**EVAL AI: AI-Integrated Smart Interviewing System**

# Overview

We have built an expert-matching system that connects candidates with suitable interviewers and provides matching scores. Building on that, the next major enhancement is to integrate a video conferencing interface and embed AI capabilities directly into the live interview process – making the entire process more intelligent, insightful, and efficient.

# Key Features & Workflow

## 1. Video Conferencing Integration

We will use **Jitsi Meet**, a free and open-source video conferencing solution, to host real-time interviews. It will be embedded directly into our platform so that candidates and interviewers can connect seamlessly.

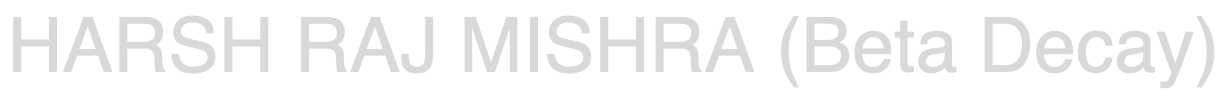
## 2. Live Speech-to-Text Transcription

Each participant’s audio will be captured in real time using browser microphone access.

These audio chunks will be sent to our backend and transcribed instantly using **Whisper (OpenAI)** or **Google Speech-to-Text API**. This gives us the full text context of the interview — who asked what, and how the candidate responded.

## 3. AI-Powered Answer Evaluation & Cross-Questioning

After each candidate response is transcribed, it is sent to an AI engine (e.g., **OpenAI GPT** or **Grok**). The AI evaluates the candidate’s answer based on **relevance, depth, correctness, and clarity**. It then automatically generates **intelligent follow-up (cross-)questions**, which are shown live to the interviewer.



## 4. Real-Time AI Assistant Panel

A small assistant window will appear next to the video call. It displays:

* Live transcriptions
* Evaluation scores (e.g., Relevance: 8.5/10)
* AI-suggested follow-up questions
* Option buttons for the interviewer to take action (Ask, Edit, Ignore)

**5. Facial Expression & Eye Movement Analysis**

To enhance the soft skill evaluation:

* The candidate’s **facial expressions and eye movements** will be analysed using computer vision tools like **MediaPipe** or **OpenCV**.
* The AI will assess **confidence, attention, and honesty indicators**, such as:

o Eye contact consistency o Micro-expressions (nervousness, confusion) o Facial engagement (smile, frown, etc.)

* These insights will contribute to the behavioural analysis score.

## 6. End-to-End Interview Summary & Report

At the end of each interview, the system will generate a complete report containing:

* Full interview transcript
* AI evaluation of each answer
* Cross-question logs
* Expression and behaviour analysis
* Final score breakdown (technical, communication, behavioural)

**7. Intelligent Expert Scoring System**

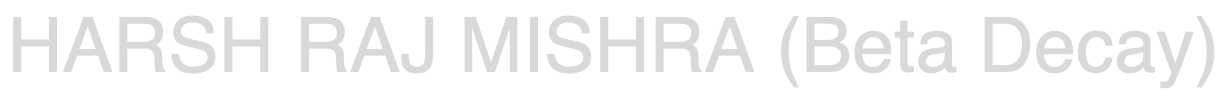
* Combines Matching Score, Profile Score, and Relevancy Score using NLP and machine learning.
* Matching Score: The Matching Score measures how well an expert aligns with the interview board's subject and the candidate's expertise, based on factors like domain knowledge and relevant skills.
* Relevancy score: The Relevancy Score predicts an expert's overall suitability for an interview, considering their Profile Score and additional factors like past interviews taken and Publications, etc.
* Profile Score: Each expert receives a profile score based on multiple matching scores, as we need to match their skills and domain with the interview subject and candidate.

# Tech Stack Overview

* **Video Conferencing:** Jitsi Meet
* **Audio Transcription:** Whisper / Google Speech-to-Text
* **AI Evaluation & Question Generation:** OpenAI GPT / Grok API
* **Expression Analysis:** MediaPipe / OpenCV
* **Frontend:** HTML/JavaScript / React
* **Backend:** Python (Flask or FastAPI) + SocketIO
* **Real-Time Sync:** WebSockets
* **Database:** MongoDB
* **Hosting:** Google Cloud / Render

# Why This is Unique

Unlike existing platforms such as HireVue or Interview.ai, this system supports **live interviewer-candidate interaction**, understands and processes responses in real time, and assists the interviewer with **smart AI-generated follow-up questions**. It also **evaluates facial and emotional cues**, offering a richer understanding of candidate behaviour.



Our platform uses a **custom NLP-based similarity algorithm** to calculate a **Matching Score**, evaluating how well an expert’s skills align with the interview subject and candidate profile. This feeds into a **Profile Score**, and finally a **Relevancy Score**, which predicts overall expert suitability by factoring in experience, past interviews, and publications.

We implement a **dynamic expert grouping strategy**, selecting ideal panels from the top-matching experts, expanding the pool as needed. If internal experts aren't available, the system sources **external experts** using data from platforms like Google Scholar. A built-in **interview scheduler** automates meeting setups and keeps candidates and interviewers updated, reducing manual effort.

Moreover, it is built using **cost-effective open-source tools**, making it fully customizable and extensible. This makes it a truly **next-generation smart interviewing platform**, ideal for modern hiring workflows and scalable across industries.