

An AI-Powered Technical Interview Platform

Team: A&T

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Introduction

“The interview process is broken—security gaps, high cost, and poor candidate experience.



NLP- based Resume Parsing

powers automated resume parsing, enabling platforms

Automated Question Generation

Candidate's resume and experience

Real-Time Transcripts and Interview Summaries

Accessibility for recruiters and HR teams

Voice, Personalization & Instant Hints

End to End technical interview

Unmatched Anti-Cheat and Integrity

Monitors copy/paste actions, blocks developer tools and right-click functionality, and detects tab/window switching with escalating warnings and violation logging.

System Architecture & Integration

Hybrid Architecture

CodeSage's hybrid architecture is built on a Flask backend and a robust, interactive frontend using the Monaco code editor and Bootstrap modals.



Real-time Communication

Seamless real-time communication is achieved through Flask SocketIO and browser-native JavaScript, with no installation required and full compatibility across devices.



Scalable Deployments

The architecture supports scalable deployments for enterprises and maintains low latency for candidate interactions.





AI-Powered Interviewing Functionality

1

Google Gemini 2.0 AI



Utilized for real-time voice recognition, context-aware natural language conversation, technical question understanding, and code feedback.

2

Processing Speed

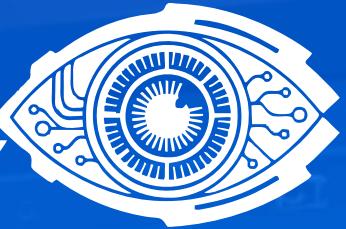
The system can process voice inputs, personalize questions based on résumé parsing, and deliver data-driven coding assessments, all within two seconds per interaction.

3

Human-like Experience

CodeSage creates a human-like interview experience while automating complex technical screening tasks.

Security, Anti-Cheat, and Integrity



Multi-layered Security Suite

- Copy/paste detection that logs violation counts and triggers modal alerts and interview termination after repeated infractions.
- Developer tools and right-click context menu blocking to prevent inspection or manipulation.
- Tab/window switch monitoring using page visibility APIs to detect attempts to move outside the interview environment, escalating warnings and enforcing strict terminations.
- (Optionally) AI-driven camera-based multi-person detection with browser TensorFlow.js COCO-SSD model for visual proctoring integrity.

Visual Integration

Each feature works technically and is surfaced visually via modal warnings that integrate seamlessly into the chat interface.

Enhanced Integrity

These mechanisms deliver greater integrity, deter cheating—even bypassing the deficiencies of traditional text-only exam platforms.



Interview Personalization and Analytics

1

Résumé Module

The résumé upload and parsing module customizes technical interview questions to the candidate's background and experience.

2

Live Coding Analysis

Live coding complexity analysis for immediate feedback, plus learning analytics for hiring managers.

3

Privacy and Compliance

All data flows are privacy-respecting and audit-friendly for enterprise compliance.

User-Centric Frontend Design

Monaco Code Editor

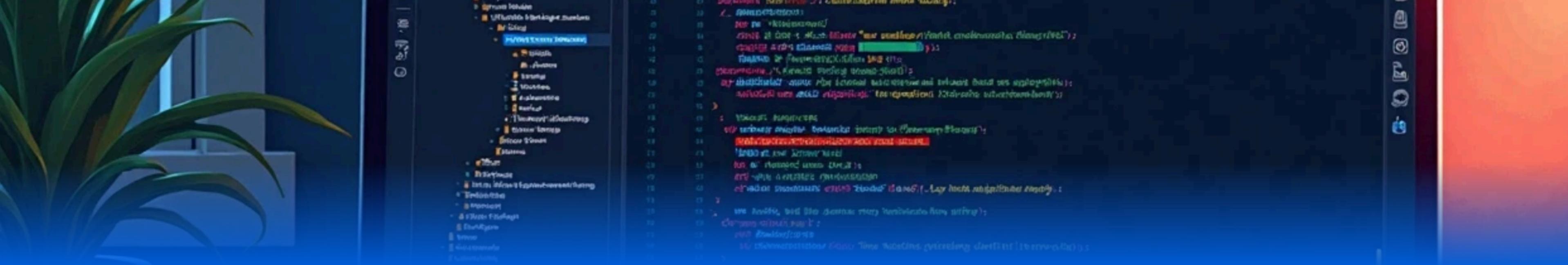
A realistic development experience with syntax highlighting and real-time code updates.

Bootstrap Modals

Used for intuitive security alerts, plus ergonomic layout for candidate comfort and interviewer oversight.

Browser-Based Accessibility

Supports seamless onboarding for candidates and HR teams with zero installation.



Performance and Market Impact

1 Innovation Quantification

Processes candidate input and returns AI feedback in under two seconds and supports hundreds of concurrent sessions across distributed deployments.

3 Comparison with Traditional Platforms

Highlights issues with text-only, slow turnaround, and weak security.

2 Reduction in Interview Time

A 75% reduction in interview time and 4 enterprise-grade anti-cheat measures.

4 Strategic Value

In a \$12 billion technical interview market, CodeSage is the only production-ready system offering conversational AI, robust anti-cheat, and personalized interview flows.



Summary and Future Direction

Achievements

CodeSage achieves for large-scale hiring—speed, rigor, and authentic human engagement, all protected by enterprise security.

Future Enhancements

Projects include scaling up for thousands of daily interviews, expanding analytics, and supporting new verticals for professional skill assessment.



A pixelated landscape featuring a blue sky with scattered white clouds. In the foreground, there are several green trees with blue and purple flowers. A small, brown-roofed building is visible in the middle ground. The overall aesthetic is reminiscent of a video game or a digital artwork.

Thank You