

# DECISIONMATE: A WEB BASED DECISION-MAKING ASSISTANT

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## ABSTRACT

The "Decision Making Made Easy Using AI" project seeks to automate decision-making by utilizing artificial intelligence's revolutionary potential. The project aims to empower people with useful insights to promote better decision-making through the development of a user-friendly application. The application allows users to delve deeper into the nuances of their decisions, uncovering inherent hazards and potential possibilities by utilizing cutting-edge AI approaches. People are able to make better decisions because of their improved comprehension. The project team uses cutting-edge approaches to improve the decision-making process, giving users a trustworthy tool to traverse challenging situations and improve the results of their decisions. The ultimate goal of this research is to revolutionize decision-making in a variety of fields by enabling people to make wise decisions in a constantly changing environment.

## 1. INTRODUCTION

The "Decision Making Made Easy Using AI" initiative uses artificial intelligence (AI) to streamline and improve the decision-making process. People have many choices to make in the complicated world of today, and these

decisions must be carefully thought out. However, due to a number of considerations, including balancing benefits and drawbacks, identifying risks, and spotting chances, making well-informed judgements can be difficult.

The project focuses on creating a user-friendly AI application to address these

issues. The application equips users to obtain deeper insights into their choices and make informed judgements by incorporating cutting-edge AI capabilities. Users input their decision and choose an analysis method according to their needs using a straightforward interface, such as weighing the pros and cons or performing a SWOT analysis or contextual analysis. Based on these factors, the AI algorithms and natural language processing produce informative responses.

## 2. LITERATURE SURVEY

S. Saravanan and K. Sudha, "GPT-3 Powered System for Content Generation and Transformation," 2022 Fifth International Conference on Computational Intelligence and Communication Technologies (CCICT), Sonepat, India, 2022, pp. 514-519, Doi: 10.1109/CCiCT56684.2022.00096.

Enabling computer systems to understand and generate natural language has been an up-and-coming field of research. Latest advancements in Natural Language Processing (NLP) have made headway progress in facilitating this, like the GPT-3 language prediction model created by Open AI. Given the capacity of the GPT-3 model, this study capitalizes on how the model

can be used to generate and transform content without manual help from humans – how well plausibly GPT3-authored text most nearly passes as human-like prompts for content generation and manipulation purposes. This attempt is presented in the context of automated story writing. It also sheds light on the potential abuses of the tool and its raw capabilities as its limitations.

M. Selim, "Anchoring bias in Corporate decision making and its effects on net income," 2021 International Conference on Decision Aid Sciences and Application (DASA), Sakheer, Bahrain, 2021, pp. 424-429, Doi: 10.1109/DASA53625.2021.9682369

The objective of this study is to analyze the effects of anchoring bias on the cost and net income of the firm or for the corporation and even for a state. In addition, this study also explores the causes of anchoring bias and their effects on faulty decision making and the subsequent and eventual effects on costs and net income. The study is based on theoretical mathematical model where the techniques of partial derivatives have been applied for calculating the contributions of each of the explanatory variables on net income. Since this is a conceptual paper, and therefore, the expected findings of this model suggest

that anchoring bias leads to faulty decision making and as a result, the cost for the firm or for the corporation or for the state increases which eventually decreases net income and performance. The study also uncovers that anchoring bias arises because the decision maker trades his or her own small personal gains and ego in exchange for bigger losses for the firm or for the corporation or for the state. Such corrupt practices erode competitiveness of the firm or for the corporation or even for the state and gradually leads to ruins in the long run. Anchoring bias may also arise because of certain political pressure and corrupt practices which often jeopardizes and undermines national interests. This study is one of the latest attempts to evaluate the effects of anchoring bias based faulty decision making on net income and performance. This study will be immensely useful to decision makers, firms, corporations, governments, policy makers, research scholars, students, and academicians across the world.

M. Kuzlu, F. O. Catak, S. Sarp, U. Cali and O. Gueler, "A Stream lit-based Artificial Intelligence Trust Platform for Next-Generation Wireless Networks," 2022 IEEE Future Networks World Forum (FNWF), Montreal, QC, Canada, 2022, pp. 94-97, Doi: 10.1109/FNWF55208.2022.00025.

With the rapid development and integration of artificial intelligence (AI) methods in next-generation networks (NextG), AI algorithms have provided significant advantages for NextG in terms of frequency spectrum usage, bandwidth, latency, and security. A key feature of NextG is the integration of AI, i.e., self-learning architecture based on self-supervised algorithms, to improve the performance of the network. A secure AI-powered structure is also expected to protect NextG networks against cyber-attacks. However, AI itself may be attacked, i.e., model poisoning targeted by attackers, and it results in cybersecurity violations. This paper proposes an AI trust platform using Streamlit for NextG networks that allows researchers to evaluate, defend, certify, and verify their AI models and applications against adversarial threats of evasion, poisoning, extraction, and interference.

