ZOutbound Calling Bot for College Admission Using Robotic Process Automation (RPA): Review

[1]Rohit Shinde, [2]Mayur Shivarkar, [3]Somnath Nakate, [4]Mr: Mahendra Sawne

[1-3] UG Student, Computer Science G.H Raisoni College of Engineering and Management Wagholi Pune, India

[2]Assistant Professor, Computer Science G.H Raisoni College of Engineering and Management Wagholi Pune, India

***Abstract:** Robotic Process Automation is a process through which a simple to complex task gets automated with the help of RPA Tools. One of the top tools in today's market is UiPath. UiPath has been named the Leader by Forrester with the highest possible scores in Strategy and Market Presence. UiPath is a Robotic Process Automation tool that is used for Windows desktop automation. It is used to automate repetitive/redundant tasks with the help of drag and drop functionality and eliminates human intervention. We are using the UiPath tool for the creation of this outbound calling bot. The communication of the college department with the students is performed manually and it is a very time consuming procedure. The opportunity to communicate on a one-to-one basis is highly valued. However with many hundreds of applications each year, one-to-one conversations are not feasible in most cases. The communication will require a member of academic staff to expand several hours to find suitable answers and contact each student. It would be useful to reduce his costs and time. The project aims to reduce the burden on the head of admissions, and potentially other users, by developing a convincing outbound call bot.*

***Keywords**: Voice Bot, Outbound Call, Robotic Process Automation(RPA), Ui-Path.*

1. INTRODUCTION

The purpose of this research is to contribute to the solution of the problem of direct communication between applicants and the College. It will definitely prove helpful to many customer service, sales and marketing sectors. It boosts the functionality of the many colleges. It will automate college admission enquiry using RPA ui path.

Although the admissions process works properly as it is, it is very difficult and time consuming to contact a member of staff of the Collage and vice versa. However, the problem would be partially solved if the applicant could talk to a conv3ee3incing voice bot, able to respond to their concerns with information about admissions, booking accommodation, paying fees in installments and what pre-sessional courses are on offer. So we Design and develop an outbound call process solution using RPA UiPath where the robot makes a call to the Students for admission in the College and receives their feedback. Once the feedback is received then the robot saves that feedback in the database in the name of the Students.

The aim of designing this solution is to save the time & effort of a College and Faculty in making calls, surveying students and adding it to the database. The Traditional way of enquiry was lengthy and time consuming with less efficiency. Our Project to create {a school a college and university} voicebot would undoubtedly have a bright scope as this could bring a modification within the approach of interaction between college and students. Hence we are motivated to automate the Admission Enquiry via telephone bot.

2. LITERATURE REVIEW

Prithvi Vasireddy [1] created an autonomous bot that could recommend users a healthy diet based on their specifics like height, weight etc. By collecting user data, a diet recommendation bot on automation is created anywhere that is cost-effective and works at a very fast pace with low maintenance. This bot can further be improved by maintaining a more curated database for each meal and suggesting user's food as a basis of breakfast, lunch and dinner. Meal planning can be very complex. However, by adding additional equations besides macros or (macronutrients) and calorific needs(like balancing of vitamins and minerals), higher precision is achieved and a more effective meal recommendation as compared to an 'actual' human dietician. This way, an efficient, robust, cost -effective model is created.

Sangeeta Kumari et.al [2], have designed Chatbot through which the human and computer can interact .They are using the Classification of Questions method for solving this problem. Questions submitted by users through web applications can be divided into two parts either it is a FAQ question or it is a transactional question. Proposed application is accessible to customers easily and gives response to users anywhere anytime. Chatbot not only gives response but also self-learn and improve itself in order to improve the quality of service.

S.Revathy et.al [3], have developed a system that offers answers and solutions for audit and treating patients after combining descriptions of the illness and the symptoms, diagnostics, predictions and prescription. A Voicebot using Multinomial Naïve Bayes Algorithm is designed. It is used to analyze the queries given by the user and find the probability, which acts as a key that hits the Database to get an output. the uniqueness of the proposed system is that it can interact with the bot via speech.

Iosif Itkin et.al [4], stated that an important property of intelligent virtual agents is their capability to acquire information from their environment as well as from available databases and information services. Software systems become more and more complex and life critical. In order to keep their quality up on the necessary level we build software to test software.

