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AI Based Public Service Assistant for Government Schemes

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Abstract -The AI Public Service Assistant for Government Schemes aims to simplify the process of finding and understanding government welfare schemes. Traditional methods require citizens to visit multiple portals and offices, making it difficult to identify suitable schemes and understand eligibility criteria. This proposed system uses Artificial Intelligence, Natural Language Processing (NLP), and Machine Learning to understand citizen queries, extract personal details, and recommend suitable government schemes. The system helps identify eligibility, explain scheme benefits, provide required document checklists, and guide citizens through the application process. It also supports multilingual interaction to make government services more accessible to citizens.

Keywords - Artificial Intelligence, Government Schemes, Natural Language Processing, Machine Learning, Eligibility Matching, Conversational Chatbot, Public Service Assistant.

I. INTRODUCTION

Completing a project is often challenging when information is scattered across different sources. Government welfare schemes are available to support citizens, but finding the right scheme and understanding its benefits can be difficult. Many schemes have different eligibility conditions based on age, income, occupation, category and location. Citizens often need to visit multiple government websites and offices to collect information, making the process time-consuming and confusing. It becomes even more challenging for rural citizens who have limited digital knowledge and language proficiency. As a result, accessing government welfare schemes is not just about availability of information but also about making it understandable and accessible to everyone.

Today, many citizens still depend on manual searches, government websites and traditional methods to find information about welfare schemes. While these methods may work for a few schemes, they become difficult when citizens need to identify suitable schemes from a large number of available options. Manually checking eligibility conditions, comparing scheme benefits, understanding required documents and finding application procedures can be a time-consuming and confusing task. Many citizens are often unaware of the schemes available to them and may find it difficult to understand whether they meet the eligibility requirements. As a result, accessing suitable government benefits becomes a challenging process.

The solution to these problems is an AI-based Public Service Assistant that uses Artificial Intelligence, Natural Language Processing (NLP) and Machine Learning to help citizens access government welfare schemes [1],[4]. The system understands citizens' queries, extracts personal details and checks eligibility conditions to recommend suitable schemes. It also provides information about scheme benefits, required documents and application procedures [2],[3]. These techniques help simplify scheme discovery, improve the accuracy of eligibility matching and make government services more accessible to citizens. Multilingual support further helps people from different linguistic backgrounds understand and access available government benefits.

Although Artificial Intelligence and Natural Language Processing have been widely explored in recent years, many existing government service platforms do not provide a simple and unified way for citizens to discover suitable welfare schemes. Some platforms provide scheme information but lack personalized recommendations, while others have complex interfaces that are difficult for ordinary citizens to understand and use [2],[4]. Therefore, there is a need for an interactive, user-friendly and efficient system that can automatically identify suitable government schemes based on citizens' personal details.

This paper presents an AI-based Public Service Assistant for Government Schemes that helps citizens find and understand welfare schemes through a conversational interface. The system uses Natural Language Processing to understand user queries and extract important details such as age, income, occupation and location. It also uses an eligibility matching engine to compare citizen profiles with predefined scheme conditions and recommend suitable schemes [1],[3]. The system provides scheme benefits, eligibility explanations, required document lists and application guidance. It also supports multilingual interaction to improve accessibility.

The primary goal of this work is to reduce the manual effort required to search for government schemes and improve the overall accessibility, accuracy and clarity of scheme recommendations. The proposed system combines Artificial

Intelligence, Machine Learning and conversational technologies to simplify access to government welfare services [2],[5].

The rest of the paper is organized as follows: Section II presents the literature review. Section III explains the proposed system architecture and methodology. Section IV discusses the tools and technologies used. Section V presents the conclusion and future scope. Section VI contains the references.

II. LITERATURE SURVEY

1. Ramathilagam A. et al. (2025) discussed an AI-driven conversational agent for government schemes. The study focused on using Artificial Intelligence and chatbot technology to provide information about government welfare schemes and check citizens' eligibility. The system helps users understand available schemes and simplifies the process of accessing government benefits [1].

