CONVERSATIONAL IMAGE RECOGNITION CHATBOT

A PROJECT REPORT

Submitted by,

DALJEET SINGH - 20211CSE0883
CHANDRASHEKHAR P – 20211CSE0728
PANKAJ SILOT – 20211CSE0730
RODDICK P VINCENT - 20211CSE0718

Under the guidance of,

Ms . Sreelatha P.K

Assistant Professor

in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

At

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY

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CERTIFICATE

This is to certify that the Project report **"CONVERSATIONAL IMAGE RECOGNITION CHATBOT"** being submitted by Chandrashekhar P, Roddick P Vincent, Pankaj Silot, Daljeet Singh bearing roll numbers 20211CSE0728, 20211CSE0718, 20211CSE0730, 20211CSE0883 in partial fulfilment 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.

Ms. SREELATHA P.K
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PRESIDENCY UNIVERSITY

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **CONVERSATIONAL IMAGE RECOGNITION CHATBOT** 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. Sreelatha P.K, Assistant Professor, School of Computer Science and Engineering, Presidency University, Bengaluru.

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

CHANDRASHEKHAR (20211CSE0728)
PANKAJ SILOT (20211CSE0730)
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ABSTRACT

This project presents the development of a Conversational Image Recognition Chatbot that effectively combines the capabilities of computer vision and natural language processing (NLP) to enable intelligent, context-aware dialogue based on visual inputs. At its core, the system utilizes the Google Cloud Vision API to analyze uploaded images, extracting key information such as labels, objects, and text. This extracted data is then interpreted by OpenAI's GPT-4o model, which uses state-of-the-art NLP techniques to generate coherent, informative, and contextually appropriate responses. Users can interact with the chatbot by submitting an image and asking questions about its content, enabling a seamless integration of image-based and text-based communication.

Natural Language Processing plays a pivotal role in this system by allowing the chatbot to understand user intent, maintain context across multiple conversational turns, and deliver responses that mimic natural human conversation. Through advanced techniques such as semantic understanding, contextual modeling, and intent recognition, the chatbot is capable of interpreting complex queries and generating insightful answers grounded in the visual data it receives. The GPT-4o model enables the system to analyze not only the direct meaning of user queries but also their implied context, allowing for nuanced and intelligent interactions that go beyond basic keyword matching.

The user interface, built using Streamlit, provides a clean and interactive platform for users to upload images, input text queries, and receive responses in real time. This responsive front-end enhances the overall user experience by supporting dynamic, multi-turn conversations that evolve naturally based on user input. The system's ability to fuse computer vision and NLP opens the door to a wide range of real-world applications, including customer support, educational tools, content moderation, and accessibility services. By enabling machines to understand and respond to visual content in conversational language, this project demonstrates the powerful potential of integrating vision and language models in creating intelligent, scalable, and user-friendly AI solutions.

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. Mydhili Nair,** School of Computer Science Engineering & Information Science, Presidency University, and **Dr Asif Mohammed** 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 **Ms . Sreelatha P.K, Assistant Professor** and Reviewer **Ms. Rakheeba Taseen, Assistant Professor** School of Computer Science Engineering, Presidency University for his 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 Ziaur Rahman** and Git hub coordinator **Mr. Muthuraju V.**

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

Chandrashekhar P

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