

Vivekanand Education Society's Institute of Technology



Department of Computer Engineering

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Project Synopsis (2024 - 25) - Sem VII

Career Counseling Meet Summarizer

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Abstract

This project focuses on developing a sophisticated extension for Google Meet, tailored specifically for career counseling sessions. The proposed system integrates advanced speech-to-text technology with Meta's Llama 3, a state-of-the-art large language model, to facilitate comprehensive meeting management. The extension will capture and transcribe the audio from career counseling sessions, subsequently generating accurate and contextually relevant summaries.

Utilizing Llama 3's natural language processing capabilities, the system will offer interactive question-answering features, enabling users to extract specific information from the meeting content effectively. Additionally, the tool will provide data visualizations to enhance the interpretability of insights and trends discussed during the sessions. This approach aims to improve the efficiency of information retrieval and decision-making processes in career counseling, leveraging recent advancements in NLP and AI [1, 2].

Introduction

Career counseling plays a crucial role in guiding individuals through their professional development and job search processes. What unites all types of professional counseling is the role of practitioners, who combine giving advice on their topic of expertise with counseling techniques that support clients in making complex decisions and facing difficult situations. The focus of career counseling is generally on issues such as career exploration, career change, personal career development and other career related issues. [3] Effective counseling sessions often involve extensive discussions and personalized advice, making it essential for counselors to accurately capture and review these interactions. Traditional methods of documenting meetings, however, can be time-consuming and prone to inaccuracies, leading to a need for more efficient solutions.

Recent advancements in Natural Language Processing (NLP) and artificial intelligence (AI) have significantly enhanced the capabilities of automated transcription and summarization tools. For instance, large language models such as Meta's Llama 3 have demonstrated remarkable proficiency in understanding and generating human-like text, offering potential benefits for processing and analyzing meeting content. [4] These models can provide detailed and contextually relevant summaries, thus aiding in the effective management of information.

This project seeks to leverage these advancements by developing an extension for Google Meet designed specifically for career counseling sessions. The extension will integrate high-quality speech-to-text transcription with Llama 3's language understanding capabilities to generate accurate summaries and insights from recorded meetings. Additionally, it will incorporate interactive features for querying meeting content and visualizing key trends, thereby enhancing the overall efficiency of the counseling process. This approach aims to address the challenges associated with manual documentation and provide counselors with a more streamlined and insightful tool for their practice.

Problem statement

In today's fast-paced digital age, career counseling sessions have become essential for guiding people down successful career pathways. However, traditional methods for taking notes, summarizing, and determining outcomes from these meetings are difficult and susceptible to mistakes, which causes delays in the retrieval of information and the making of decisions. This may have a negative impact on how well counseling is delivered. In addition, the lack of modern technologies for automatically analyzing and summarizing meeting information limits counselors' capacity to deliver timely and relevant insights to their clients. It can be difficult to extract useful insights because of the naturally difficult process of documenting and reviewing these sessions, which frequently results in inefficiency. As a result, it can be challenging for both clients and counselors to keep track of progress, pinpoint important topics for discussion, and make decisions based on counseling sessions.

Proposed solution

To address these challenges, we propose the development of an advanced tool specifically designed for career counseling sessions. This tool will leverage speech-to-text technology and Meta's Llama 3 to manage meetings comprehensively. Key features of the proposed solution include:

- Capture Meeting Intel:
 - Call Recording: Record all sessions for future reference.
 - High-Quality Transcriptions: Convert spoken words into accurate text in real-time.
 - Call Analytics: Analyze meeting data to extract valuable insights.
 - Multi-language Support: Provide transcription and analysis in multiple languages.
- Automate Processes:
 - Automated Action Items: Identify and list tasks and follow-ups from the meeting.
 - Human-level Summaries: Generate clear and concise summaries of sessions.
 - Meeting Performance Insights: Evaluate the effectiveness of meetings.
 - AI-generated Key Moments: Highlight important moments from the meeting.
- Close Deals:
 - Coaching: Provide guidance and training based on meeting analysis.
 - 'Ask Me Anything' on Meetings: Offer interactive Q&A about meeting content.

By integrating these features, the proposed tool aims to enhance the efficiency of information retrieval and decision-making in career counseling.

