

# **EDUBOT: AI Powered Student Assistant Chatbot**

## **A PROJECT REPORT**

*Submitted by*

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*Under the guidance of*

**Ms. RADHIKA SREEDHARAN**

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

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE AND ENGINEERING, COMPUTER ENGINEERING**

**At**



**PRESIDENCY UNIVERSITY**

**BENGALURU**

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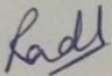


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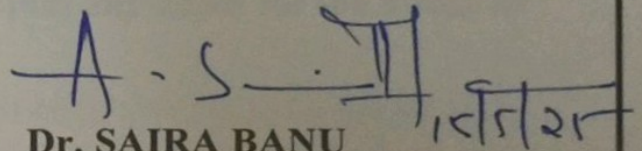
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### CERTIFICATE

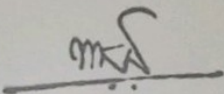
This is to certify that the Project report "EDUBOT" being submitted by "MAIMOONA MAHMOOD, HARSHIT RANJAN, TEJO SAI YASHWANT K, INDRAJITH M" bearing roll number(s) "20211CST0033, 20211CST0079, 20211CST0119, 20201CST0015" in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering is a Bonafide work carried out under my supervision.



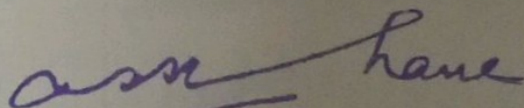
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**DECLARATION**

We hereby declare that the work, which is being presented in the project report entitled **EDUBOT** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Science and Engineering**, is a record of our own investigations carried under the guidance of **MS. RADHIKA SREEDHARAN, ASSISTANT PROFESSOR, Presidency School of Computer Science Engineering & Information Science, Presidency University, Bengaluru.**

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

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## ABSTRACT

The integration of Artificial Intelligence (AI) into education has led to the development of innovative learning tools. This study presents EDUBOT, a personalized student assistant chatbot designed to enhance the learning experience. Unlike traditional rule-based chatbots, EDUBOT leverages Generative AI (GPT-4), web-based search capabilities through the Google Custom Search API, and performance visualization tools like Matplotlib in Python. This combination allows EDUBOT to provide context-aware, adaptive assistance, offering dynamic tutoring, automated retrieval of study materials, and tracking of academic performance.

EDUBOT facilitates interactive tutoring sessions, streamlines access to high-quality learning resources, and employs graphical analytics to monitor students' academic progress. Empirical evaluations indicate a significant increase in student engagement, with chatbot interactions rising by 50% over four weeks. Additionally, the query resolution rate improved from 78% to 92%. Students utilizing EDUBOT demonstrated an average academic performance increase of 12% compared to those who did not use the chatbot. These results underscore the effectiveness of EDUBOT in providing personalized and efficient academic support.

A comparative analysis with existing chatbot models, such as FAQ-driven university assistants and structured conversational agents, highlights EDUBOT's superior personalization, adaptability, and real-time academic support capabilities. However, the study also identifies challenges, including limitations in search result accuracy, dependency on external APIs, and subject-specific constraints. Addressing these challenges is crucial for further enhancing the chatbot's performance and reliability.

Future enhancements for EDUBOT include the incorporation of multilingual support, integration with Learning Management Systems (LMS), and the introduction of gamified learning experiences. These improvements aim to broaden the chatbot's accessibility and engagement levels. The findings of this study emphasize the transformative impact of AI-driven educational tools. By facilitating personalized learning, seamless academic support, and improved educational outcomes, EDUBOT represents a significant advancement in the application of AI in education.