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SUMMAR AI

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ABSTRACT

SummarAI is an intelligent hybrid offline-online desktop application designed to automate the end-to-end process of recording, transcribing, analyzing, and summarizing meetings, lectures, and video content. With the rapid growth of virtual communication and online learning, users increasingly require accurate and structured documentation of spoken information. SummarAI addresses this need by integrating multiple AI technologies into a single, efficient, and easy-to-use platform.

The system records screen and system audio from any meeting platform and also supports uploading external video or audio files. Whisper and Faster-Whisper are used to produce high-accuracy transcripts with multilingual support, speaker labeling, and timestamping. Lightweight LLaMA or Phi-3 Mini models classify the type of content—educational, business, team meeting, or general—and generate adaptive summaries containing key points, decisions, formulas, definitions, tasks, and action items based on the context.

SummarAI enhances information extraction by identifying and capturing diagrams or key frames using FFmpeg and Tesseract OCR, ensuring that important visual details are preserved in the final output. The system includes a meeting-specific chatbot that answers user questions using only the transcript and extracted knowledge, ensuring privacy and relevance without relying on external data sources.

Built using Python with a Tkinter graphical interface, SummarAI is lightweight, beginner-friendly, and easy to deploy. AI components run through PyTorch, while python-docx, reportlab, and JSON handle document generation and data storage, enabling export in formats such as PDF, DOCX, and TXT. The offline-first architecture ensures secure processing, with optional online support for enhanced accuracy.

Overall, SummarAI delivers a powerful, privacy-preserving, and user-friendly solution for automated meeting and video documentation, making it valuable for students, educators, content creators, and professionals seeking organized and insightful summaries.

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