Harshala Gawade et.al [5], proposed methodology makes use of both qualitative and quantitative perspectives, and includes a broad array of approaches such as literature reviews, expert opinions, focus groups, and content validation .The proposed system will have the following modules: A Online Enquiry: Students can enquire about facilities and query related to exams, academics, fee structure, etc. Students can also ask questions related to placement activities. B] Online Chatbot: The result can be shown in the form of images and card format or in text format. The query will be answered on the basis of questions asked and the language model built and also the response media created. Users that want to enquire about the college at the time of admission or any competition held in the college can query to the chat-bot.

Pruk Sasithong et.al [6], implements cloud-based SLAM and determines a map with a cloud server using the Lidar scanning data from a robot. The sensed data is fed to the cloud server via a cellular network and SLAM operation is performed at the aforementioned cloud server, which generates a map and determines the position of the robot which is available online. The benefit of the cloud-based SLAM is that the new strategy can be easily adopted with the same interface between a robot and the cloud server. As far as practical implementation is concerned, the Phone-Bot sends the point cloud data from its Lidar to the cloud server each time the robot moves a certain step. It is assumed that the cloud

server has a map available with them; however, the map is not updated. The scan to map matching algorithm [11] is applied to determine the position of the Phone-Bot and update the map. The point cloud can be processed at the cloud server to determine markers, landmarks and/or features to enhance the speed and accuracy of the map and the robot's positioning. Loop closure [12] is also done at the server as well. Thanks to the high bandwidth cellular network, the computational power and artificial intelligence can be processed in the cloud.

Amey Tiwari et.al [7], express a student bot project built using artificial algorithms that analyze user's queries and understand the user's message. This System is a web application which provides answers to the query of the student. Students just have to query through the bot which is used for chatting. Students can chat using any format there is no specific format the user has to follow. The System uses built in artificial intelligence to answer the query. The answers are appropriate to what the user queries. If the answer is found to invalid, the user just needs to select the invalid answer button which will notify the admin about the incorrect answer. Admin can view invalid answers through the portal via login System allows admin to delete the invalid answer or to add a specific answer of that equivalent question. The User can query any college related activities through the system. The user does not have to personally go to the college for enquiry. The System analyzes the question and then answers to the user. The system answers the query as if it is answered by the person. With the help of artificial intelligence, the system answers the query asked by the students. The system replies using an effective Graphical user interface which implies that as if a real person is talking to the user. The user can query about the college related activities online with the help of this web application. This system helps the student to be updated about the college activities.

Chowdary Raavi et.al [8], creates a more user accessible chat system; a simpler input method using voice is introduced; creating and catering for a more personal and convenient experience. The input voice is then processed and a response is generated. This process places a large processing requirement on the server's processor and memory resources. This limitation is even more evident when a large number of users are to be simultaneously accommodated on the system.

3. PROPOSED SYSTEM

The Traditional way of enquiry was lengthy and time consuming with less efficiency. Our Project to create {a school|a college|and university} outbound call voicebot would undoubtedly have a bright scope as We are building a calling bot which will automatically call , take feedback and save it. Step by Step working process of this automatic solution:

1. Pick the phone no. from database
2. Dial the number using call dialer
3. Place the outbound call
4. Once the call is picked then play the audio for admission purposes
5. Allowing the option to the user to provide their feedback 6. Users provide their feedback if feedback fulfills the condition than ask further questions.
6. At last Play the Thank You audio cut the call.
7. Process records the voice and converts it into text .
8. Saves the feedback in the database against that user
9. number Fig.3 Voice Bot Response WorkiJ   ng Diagram
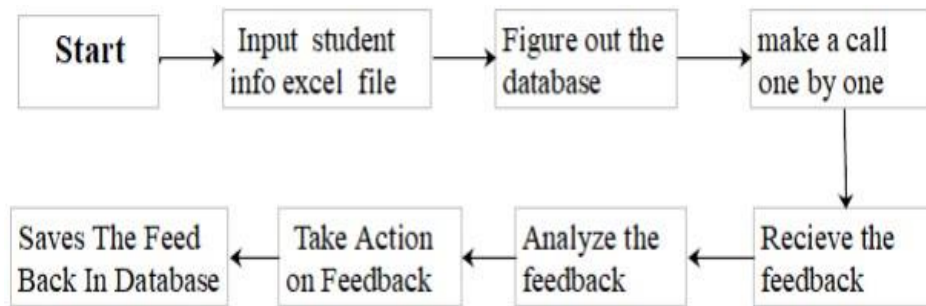10. Repeat the process from Step 1 until all given phone no

