



# An Artificially Intelligent Online Bookstore

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**Abstract**—The Internet has changed business, education, government, healthcare, and even the ways in which we interact with our loved ones—it has become one of the key drivers of social evolution. The e-commerce industry is of particular significance. Online bookstore is an easy to maintain, ready to run, affordable, reliable user-friendly platform for students, teachers, book enthusiasts and everyone in general. The main objective of the bookstore which makes it different from other bookstores is an Artificial Intelligence based Book Recommendation System along with a Chatbot which helps the people who cannot make up their minds or are new to reading in choosing a book. The objective of the bookstore is to provide our users a platform where they can find books according to the author or the title of books. We also provide a shopping cart option in which users can store as many books as they want and there are wide and versatile options from which they can choose. We provide a user-friendly chatbot which is easy to access in case users have problems. This service provides a program that stimulates and processes human conversations, allowing users to interact with digital devices like they are talking to a real person. The project is to address the issue of the time and efforts that a buyer has to put up to find and purchase the books that they want or need. Many times, readers are confused as to what they should read and would like to get book recommendations according to their choices.

**Index Terms**—E-Commerce, Website, Web Application, Online Bookstore, Artificial Intelligence, Chatbot, Book Recommendation System, Emotion Recognition, Facial Expressions

## I. INTRODUCTION

The online book store is an e-commerce and book store put together in an online web application where the customer can purchase books online. Through a web browser the customers can search for a book by its title or author, later can add to the shopping cart and finally purchase the books. The main objective of “online book store” is to provide an essence of online book store through a simple and yet powerful medium. Users can view online book details from anywhere through the internet and purchase it. This is an online book shopping website in which users can decide or let our Artificially Intelligent Chatbot help them decide. Online book store is an online web application where the customer can purchase books online, through a web browser. The customers can select a book, later can add to the shopping cart and finally purchase. A multi-purpose platform for all the books at one place. Provides customers with a wide and versatile variety of books from which they can choose. It'll make it easy to find a perfect book that suits users reading preferences or people who are beginners and just started reading books. A user-friendly Chat-Bot as a customer service will help the end-users with their queries related to the web application.

Developing a web application requires certain essentials. A certain amount of skill of frontend and back-end languages and frameworks, front-



end programming languages such as HTML and CSS, back-end language like python, framework like Django and database like MySQL and software tools like phpMyAdmin is essential. Our project is implemented using HTML, CSS, Python, Django, MySQL and phpMyAdmin. The database is managed using MySQL and the client-server communication is handled by XAMPP. The problem domains of our project are Web Application and Artificial Intelligence.

## II. REVIEW OF LITERATURE

The literature contains various works, each described in Table 1.

**1. Online Book Store [1]**  
This is an E-commerce website which connects each and every vendor together to provide an easiest way to purchase books and keep track of records and books availability. It is a basic website with a combination of both e-commerce and book sales industry put together in a single software.

### 2. Online Book Store [2]

This is an E-commerce website which is the same as the above mentioned but it depends on other courier services to complete the order made by the user. It has an inefficient feedback system.

**3. Online Bookstore [3]** This is an E-commerce website which also provides all the basic features that an ordinary online book store website provides. It has all the basic features of an online bookstore.

### 4. Online Bookstore [4]

This is an E-commerce website which is a simple online web store made by using php, mysql and bootstrap. The database contains many tables. It has all the basic features of an online bookstore with no eBooks and a really small database of books.

### 5. Online Bookstore [5]

This is an E-commerce website which was built using the .NET and SQL server and has similar features to all the online bookstores. It has the basic website with a combination of both e-commerce and book sales industry put together in a single software.

### 6. Flipkart [6]

This is an E-commerce website which is basically an online shopping mart which contains the vast variety of every product. It is an Online Shopping Website.

### 7. Chatbot [7]

This is a Chatbot which basically is a static chatbot which works on certain keywords only and can be used to engage with the customer 24/7.