M. Selim, "Application of FinTech, Machine learning and Artificial Intelligence in programmed decision making and the perceived benefits," 2020 International Conference on Decision Aid Sciences and Application (DASA), Sakheer, Bahrain, 2020, pp. 495-500, doi: 10.1109/DASA51403.2020.9317266.

The objective of this study is to examine the perceived benefits of the application of FinTech, Machine Learning and Artificial Intelligence (AI) or (FMAI) in programmed decision making for the consumers, producers or employers. The study is based on a theoretical model, developed step by step to explain consumers' satisfaction and employers' benefits when the company or the employer introduces FinTech, Machine learning and AI for implementing the policies in programmed decisions. The results and findings show that the application of FinTech, Machine learning and AI will maximize the consumers' satisfaction and employers' benefits. The application of FMAI saves time for the consumers, minimizes the number of trips to the offices, and reduces the confrontations with the unpleasant customer service representatives. FMAI are user friendly, and it has the potential to increase consumers' satisfaction as well as employers' benefits by nicely settling the issues with the consumers and other stakeholders. The consumers remain the focal point and will make sure that consumers will not desert the company. This is perhaps one of the latest studies which blends FMAI with programmed decision-making process and shows perceived benefits for both consumers and producers and thus society's total wellbeing will be the maximum.

M. Jhaveri, A. Chirputkar and P. Ashok, "The Efficacy of Artificial Intelligence in making Best Marketing Decisions," 2023 International Conference on Innovative Data Communication Technologies and Application (ICIDCA), Uttarakhand, India, 2023, pp. 225-229, doi: 10.1109/ICIDCA56705.2023.10100132.

Internet of Things (IoT), Blockchain, Data Analytics, Artificial Intelligence, and Machine Learning have revolutionized the way businesses run. AI, the most recent of these disruptive technologies, has enormous promise at strategic levels of doing business and making better strategic decisions. The objective of this research is to learn how Artificial Intelligence may aid in strategic decision-making and to provide a thorough overview of AI in marketing. Because data collection is the most important aspect of marketing, it will be shown, how data can be collected using AI to better understand the target audience, customer profiles, and buying behavior. Till the present time, there are minimal efforts made to assess the relation of AI with the strategic decision-making process, however, this study will bring value to the overall AI applications and how it will help make better marketing decisions. The research studies the implementation of Artificial Intelligence (AI) into marketing applications which improves business performance

### 3. EXISTING SYSTEM

A variety of tools and technologies are currently used in decision-support systems. Decision Support Systems (DSS) offer computer-based assistance for deciphering difficult issues and reaching wise choices. Artificial intelligence is used by expert systems to simulate human expertise in particular fields and provide recommendations and answers. In order to give insights through visualizations and analytics, business intelligence (BI) technologies gather and analyses data from many sources. Platforms for data-driven decision-making use AI and data analytics to glean insights from massive databases. Tools for group decision-making that encourage cooperation and consensus-building among team members are known as collaborative decision-making tools. These current systems seek to improve decision-making by utilizing technology and data analysis to offer insightful information and support for making wise decisions.

#### 3.1 LIMITATIONS OF SYSTEM

The system is implemented by Conventional Machine Learning. The system doesn't implement for analyzing large data sets.

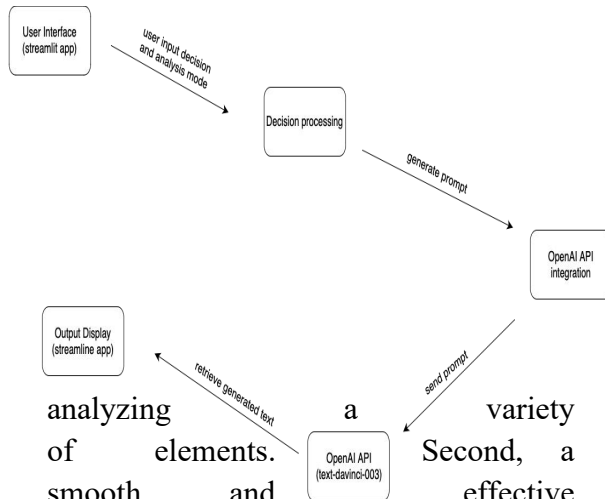
### 4. PROPOSED SYSTEM

The "Decision Making Made Easy Using AI" project's suggested system is an intuitive application that uses artificial intelligence (AI) methods to offer insightful data and support for decision-making. Advanced AI algorithms and natural language processing are used by the system to analyze user input and produce smart responses. Users can input their choice through an intuitive interface and choose an analysis style that best suits their needs, such as weighing the benefits and disadvantages, performing a SWOT analysis, or taking the decision into account in the context of other factors. The suggested system intends to improve comprehension, empower users to make well-informed decisions that are in line with their goals, and streamline the decision-making process.