Figure 1: System Architecture

Advantage of this project is that it saves the time and effort of College and College faculty in collecting and storing the Fig.4   Designing of Bot in Ui Path Studio feed in the database. College Faculty can make better use of their time. Timely specific outbound call. Example: If any College wants to enquiry about Student admission between 9:00 AM to 5:00 PM then they can schedule the attended robot to make phone calls during this time. The robot will start making non-stop calls in between that time. This will help College to increase their productivity to collect student feedback in place of college faculty efficiency in placing the call.
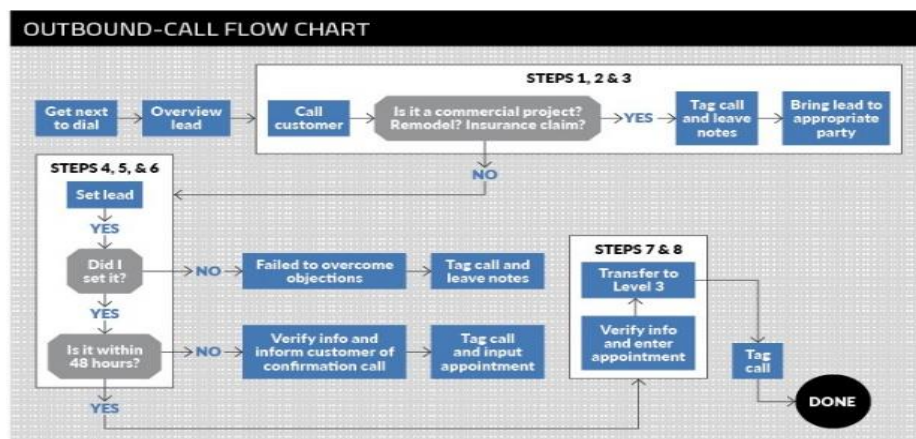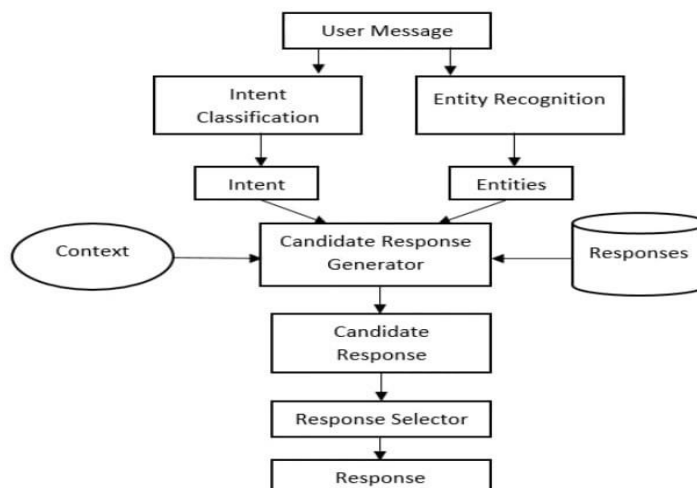
4. RESULT

Fig. 2   Data Flow Diagram

Figure 3: Voice Bot Response Working Diagram

5. CONCLUSION

To improve the current functionalities of College Enquiry, in the future, the scope of the voice bot can be increased by inserting data for all the departments, training the bot with varied data, testing it on live, and based on that feedback inserting more training data to the bot. Some of the new features which can be added to the bot are 1) speech recognition feature through which students can ask their queries verbally and get the answers from the bot, 2) integration with multiple channels such as , SMS, and various social media platforms like Skype, Facebook and Twitter, 3) handling context aware and interactive queries in which bot will be aware of the context of an ongoing conversation with a student, enrollment, 4) adding a capability for the bot to perform analytics based on user's sentiment based on which the bot can be re-trained on human emotions so that more empathy can be added to the bot. It is helpful for many fields like finance and accounting, payroll, human resources, supply chain, customer service, sales and marketing,

REFERENCES:

1. Prithvi Vasireddy,"An Autonomous Diet Recommendation Bot Using Intelligent Automation",IEEE Xplore Part Number:CFP20K74-ART; ISBN: 978-1-7281-4876-2.

