Automeet: AI-Powered Automated Meeting Transcripts

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Abstract: In today's fast-paced world, effective communication and collaboration are important, as meetings become the core for productive discussion and decision-making. Nevertheless, the manual transcription method continues to plague meetings and be a time-consuming error-prone torture. To overcome this challenge, our project, 'AutoMeet,' presents an innovative solution: a real-time automated meeting minutes generation system, including real-time speech detection, and a summarized meeting summary. AutoMeet operates live during the meeting. Our integrated system relies on the most advanced speech recognition systems to convert spoken words into transcribed text while maintaining the nuances and meaning of the conversation. It then uses text-to-speech technology to intelligently parse the notes into a transcript containing conclusions, key points, and content discussion. Automatic Meeting also includes real-time audio detection and recording of speakers participating in the conversation.

This further enhances the system's ability to capture and rate what the speaker is saying, even in a dynamic conversational environment. AutoMeet revolutionizes the traditional meeting recording process, streamlining these critical tasks, saving organizations time, and increasing productivity. Most importantly, it makes the outcomes of the meeting more effective and efficient, thus making the meeting more efficient, effective, and collaborative across the business and the environment. AutoMeet offers new features to simplify workflows, giving organizations cutting-edge tools to harness the true power of meetings.

Keywords: Automated meeting minutes generation, Meeting summarization, Speech recognition, Text summarization, Real-time speech detection, Artificial intelligence, Deep learning, Machine Learning, Natural Language Processing.

I.　INTRODUCTION

Effective communication and collaboration are essential for success in today's world. Meetings are a platform for good decision-making, but traditionally transcribing meetings is still time-consuming and error-prone. AutoMeet overcomes this challenge by providing real-time real-time networking in minutes.

AutoMeet uses advanced technology to facilitate conversation capture and delivery of inappropriate content. Advanced, instant speech recognition preserves the context of the conversation by converting spoken words into transcribed text. AutoMeet doesn't just write, it also writes smart content.

This summary contains important decisions, important tasks, and discussion points for future reference. Additionally, open and inclusive communication is encouraged despite the existence of speech barriers. AutoMeet saves organizations valuable time and resources by keeping the meeting closed.

It allows people to work better by eliminating the need for extra documentation of each meeting. Proper and well-planned discussions support effective and collaborative meetings. AutoMeet shows the power of innovation. It provides organizations with the latest tools to unlock the true potential of meetings, increase efficiency and productivity, and improve collaboration.

II.   LITERATURE SURVEY

In [1]Megha Manuel et al. [Automated Generation of Meeting Minutes Using Deep Learning Techniques]. International Journal of Computing and Digital Systems (University of Bahrain)(2022) This paper introduces an innovative approach to automate meeting minute generation through deep learning. While it doesn't detail real-time audio intake, it forms the foundation for automated minute creation using automatic speech recognition (ASR). In line with the project's real-time audio intake focus, potential enhancements include real-time integration for improved accuracy and adaptability, multilingual support, efficient real-time transcription, and user-friendly platform integration.

In [2]Balaji V, G. Sadashivappa.[MLLR-Based Speaker Adaptation for Indian Accents] (2017) This paper introduces the MLLR-based speaker adaptation approach for handling Indian accents in speaker recognition. It focuses on adapting speaker models to accommodate regional speech characteristics better. While the paper addresses Indian accents, further exploration and adaptation techniques for a broader range of accents could be a potential area for improvement.

In [3]G. H. Rachman and M. L. Khodra. [Automatic rhetorical sentence categorization on Indonesian meeting minutes](2016) Rachman and Khodra's work focuses on automatic theoretical sentence categorization in Indonesian meeting minutes, using natural language processing techniques. Expanding this work to cover a wider range of languages and meeting types would enhance its applicability and impact.

In [4]Kartik Rathi, Saumy Raj, Sudhir Mohan, Yash Vardan Singh. [A Review of State-Of-The-Art Automatic Text Summarisation] (2022) This paper investigates the latest study, progress, and research made in the field of Text Summarisation. Using the systems to enhance and improve the summarisation system, gives a higher accuracy for the system, giving an accurate summary for the meeting.

