outcome will be a big difference.
- Those tools are complex and require training to use.

V. PROPOSED SYSTEM

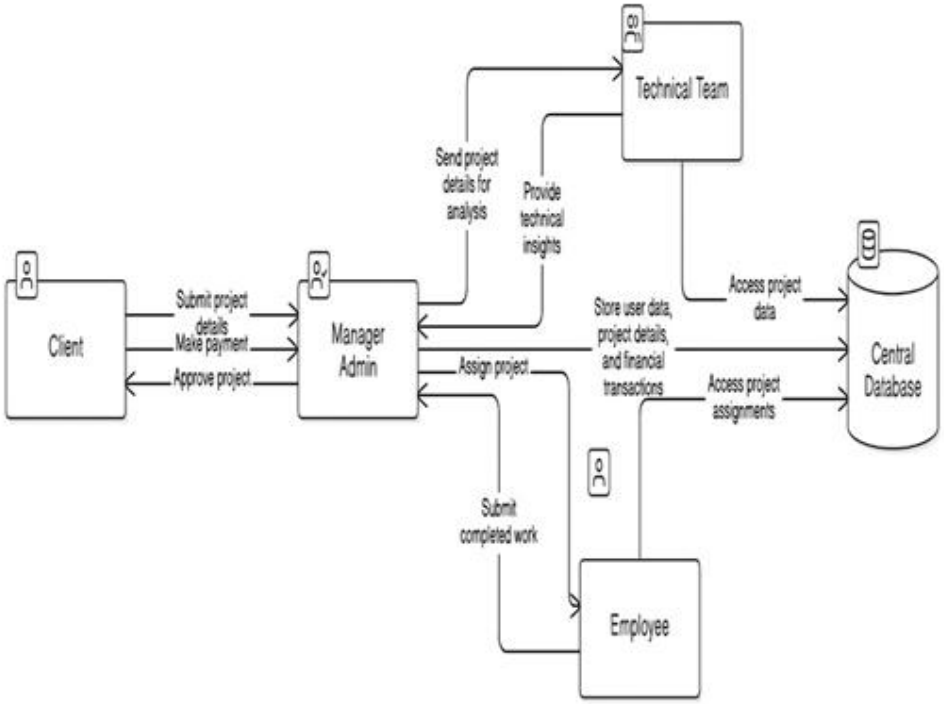
Because of New Venture's capacity for improvisation, every team member is ensured to be able to perform at their greatest level while needing minimum supervision, giving it a competitive advantage. Chaos cannot be planned for, but it can be made to work in your benefit, as we both agree. Numerous categorization applications can use the Naive Bayes method of probabilistic machine learning. For applications like document classification, spam filtering, prediction, and other things, Naive Bayes is commonly employed. The discoveries made by Thomas Bayes, upon which this method is founded, are the source of its name. The name "Nave" refers to the method's combination of features into its model that are separate from one another. Any modifications to the worth of one algorithmic feature have no direct bearing on the worth of any other feature. The main advantage of the Naive Bayes algorithm is that it is a simple- to-use but powerful technique. It is based on a probabilistic model and uses a quickly codable algorithm to make predictions in real time. This algorithm is frequently used to resolve issues in the real world since it can be modified to react quickly to user demands. This system mainly focused to the Budget Prediction, Resource Allocation.

Advantage of Proposed System:

- Our analysis is rapid, easy to understand, and highly accurate.
- Finding the most likely neighbours who are the closest to the current query is made possible by the naive bayes algorithm.
- The model we used is utilised in fields including genomics, data compression, and economic forecasting, which outperforms more complex classifiers despite its simplicity.
- With no data assumptions, there is no need to add more assumptions, adjust many parameters, or create a model. This makes it essential in the case of nonlinear data.
- During the training phase, it doesn't learn anything. The training data are not used to derive any discriminative function. In other words, it doesn't require any training.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 11, April 2025
Impact Factor: 7.67

VI. SYSTEM ARCHITECTURE DIAGRAM



VII. MODULES

List of Modules:

- User Onboarding
- Administration
- Resource Enrollment
- Employee Review

1) User Onboarding:

This module gives the registration process with the analyzer details of name, email id, contact number, date of birth, address and password. With this, the client can log in to the client page. Next client have the option to choose which type of employee need to work for him. Whether he may be freelance employee or in-house employee. Based on client's necessity he can choose his type. Next client will provide the need form with data like category, industry, business scale, number of users, deployment, OS and mobile apps. Next client have an option to view the statistics of the employee he have chosen, before starting the project work. If he is not satisfied, he have an option to change it. Finally the client module needs to do payment process.