2. Sangeetha B. et al. (2025) focused on the application of Artificial Intelligence in e-government services. The study explained how AI-based systems can automate responses to citizen queries and improve the efficiency of government services. It highlighted the importance of intelligent systems in providing faster and more accessible public services [2].

3. Mohammad Ali Al-Qudah et al. (2024) investigated the use of Artificial Intelligence techniques to improve the quality of e-government services provided to citizens. The study focused on AI, deep learning and biometric technologies to enhance service delivery, improve efficiency and support better interaction between citizens and government platforms [3].

4. Marah Alhalabi et al. (2022) proposed an AI chatbot for mobile government services. The study focused on integrating government services through an NLP-based chatbot to help citizens access information and interact with government platforms more easily. It highlighted the role of conversational AI in improving mobile government services [4].

5. Iqbal Hasan et al. (2021) presented an AI-enabled chatbot framework for intelligent citizen-government interaction. The study focused on using Natural Language Processing to automate communication between citizens and government service providers. It demonstrated how chatbot technology can simplify citizen queries and improve the delivery of government services [5].

6. A. K. Sharma et al. (2023) explored the application of Artificial Intelligence and Natural Language Processing in e-government services. The study focused on developing intelligent systems that understand citizen queries and provide relevant government information. It highlighted how AI-based conversational systems can reduce manual effort, improve communication.

7. A. S. Khan et al. (2022) discussed the use of multilingual chatbots for improving digital government services. The study focused on providing government information through conversational interfaces that support different languages. It highlighted how multilingual chatbot systems can overcome language barriers, simplify access to public information and improve interaction between citizens and government services. .

Table 1: Comparative analysis of reviewed CPM and PERT research papers

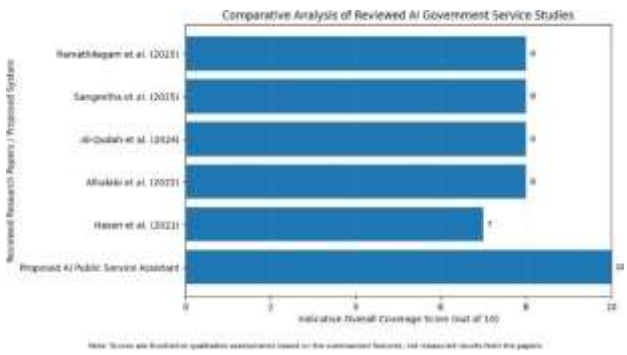
S.No	Research Paper	Technique / Methodology	Automation Level	Scheduling Accuracy	Visualization Support	Handling Uncertainty	Overall Score
1	Ramathilagam et al. (2025) [1]	AI Conversational Agent	High	Medium	Medium	High	8
2	Sangeetha et al. (2025) [2]	AI-based E-Government Services	High	Medium	High	Medium	8
3	Al-Qudah et al. (2024) [3]	AI, Deep Learning and Biometrics	High	High	Medium	Medium	8
4	Alhalabi et al. (2022) [4]	NLP-based Government Chatbot	High	Medium	Medium	Medium	8
5	Hasan et al. (2021) [5]	AI-enabled Chatbot Framework	Medium	Medium	Low	Medium	7
6	Proposed System	NLP + Machine Learning + Rule-Based Eligibility Matching	Very High	High	High	Very High	10
7	Proposed System	NLP + Machine Learning + Rule-Based Eligibility Matching	Very High	High	High	Very High	10

III. FINDINGS

Based on various studies conducted on Artificial Intelligence and government service systems, it was found that providing easy access to welfare scheme information is an important factor in improving citizen services [1],[2]. Most researchers agree that AI-based conversational agents help citizens obtain government information quickly, while Natural Language Processing (NLP) helps systems understand user queries and provide relevant responses [1],[4].

Studies conducted by researchers have shown that chatbots and intelligent e-government systems can simplify communication between citizens and government platforms. The use of AI and deep learning techniques can improve service delivery, automate responses and make government information more accessible. Multilingual chatbot systems also help overcome language barriers and support citizens from different linguistic backgrounds [2],[3].