III.   SCOPE AND METHODOLOGY

Aim of the project
The primary aim of the AutoMeet project is to revolutionize meeting documentation by developing a real-time, automated system for generating meeting minutes. This system aims to address the limitations of traditional manual transcription, which is time-consuming, error-prone, and hinders meeting productivity.

Existing system
Meeting minutes are always based on written or written notes and discussions after the meeting.

These methods are Time-consuming: Notebooks or data collection can consume a lot of participants' or administrators' time.

Error prone: Dictionaries are error-prone when capturing keywords, phrases, or specific terms. Misrepresentation: The content of the book may not reflect the nuance and context of the entire discussion.

Proposed system
AutoMeet tackles the challenge of time-consuming and error-prone manual meeting minutes by offering a real-time, automated system. The user starts recording the meeting and AutoMeet captures the audio from the microphone. The system then uses Azure Speech Services, Microsoft's cloud-based speech recognition engine, to convert the voice to text.

To ensure accuracy, text is pre-processed to remove noise or errors. These condensed notes form the basis for creating a dialogue that can be further developed with information such as discussion techniques and quotes from the client.

Alternatively, AutoMeet can share text from the speaker or use the brief introduction using a text summarisation module created using transfer learning, to create a summary of key talking points. Finally, users get a good meeting summary that preserves the content of the meeting and makes it useful after the meeting.
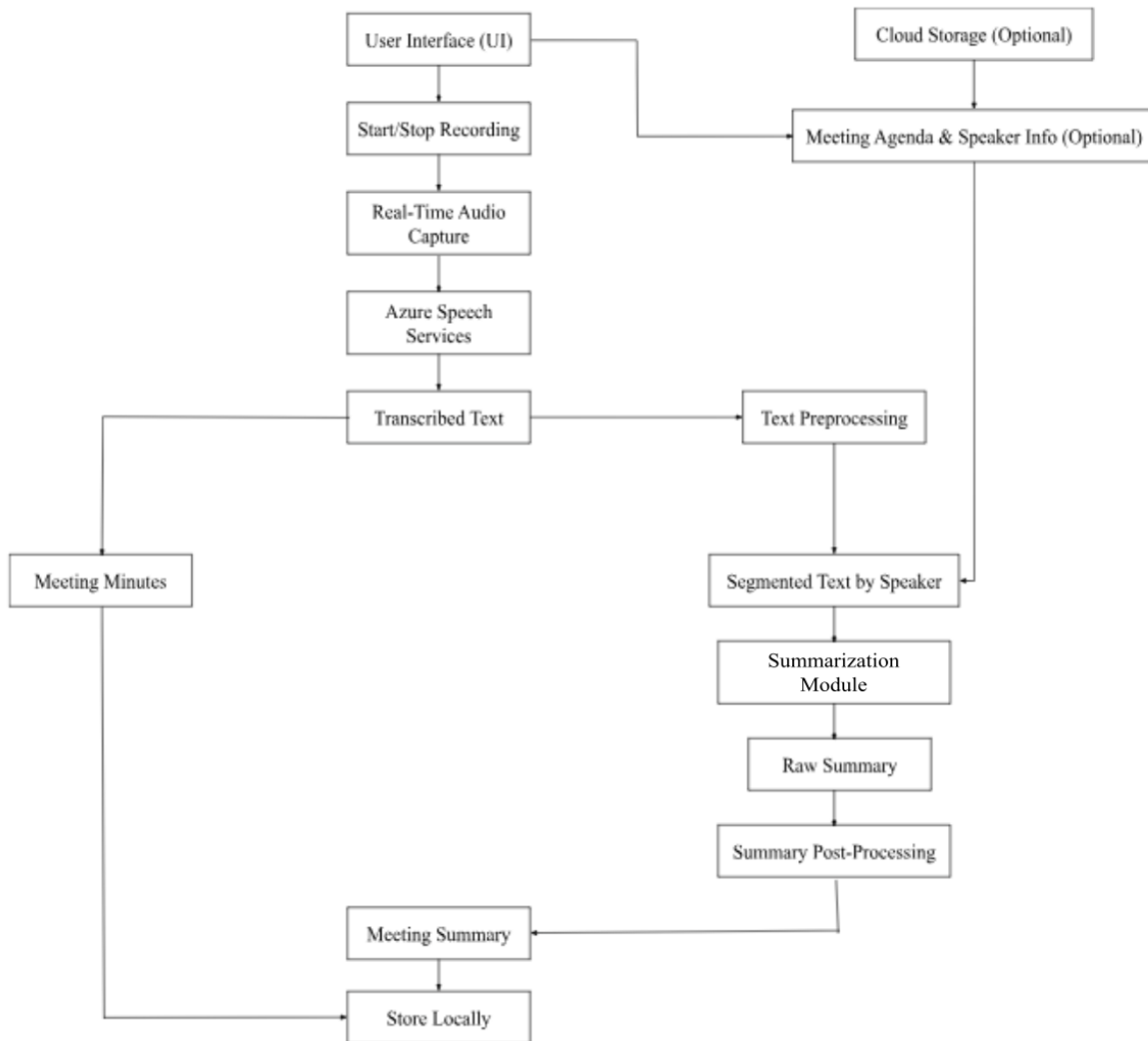
Fig 1. Proposed system