### 8. Chatbot [8]

This is a Chatbot which is basically a dynamic chatbot which can continuously learn and improve itself to provide an accurate response to the query asked.

### 9. Emotion Detection Tool [9]

This is an emotion detection tool. Human emotion displayed by face and felt by the brain, captured in either video, electric signal (EEG) or image form can be approximated. Human emotion detection is the need of the hour so that modern artificial intelligent systems can emulate and gauge reactions from face. This can be helpful to make informed decisions be it regarding identification of intent, promotion of offers or security related threats.

### 10. Emotion Detection Tool [10]

This is an emotion detection tool which will process the image and will give you an appropriate emotion accordingly.

### 11. Music Recommendation System [11]

This is a music recommendation system. Music has always been known to alter the mood of an individual. Capturing and recognizing the emotion being voiced by a person and displaying appropriate songs matching the one's mood can increasingly calm the mind of a user and overall end up giving a pleasing effect. The project aims to capture the emotion expressed by a person through facial expressions. A music player is designed to capture human emotion through the web camera interface available on computing systems.



TABLE I: List of Projects

| Sr. No. | Title                                                                 | Reference                                                                                                                                                                                     | Date and year | Features/Limitations                                                                                             |
|---------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------------------|
| 1       | "Online Bookstore"                                                    | [11]                                                                                                                                                                                          | 2020          | "Basic website with a combination of both e-commerce and book sales industry put together in a single software." |
| 2       | "Online Bookstore"                                                    | <a href="https://www.freeprojectz.com/paid-projects/nodejs-angular-mysql/online-book-store">https://www.freeprojectz.com/paid-projects/nodejs-angular-mysql/online-book-store</a>             | 2021          | "Basic features of an online bookstore with an inefficient feedback system."                                     |
| 3       | "Online Bookstore"                                                    | <a href="https://studentprojectguide.com/php/online-bookstore-project/">https://studentprojectguide.com/php/online-bookstore-project/</a>                                                     | 2020          | "Basic features of an online bookstore."                                                                         |
| 4       | "Online Bookstore"                                                    | <a href="https://projectworlds.in/free-projects/php-projects/online-book-store-project-in-php/">https://projectworlds.in/free-projects/php-projects/online-book-store-project-in-php/</a>     | 2018          | "Basic features of an online bookstore with no eBooks and a really small database of books."                     |
| 5       | "Online Bookstore"                                                    | <a href="https://people.cs.ksu.edu/~vamsim/vamsi_Report_Draft1.pdf">https://people.cs.ksu.edu/~vamsim/vamsi_Report_Draft1.pdf</a>                                                             | 2015          | "Basic website with a combination of both e-commerce and book sales industry put together in a single software." |
| 6       | Flipkart                                                              | <a href="https://www.flipkart.com/">https://www.flipkart.com/</a>                                                                                                                             | 2007          | "It is an Online Shopping Website."                                                                              |
| 7       | "Emotion Detection Tool"                                              | <a href="https://scholarworks.sjsu.edu/cgi/viewcontent.cgi?article=1643&amp;context=etd_projects">https://scholarworks.sjsu.edu/cgi/viewcontent.cgi?article=1643&amp;context=etd_projects</a> | 2018          | "Emotion detection using OpenCV, dlib, scikit-learn."                                                            |
| 8       | "Emotion Detection Tool"                                              | <a href="https://towardsdatascience.com">https://towardsdatascience.com</a>                                                                                                                   | 2017          | "It is not as accurate as other emotion detection tools."                                                        |
| 9       | "Music Recommendation using Emotion Recognition by Facial Expression" | <a href="https://iopscience.iop.org/article/10.1088/1757-899X/912/6/062007/meta">https://iopscience.iop.org/article/10.1088/1757-899X/912/6/062007/meta</a>                                   | 2015          | "Gives music recommendations based on real-time emotions of a person by analyzing facial expressions."           |

### III. MOTIVATION

Due to the current global pandemic, many of us are not able to access our local bookstores. It is safe and easy to shop while being in the comfort of your own home, without having to step out of the door. It's not easy to find a perfect book that suits your reading preferences or people who are beginners and just started reading books, but with our AI recommendation feature you can find books according to your preferences. Local bookstores don't provide a wide variety of books, but we can provide our customers with a wide and versatile variety of books from which they can choose. Our bookstore also has a very user-friendly interface which is easy to access and use along with a user-friendly Chat Bot.

