# Customer Support Chat bot with ML

A PROJECT REPORT

*Submitted by,*


Ms. Siri H G - 20211CAI0065
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Ms. E Bhavani - 20211CAI0076
Ms. S Sanjana - 20211CAI0064
Ms. Moulya H M - 20211CAI0175


*Under the guidance of,*

Dr. Swati Sharma

*in partial fulfillment for the award of the degree of*

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING (Artificial Intelligence and Machine Learning)

AT


PRESIDENCY UNIVERSITY

BENGALURU

JANUARY 2025

## PRESIDENCY UNIVERSITY

## SCHOOL OF COMPUTER SCIENCE ENGINEERING

## CERTIFICATE

This is to certify that the Project report **"Customer Support Chat Bot with ML"** being submitted by Siri H G bearing roll number 20211CAI0065, in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering is a bonified work carried out under my supervision.

16 Jan '25

**Dr. Swati Sharma**
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Pro-VC School of Engineering
Dean -School of CSE & IS
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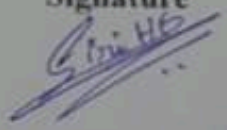
# DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **Customer Support Chat bot with ML** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Science and Engineering( Artificial Intelligence and Machine Learning)**, is a record of our own investigations carried under the guidance of **Dr. Swati Sharma, Professor - Selection Grade, School of Computer Science Engineering & Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

| Student Name | Roll No | Signature |
|---|---|---|
| Siri H G | 20211CAI0065 |  |

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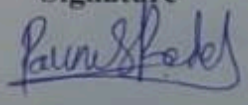
| Pavan S Reddy | 20211CAI0147 |  |

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| E Bhavani | 20211CAI0076 | E. Bhavani |

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| Moulya H M | 20211CAI0175 | Moulya |

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| S Sanjana | 20211CAI0064 | S.Sanjana |

# ABSTRACT

Conversation automation has been revolutionized by the rapid advancements in Artificial Intelligence (AI), Machine Learning (ML), and Natural Language Processing (NLP). One notable invention in this regard is chatbots. These systems, which provide scalable, affordable solutions to improve user engagement and streamline operations, have found appeal in a variety of industries, including social networking, e-commerce, healthcare, and customer service.

From conventional rule-based systems to cutting-edge deep learning and transfer learning models, this paper examines the developments in chatbot creation. The ability of chatbots to analyze natural language inputs, comprehend human emotions, and offer contextually relevant responses has improved thanks to techniques like sentiment analysis, sarcasm identification, and intent recognition. Building efficient systems still requires overcoming obstacles like creating meaningful, sympathetic, and fluid conversations.

With the use of advanced techniques like neural networks, transformers, and Natural Language Understanding (NLU), chatbots are becoming more and more able to provide tailored and flexible interactions. By incorporating external information sources like databases, customer history, and frequently asked questions, response capabilities are further enhanced and reliance on human interaction for routine inquiries is decreased. Nonetheless, intricate and subtle discussions continue to draw attention to chatbot autonomy's shortcomings.

Beyond automating repetitive tasks, chatbots can also be used to improve customer satisfaction. Research indicates that when chatbots are used in addition to traditional help channels, user satisfaction, efficiency, and response all increase. Notwithstanding progress, there are still large gaps in conversational complexity, sarcasm comprehension, and processing confusing inputs, suggesting that there is still much need for further study and development.

Insights into the revolutionary effects of chatbot technology across industries are provided by this paper's thorough examination of existing trends, technological difficulties, and potential. Future chatbots have the potential to transform how people and businesses communicate in the digital age by bridging the gap between human-like conversational capabilities and current limits.

## ACKNOWLEDGEMENT

First of all, we indebted to the **GOD ALMIGHTY** for giving me an opportunity to excel in our efforts to complete this project on time.

We express our sincere thanks to our respected dean **Dr. Md. Sameeruddin Khan**, Pro-VC, School of Engineering and Dean, School of Computer Science Engineering & Information Science, Presidency University for getting us permission to undergo the project.

We express our heartfelt gratitude to our beloved Associate Deans **Dr. Shakkeera L and Dr. Mydhili Nair,** School of Computer Science Engineering & Information Science, Presidency University, and Dr. Zafar Ali Khan N, Head of the Department, School of Computer Science Engineering & Information Science, Presidency University, for rendering timely help in completing this project successfully.

We are greatly indebted to our guide **Dr. Swati Sharma, Associate Professor-Selection Grade** and Reviewer **Dr.Murali Parameswaran, Professor**, School of Computer Science Engineering & Information Science, Presidency University for his/her inspirational guidance, and valuable suggestions and for providing us a chance to express our technical capabilities in every respect for the completion of the project work.

We would like to convey our gratitude and heartfelt thanks to the PIP2001 Capstone Project Coordinators **Dr. Sampath A K, Dr. Abdul Khadar A and Mr. Md Zia Ur Rahman,** department Project Coordinators **Dr. Afroz Pasha** and Git hub coordinator **Mr. Muthuraj.**

We thank our family and friends for the strong support and inspiration they have provided us in bringing out this project.

**Siri H G**

**Pavan S Reddy**

**E Bhavani**

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