

# **CODECOLLAB**

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**Abstract:** *The increasing adoption of remote hiring practices has significantly elevated the demand for advanced technical interview platforms capable of managing the complete recruitment lifecycle in a structured and intelligent manner. Traditional remote interview solutions, typically limited to basic video conferencing or isolated coding assessments, result in fragmented workflows that compromise evaluation accuracy and lead to inconsistent hiring outcomes. Furthermore, these systems lack integrated ecosystems that support candidate preparation, real-time collaboration, and data-driven post-interview analysis.*

*This paper proposes CODECOLLAB, a comprehensive AI-powered remote interview platform designed to unify all stages of the technical recruitment process within a single cohesive framework. The platform provides an integrated suite of functionalities, including automated scheduling, resume management, and on-demand interview session creation. At its core, CODECOLLAB utilizes WebRTC-based video communication and WebSocket-enabled collaborative tools, such as a synchronized multi-user code editor and an interactive whiteboard, ensuring low-latency, real-time interaction during technical evaluations.*

*To enhance assessment quality and objectivity, the system incorporates an intelligent layer powered by Large Language Models (LLMs). This includes an Interview Copilot that delivers phase-based guidance, dynamically injects relevant questions from a curated question bank, and manages structured interview workflows. Additionally, the platform generates automated candidate evaluation reports and supports comparative analytics across multiple candidates based on technical proficiency, experience, and cultural alignment. A dedicated Interview Playground further empowers candidates by providing automated test-case evaluation and AI-assisted debugging support, effectively bridging the gap between preparation and performance.*

*The proposed system improves efficiency, consistency, and scalability in technical interviews by minimizing manual intervention and enabling data-driven decision-making. Performance evaluation of the platform demonstrates improvements in system latency, assessment accuracy, and user throughput. By delivering a seamless, intelligent, and end-to-end recruitment experience, CODECOLLAB presents a robust and scalable solution for modern technical hiring environments..*

**Keywords:** Remote Hiring, Technical Interviews, Artificial Intelligence, WebRTC, WebSocket, Collaborative Coding, Large Language Models, Recruitment Automation