2. Sangeeta Kumari1 ,Zaid Naikwadi , Akshay Akole , Purushottam Darshankar ,"Enhancing College Chatbot Assistant with the Help of Richer Human Computer Interaction and Speech Recognition",IEEE Xplore Part Number: CFP20V66-ART; ISBN: 978-1-7281-4108-4.

3. S.Revathy, Niranjani.R, Roslin Kanushya.J,"Health Care Counselling Via Voicebot Using Multinomial Naive Bayes Algorithm",IEEE Conference Record # 48766; IEEE Xplore ISBN: 978-1-7281-5371-1.

4. Iosif Itkin,Andrey Novikov and Rostislav Yavorskiy,"Development of Intelligent Virtual Assistant for Software Testing Team",2019 IEEE 19th International Conference on Software Quality, Reliability and Security Companion (QRS-C).

5. Harshala Gawade,Prachi Vishe,Vedika Patil,Sonali Kolpe,"College Enquiry Chat-Bot System",International Journal of Engineering Research & Technology (IJERT) http://www.ijert.org ISSN: 2278-0181 IJERTV9IS090396 (This work is licensed under a Creative Commons Attribution 4.0 International License.) Vol. 9 Issue 09, September-2020, Published by : www.ijert.org.

6. Pruk Sasithong, Ye Moe Myint, Chalita Kriangprapakit, Chalermporn Kertiopas, Irfan Ullah and Lunchakorn Wuttisittikulkij,"4G Enabled PhoneBot with Cloud based SLAM"-2020.

7. Amey Tiwari,Rahul Talekar, Prof..S.M.PatilL,"College Information Chat Bot System",International Journal of Engineering Research and General Science Volume 5, Issue 2, March-April, 2017 ISSN 2091-2730.

8. Chowdary Raavi , Somraj Digvijay , Mrs.Viji Amutha Mary,"Voice based chat-bot for College Management System",Volume 119 No. 12 2018, 13999-14002 ISSN: 1314- 3395 (on-line version)

9. S. J. du Preez1 , Student Member, IEEE, M. Lall2 , S. Sinha3 , MIEEE, MSAIEE "AN INTELLIGENT WEB-BASED VOICE CHAT BOT" .

10. Ms.Ch.Lavanya Susanna,   R.Pratyusha, P.Swathi,   P.Rishi Krishna,V.Sai Pradeep, "College Enquiry Chatbot", International Research Journal of Engineering and Technology (IRJET), e-ISSN: 2395-0056, p-ISSN: 2395-0072, Volume: 07 Issue: 3 Mar 2020 pp 784-788.

11. Emanuela Haller and Traian Rebedea, "Designing a Chat-bot that Simulates an Historical Figure", IEEE Conference Publications, July 2013.

12. Yoko Nishihara, Hayato Kobayashi, RyosukeYamanishi, Junichi Fukumoto, "Automatic Throwing of Questions Generated from Posted Comments to Activate Text Based Discussions", the 7th International Conference on E-Service and Knowledge Management, pp. 163-167, 2016.

13. Richard S. Wallace, The Anatomy of A.L.I.C.E. Parsing the Turing Test, pp. 181- 210, 2009.

14. K. Toutanova, et al., "Feature-rich part-of-speech tagging with a cyclic dependency network," Proceedings of the 2003 Conference of the North American Chapter of the Association for Computational Linguistics on Human Language Technology-Volume 1, Association for Computational Linguistics, 2003, pp. 173-180.

15. P. A. Ertmer, T. J. Newby, W. Liu et al., "Students' confidence and perceived value for participating in cross-cultural wiki-based collaborations", Educational Technology Research and Development, vol. 59, pp. 213-228, 2011.

16. T. C. T. Kuo, R. Shadiev, W. Y. Hwang, N. S. Chen, "Effects of applying STR for group learning activities on learning performance in a synchronous cyber classroom", Computers & Education, vol. 58, no. 1, pp. 600-608, 2012.