System Architecture

The architecture involves the following components:

Audio recording: A microphone captures the audio from the meeting participants.

Speech Recognition Module: This module instantly converts each speaker's voice into text.

Word Processing Module: This module performs many functions such as noise reduction, text typing, and word processing to improve the quality of the text.

Text Summary Module: This module analyzes the quality of the text and creates a summary highlighting the main points.

User interface: This interface allows the user to start and stop, access the generated dialog, and possibly configure settings such as language selection.
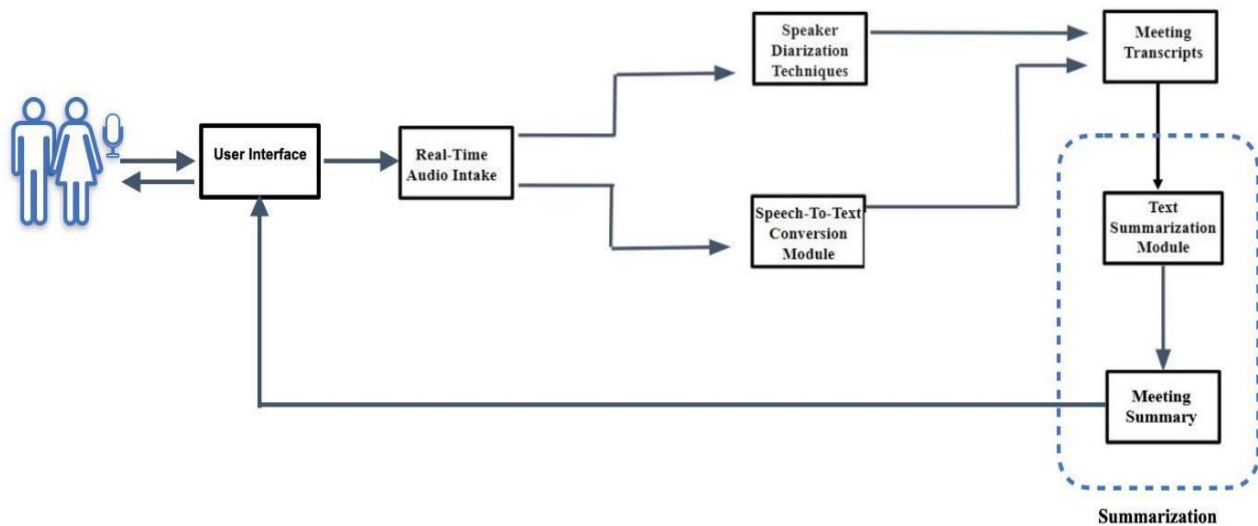
Fig 2. System Architecture

IV. CONCLUSIONS

In conclusion, the project "Automeet: AI-Powered Automated Meeting Transcripts" ushers in a new era of streamlined meeting documentation. By leveraging the power of real-time speech recognition, and intelligent text summarization, AutoMeet delivers impeccably accurate and concise meeting minutes. This not only eliminates the time-consuming and error-prone process of manual transcription but also fosters a more productive and collaborative meeting environment.

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