### IV. PROBLEM DEFINITION

The main objective of the project is to create an online bookstore that allows users to purchase a book based on title, author, and subject. Online Bookstore is an online web application where the customer can purchase books online, through a web browser. The customers can select a book, later can add it to the shopping cart, and finally purchase. A multi-purpose platform for all the books at one place. Provides customers with a wide and versatile variety of books from which they can choose. It's easy to find a perfect book that suits users reading preferences or people who are beginners and just started reading books. A user-friendly Chatbot as a customer service to help the end-users with their queries related to the web application.

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### V. STATEMENT

The major problems that the project is to address include the time and efforts that a buyer has to put up to find and purchase the books that they want or need. Many times, readers are confused as to what they should read and would like to get book recommendations according to their choices.

### A. Proposed Solution

#### 1) Customer Service Chatbot

- Smart agent that never sleeps chatbot can serve your customer around the clock and take good care of the customer even when you need to take a break.
- The simple way to explain complex matters use flexible chatbot responses to lead customers by the hand. Solve their problems before they know they have one.
- Customer services chatbot is basically an AI-based chatbot which gives relevant responses according to the queries.
- It takes input from the user, processes it and compares it to the dataset and gives a relevant response accordingly.

#### 2) Emotion Based Book Recommendation System Using Facial Expression [Figure 1]

Firstly, the book recommendation system captures the user's image, detects the human face and extracts the facial features. From the facial features the trained model extracts the emotions (happy, sadd, angry, etc.) and according to the emotion of the user, the system suggests books in real time by using the Goodreads[12] database.

### VI. RESULTS

- #### 1) Customer Service Chatbot [Figure 2]
- Accuracy of a chatbot can be defined as the percentage of utterances that had the correct intent returned. For the 10 sample utterances that were given to the Chatbot, 5 intents returned were correct, 2 were partially correct and 3 were incorrect.

#### 2) Justification of the Results

- a) Our user-friendly interface helps the user to save some time.
- b) Users can purchase books from anywhere around the world by using our online bookstore which is not possible in physical bookstores.
- c) Our Artificial Intelligence-based Book Recommendation Feature makes it very easy to find a book according to your choice.



- d) Our online bookstore has a wide and versatile variety of books, audiobooks, and eBooks as well.
- e) Our Customer Service Chatbot can be helpful to the end-users with queries related to the web application and also finding the needed books.

## VII. CONCLUSION

Our online bookstore has an upper hand when compared to physical bookstores. The project points and addresses the issue of the time and efforts of a buyer in finding and purchasing the books of their choice, want, or need as many times, buyers are confused as to what they should read and would like to get book recommendations according to their choices in a buyer-friendly environment.

## VIII. FUTURE WORK

As this project goes on, we would like to improve our Emotion Based Book Recommendation System by Facial Expression Model to decrease the processing time. We would also like to add an online payment system. Further, we would like to regularly update the database of our Customer Service Chatbot so that it can be more interactive, helpful, and user-friendly. Also, we would like to make our website more user-friendly, easy to navigate, easy to access, easy to browse. Finally, we would like to improvise the front-end of our website and chatbot to make them more interactive.

## IX. ACKNOWLEDGEMENT

We extend our heartiest thanks to Prof. Nidhi Nigam, Department of Computer Science and Information Technology, Acropolis Institute of Technology and Research, Indore who has been a helping hand to us throughout the entire project as our coordinator, guide, and mentor by providing us with resources and giving us recommendations, suggestions, and ideas from time to time. She has always been a great help to accomplish our project.

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