# Agentic AI for Conversation Analysis

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## 1. Motivation

Every call holds a story—missed or maximized. Agentic AI for Conversation Analysis turns passive recordings into strategic assets by using AI agents to decode, summarize, and surface actionable insights instantly. This results in faster decisions, smarter sales, and elevated customer experience.

## 2. System Workflow and Architecture

**Project Workflow Overview**

CrewAI automates audio processing for call center analysis through the following pipeline:

• Audio Retrieval: Downloads audio from a given URL.
• Whisper Transcription: Transcribes audio into text.
• Summarization & Sentiment Analysis: Uses Zephyr (HuggingFace) to generate insights.
• Dashboard: Displays results using Plotly Dash for real-time strategic decisions.

**System Architecture**

The system components include:
• Metadata Fetching (API Integration)
• Audio Downloading Agent
• Whisper Transcriber
• Zephyr Summarizer
• Interactive Dashboard (Plotly Dash)

## 3. Prerequisites

To get started with CrewAI for conversation analysis, ensure the following are installed:

• Python 3.10+

• Git

• pip or conda

• Visual Studio Code (recommended)

• FFmpeg (for audio conversion)

• CrewAI CLI and dependencies

## 4. Install 'uv' Package Manager

On macOS / Linux:

```
curl -LsSf https://astral.sh/uv/install.sh | sh
```

Or, if curl is not available:

```
wget -qO- https://astral.sh/uv/install.sh | sh
```

On Windows (PowerShell):

```
powershell -ExecutionPolicy ByPass -c "irm
https://astral.sh/uv/install.ps1 | iex"
```

Verify installation with:

```
uv --version
```

## 5. Install CrewAI CLI

Use the following command to install CrewAI CLI using uv:

```
uv tool install crewai
```

If prompted to update your shell PATH:

*uv tool update-shell*

Then restart your terminal.

## 6. Clone and Setup CrewAI GitHub Project

Clone the GitHub repository:

*git clone*
*https://github.com/shravanimamidala/AgenticAI_CrewAI.git*

*cd crewai-dashboard*

Create and activate a virtual environment:

- On macOS/Linux:

*python3 -m venv venv*
*source venv/bin/activate*

- On Windows:

*python -m venv venv*
*venv\Scripts\activate*

Install dependencies:

*pip install -r requirements.txt*

## 7. Run the CrewAI Dashboard

To launch the dashboard locally, run:

*python app.py*

Once running, submit an audio URL to start transcription and summarization.