Hardware, Software and Tools requirements

Hardware Requirements

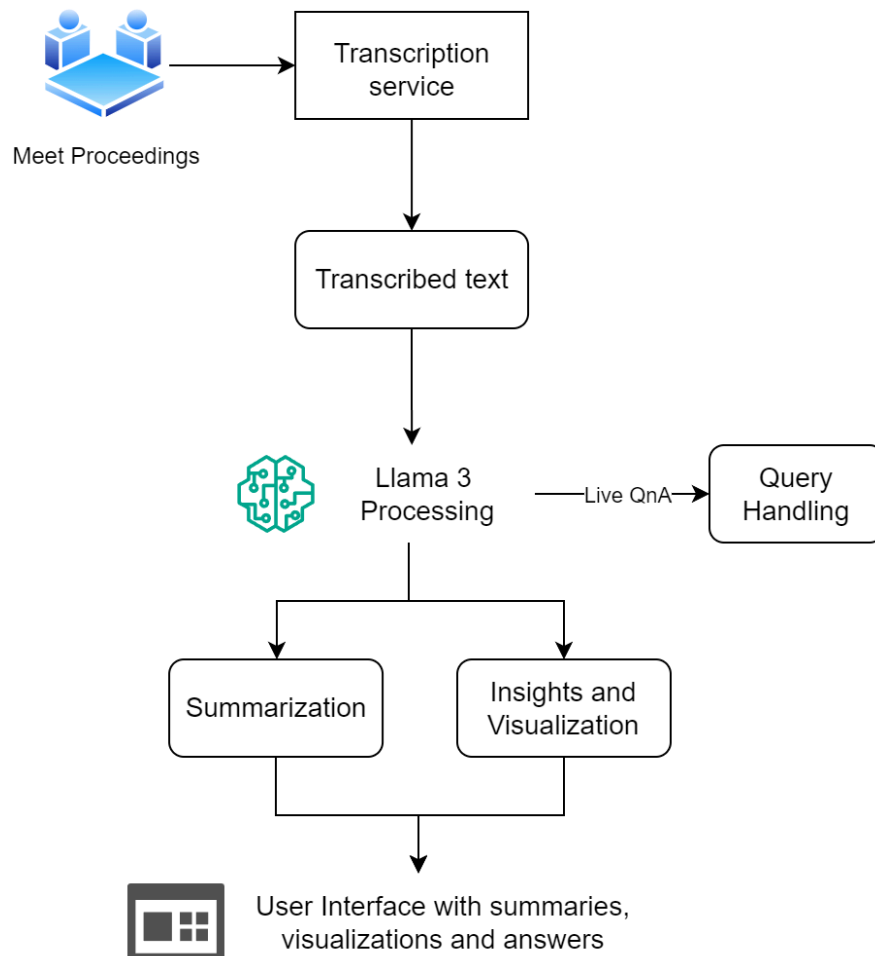
- Computer with a modern processor and at least 8 GB of RAM.
- Graphics Processing Unit (GPU) with CUDA support (recommended).
- Sufficient storage space, preferably SSD.

Software Requirements

- Operating System: Windows, macOS, or Linux.
- Python programming language.
- Deep learning framework (TensorFlow or PyTorch).
- Text-to-speech (TTS) library (pyttsx3 or gTTS).
- Meta's Llama 3 or similar state-of-the-art language model.
- Integrated Development Environment (IDE).

- A database system for storing meeting data and analytics.
- Libraries like Matplotlib, Seaborn, or Plotly for creating data visualizations.
- Application framework (Android VM, React Native, or Flask)

Methodology / Block diagram



Proposed evaluation measures

- **Transcription Accuracy:** Evaluate how closely the transcriptions match the original spoken content, focusing on error rates and overall precision.
- **Summary Quality:** Determine how effectively the summaries capture and present the main points of the sessions, ensuring they are clear and contextually relevant.
- **User Satisfaction:** Gather detailed feedback from users on the tool's ease of use, functionality, and overall satisfaction through surveys and usability tests.
- **Processing Speed:** Measure the time required for the tool to transcribe, generate summaries, and respond to queries in real-time, ensuring it operates efficiently.

- **Processing Efficiency:** Determining the average amount of time needed to summarize, transcribe, and evaluate sessions in order to guarantee prompt processing without sacrificing quality.
- **Multi-language Support:** Assess the tool's performance in transcribing and summarizing content in various languages, checking for accuracy and language coverage.

Conclusion

With the help of Meta's Llama 3 and speech-to-text technology, the solution ensures precise transcriptions in real time as well as thorough meeting analytics. The process of documenting and evaluating sessions is made easier by its capabilities, which include multi-language support, automatic action items, and accurate summaries. The value of the insights gained is further increased by the capacity to assess meeting performance and identify important moments. Counselors can offer more current and relevant advice when they have access to interactive features like "Ask Me Anything" and coaching help. All things considered, this solution enhances the effectiveness of information retrieval and decision-making while also improving the standard of career counseling, resulting in improved career outcomes and more successful client assistance.

References

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- [3] I. T. P. K. Core, 'Career counseling --- Infogalactic: the planetary knowledge core',. 2016.
- [4] A. Dubey et al., 'The Llama 3 Herd of Models', arXiv [cs.AI]. 2024.

Signatures

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