2) Administration:

In this module, we do just log in with a pre-set email-id and password. Manager / Admin has full rights in approving client module registration. Admin can able to monitor the entire process happening through the application, without his initial approval, other user's processes are not possible. Manager will receive all clients input entities, then after his clearance the data is then passed to the technical team. The Manager have the employee complete statistics, according

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 11, April 2025
Impact Factor: 7.67

to clients particular request those data are passed to the client. Then client approval or acceptance to start the project is been initiated by the manager. Then final pricing process with the client is been monitored by the admin / manager.

3) Resource Enrollment:
This module gives the registration process with the inventory details of name, email id, contact number, date of birth, address and password. With this, the employee can log in to the employee home page. Next the in-house employee or freelance employee have the option to choose the project and make some remarks on the project if necessary to the manager through mail. Next they will be starting and finishing up the project work. After the completion of project work, they send the file to the manager with a mail intimating about the finish of the project.

4) Employee Review:
This module gives the registration process with the technical team details of name, email id, contact number, date of birth, address and password. With this, the technical team can log in to the technical home page. Then he can able to view the complete details of both freelance and in-house employee details. Next he also have an option to view full client details. Then he gets the input data from client and do the analyzing process and does the prediction. Here they will predict the best budget for the client. Then he will sent the pricing details to the manager / admin for further process.

VIII. CONCLUSION

In a recent study, we discovered that a large-scale simulation model and empirical results supported the contingent effects of new venture competence in boosting firm survival and being a significant factor for success. By emphasizing some particular business environment contingencies, such as macroeconomic conditions, the technological environment, and the labour market, this study adds to the body of knowledge in this area. In this study, we suggest that the effects of contingency variables and those of agency can be studied independently. Due to the disparity between contingency effects and agency effects, we think we will gain a better grasp of how new ventures can improve business viability.

XI. FUTURE WORK

In the future scope need to add some additional features which will provide the technical team with the proper budget allocation. Adding some extra libraries would make it better, libraries like Matplotlib which are used better in statistics and the future prediction would be a great addition in near feature. The unwanted data can also be reduced mainly through the matplotlib with addition to that the skew in the grap indicates the perfect data to be processed.

REFERENCES

[1]. Dr. C. Gayathri Devi, Mrs. I. Arthijone, Mrs. A.S. Angelin Prema, Ms. W. Angelin Felcia, Ms. M. Janaranjani, "Freelancer – Client's Relationship in Digital Marketing – A Commercial Friendship," 2021.
[2]. Chathuranga Rathnaweera, Dilantha Panduke Ratnayake, "Customer Relationship Management Methods for Freelance Audio-Video Content Creators in Sri Lanka," 2023.
[3]. A. Brink, A. Berndt, "Relationship Marketing and Customer Relationship Management," 2009. [4]. B.J. Goldenberg, "CRM in Real Time: Empowering Customer Relationships," 2008.
[5]. M. Khurana, "Information Technology for Retailing," 2010.
[6]. Ruiner, C., Wilkens, U., &Küpper, M., "The Psychological Relationship between Companies and Freelancers", 2013.
[7]. McCallum A., Nigam K., "A comparison of event models for Naive Bayes text classification," 1998.
[8]. Rennie J.D.M., Shih L., Teevan J., Karger D.R., "Tackling the poor assumptions of Naive Bayes text classifiers," 2003. [9]. Wang Y., Li Y., "Research on client satisfaction evaluation model based on data mining," 2011.
[10]. Tian Y., Liu Y., "Prediction of customer satisfaction based on Naive Bayes model," 2017. [11]. Barber D., "Bayesian Reasoning and Machine Learning," 2012.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 11, April 2025
Impact Factor: 7.67

[12]. Krishnamurthy B., "Business models for freelancing platforms: A survey," 2020.
[13]. Sutherland W., Jarrahi M.H., "The sharing economy and digital platforms: A review and research agenda," 2018.
[14]. Bishop C.M., "Pattern Recognition and Machine Learning," 2006.
[15]. Yang S., Lee K., "A review of client satisfaction evaluation in IT service projects," 2012.