#### 4.1 ADVANTAGES OF PROPOSED SYSTEM

The "Decision Making Made Easy Using AI" project's proposed solution has a number of advantages over conventional methods. First and foremost, it improves decision-making by utilizing AI algorithms and natural language processing to offer insightful information and assistance. The technology enables users to make more

informed decisions by assessing potential risks and opportunities while



analyzing a variety of elements. Second, a smooth and effective decision-making process is guaranteed by the user-friendly interface. Users can enter their choices and choose from a variety of analysis options that are tailored to their own requirements. Thirdly, the system offers adaptable and knowledgeable insights, utilizing AI technology to examine enormous volumes of data and provide insightful recommendations. This automates labor-intensive analysis procedures, saving time and resources. The suggested approach ultimately optimizes decision outcomes by empowering users to make well-informed decisions that are in line with their objectives and desires.

## 5. SYSTEM ARCHITECTURE

The high-level structure and elements of the system would be depicted in the architectural diagram. It would display

how several components, including the Stream lit library, the Open AI library, and the user interface, interact with one another. The diagram would explain how these parts are interconnected and converse with one another to generate text outputs in response to user input and analysis mode selection. Additionally, would show how the Stream lit application handles user input and how the Open AI API for text production is integrated.

## 6. MODULES:

### 1. User interface module

User Interface Design: This module focuses on creating the web application's user

interface. It includes building layouts, incorporating interactive components, and determining the overall visual style.

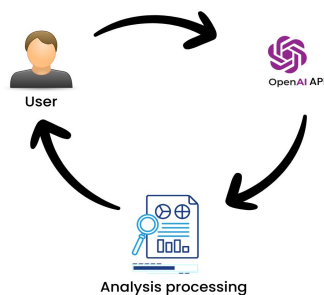
**Handling User Input:** This module manages user input from text fields and dropdown menus. It records the user's decision and analysis mode selection and forwards the data to the next module.

**Figure:1 User Interface Module**

## 2. Decision Analysis Module:

**Open AI Integration:** This module interfaces with the Open AI library and manages communication with the Open AI API. It sends queries with the user's decision and analysis mode, and in return, it receives the generated analysis.

**Analysis Processing:** This module processes and prepares the received analysis for display. It separates the output into lines and does any necessary formatting or filtering.



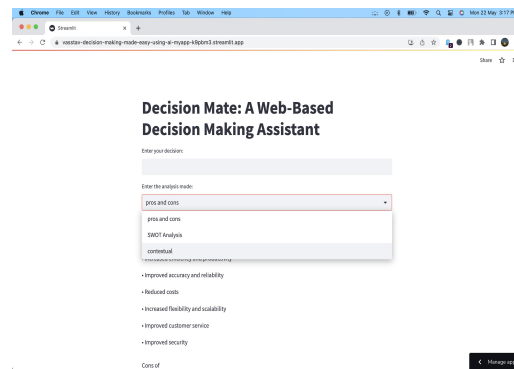
**Figure:2 Decision Analysis**

module

## 3. Application Control Flow Module:

- **User Interface Integration:**

This module connects the

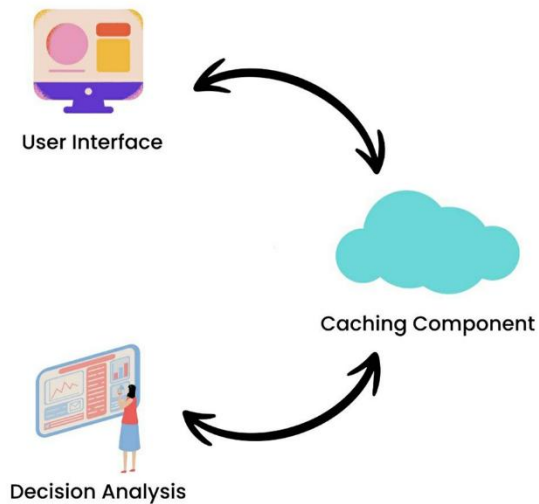


decision analysis module to the user interface module. It regulates the data flow between modules, ensuring that user input is transferred to the analysis module and the resulting analysis is displayed in the user interface.

- **Caching and Performance Optimization:**

This module includes a caching mechanism for efficient output creation as well as performance optimization approaches to

improve the application's responsiveness.



**Figure:3 Application Control Flow Module.**

user's input, the programmer efficiently generates analysis and presents it in a comprehensible manner. This research illustrates the value of intuitive interfaces for improving user experience while showcasing the potential of AI in supporting decision-making processes. The initiative provides a useful tool for people and organization's looking to make educated decisions by fusing cutting-edge AI capabilities with user-friendly design.

## CONCLUSION

Using the Open AI and Stream lit frameworks, the team has successfully created an interactive decision analysis tool. Users can input a decision and select from different analysis modes, such as pros and cons or SWOT analysis, by utilizing the robust text production capabilities of the Open AI library and the user-friendly interface offered by Stream lit. Based on the

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