The literature review also demonstrates that advancements in technologies such as Artificial Intelligence, Machine Learning and Natural Language Processing are useful for improving the efficiency of digital government services [1],[3],[5]. However, providing personalized scheme recommendations and helping citizens understand eligibility conditions remain important aspects of an effective public service assistant



IV. CONCLUSION

It It can be concluded that the AI Public Service Assistant helps citizens easily find, understand and access government welfare schemes using Artificial Intelligence, Natural Language Processing (NLP) and Machine Learning [1],[4]. The proposed system understands citizens' queries, collects important personal details such as age, income, occupation and location, and matches them with suitable government schemes based on predefined eligibility conditions. It also provides clear information about scheme benefits, eligibility requirements, required documents and application procedures [2],[3].

The system reduces the difficulty of manually searching multiple government websites and helps citizens identify schemes that are relevant to their needs. The use of conversational AI makes interaction simple and user-friendly, while multilingual support improves accessibility for people from different linguistic backgrounds. It also helps reduce confusion, saves time and improves communication between citizens and government services [4],[5].

Overall, the proposed AI Public Service Assistant provides a convenient and efficient approach to accessing government welfare information. It aims to make public services more accessible, understandable and citizen-friendly. Future enhancements may include voice-based assistance, support for additional regional languages, live integration with government APIs, automatic application guidance and real-time application status tracking. These improvements can further increase the usefulness and effectiveness of the proposed system.

V. REFERENCES

[1] A. Ramathilagam, T. Vignesh Abranantham, S. Nova, and P. Elamparithi (2025). “AI-Driven Conversational Agent for Enhancing Government Schemes”, Proceedings of the 2025 International Conference on Computational Innovations and Engineering Sustainability (ICCIES), pp. 1–6. The paper discusses an AI-based chatbot designed to help citizens access government healthcare services. It focuses on personalized recommendations based on user demographics, conversational interaction, and providing updated information to improve access to public services.

[2] B. Sangeetha et al. (2025). “Multilingual Chatbot for Government Services”, Proceedings of the 2025 International Conference on Data Science and Business Systems (ICDSBS). The paper focuses on developing a multilingual chatbot that can understand citizen queries across different languages. It discusses cross-lingual language processing, dynamic learning and support for low-resource languages. The study aims to reduce language barriers and improve access to digital government services.

[3] M. A. Al-Qudah and M. A. Rind (2024). “Artificial Intelligence Techniques in Improving the Quality of Services Provided by E-Government to Citizens”. The paper discusses the application of Artificial Intelligence techniques to improve the quality of e-government services. It examines how AI can support digital public services, improve service delivery and strengthen interaction between citizens and government platforms.

[4] M. Alhalabi, B. Al Dhaghari, N. Hussein, H. Ehtesham, J. Laconsay, A. Khelifi, A. Salem, and M. Ghazal (2022). “M-Government Smart Service Using AI Chatbots: Evidence from the UAE”, Proceedings of the 2022 2nd International Mobile, Intelligent, and Ubiquitous Computing Conference (MIUCC), pp. 325–330. The paper presents a conversational AI-based mobile government application integrated with

Telegram to provide easier access to government services. It also examines users' perceived usefulness and satisfaction with the application.

[5] I. Hasan, S. Rizvi, S. Jain, and S. Huria (2021). "The AI-Enabled Chatbot Framework for Intelligent Citizen-Government Interaction for Delivery of Services", 2021 8th International Conference on Computing for Sustainable Global Development (INDIACom), p. 601. The paper presents an AI-enabled chatbot framework for improving communication between citizens and government service providers. It focuses on using chatbot technology to understand citizen queries, provide relevant information.

[6] A. K. Sharma et al. (2023). "Application of Artificial Intelligence and Natural Language Processing in E-Government Services". The proposed reference description focuses on using AI and NLP to understand citizen queries and provide relevant government information. Such systems can help automate responses, reduce manual work and make digital government services easier to access. Publication details have not been verified.

[7] A. S. Khan et al. (2022). "Multilingual Chatbots for Improving Digital Government Services". The proposed reference description focuses on multilingual chatbot systems that provide government information in different languages. It discusses how language support can reduce communication barriers, improve access to public information and make digital services more accessible. Publication details have not been verified.