

AI RECRUITER VOICE AGENT

A modern, AI-powered recruitment platform that automates the interview process using voice-based AI agents.





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PROJECT OVERVIEW

Objective:

To develop an AI-driven voice-based recruitment assistant that conducts automated interviews, evaluates candidate responses, and generates instant feedback.

Core Idea:

Replacing manual screening with AI-powered voice interactions — making the recruitment process faster, unbiased, and scalable.

Built Using:

Next.js, Supabase, VAPI AI, OpenAI, Tailwind CSS, and TypeScript

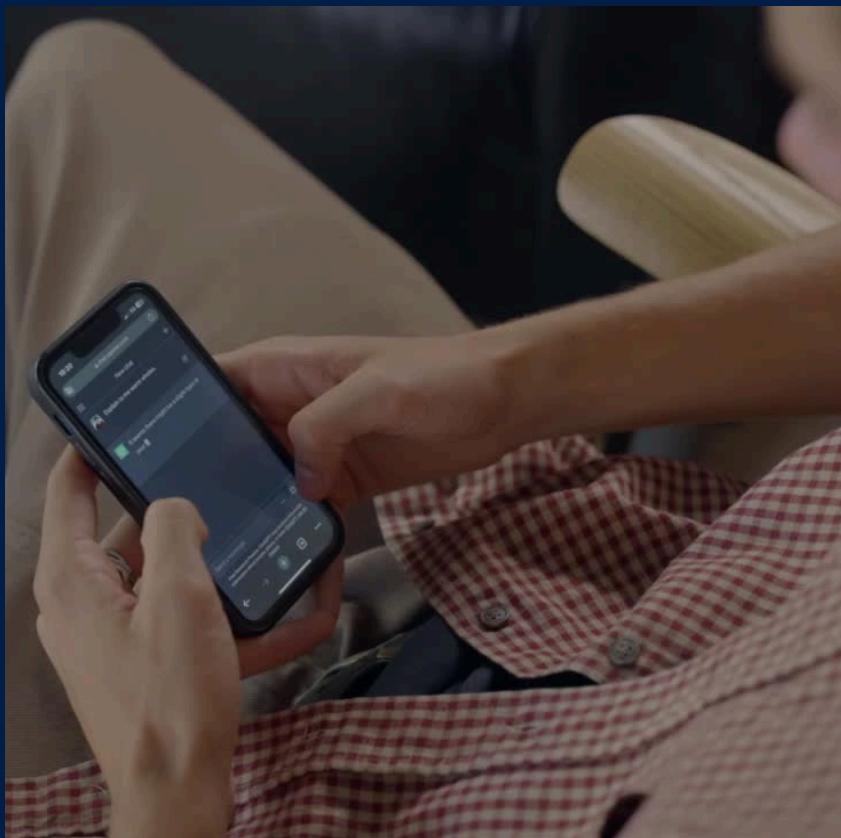




02

WORK DESCRIPTION

Main System Components:

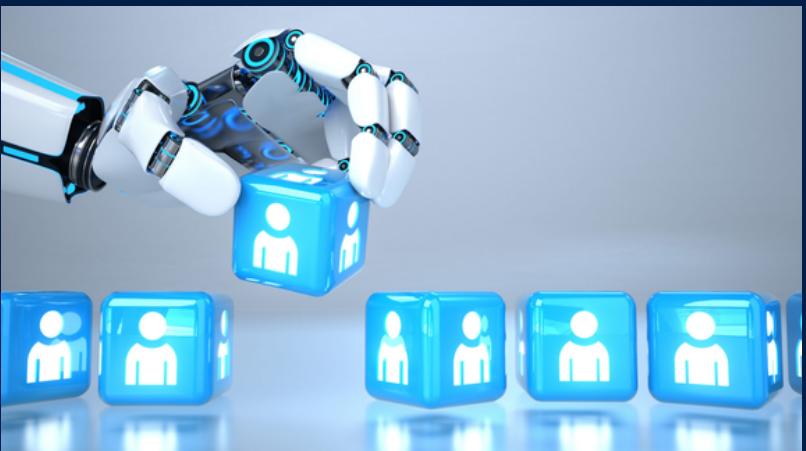


- 1. Voice Agent:** Conducts AI-driven interviews using VAPI AI
- 2. AI Engine:** Generates contextual questions via OpenAI / DeepSeek
- 3. Speech Recognition:** Converts candidate speech to text (Deepgram)
- 4. Feedback Generator:** Analyzes answers and gives automated evaluation
- 5. Dashboard:** Separate portals for Recruiters, Candidates, and Admins

Roles:

- Recruiter:** Creates interviews, tracks analytics
- Candidate:** Attends voice interviews, views feedback
- Admin:** Manages users, credits, and system data

FEATURES



Recruiter

- **AI-powered question generation**
- **Voice-based interviews**
- **Instant feedback and scoring**
- **Credit-based billing system**
- **Recruiter dashboard analytics**



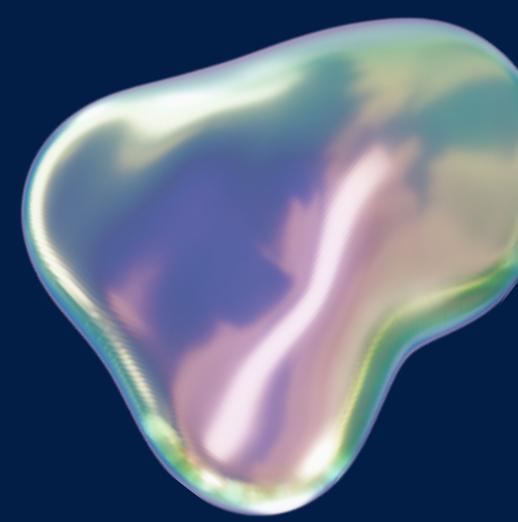
Candidate

- **Real-time AI voice interaction**
- **Personalized feedback**
- **Interview history tracking**



Admin

- **Full user and data management**
- **Platform control and analytics**



04

TECH STACK

Frontend: Next.js 15, React 18, TypeScript, Tailwind CSS, Framer Motion

Backend: Supabase (PostgreSQL, Auth, Realtime DB)

AI & Voice:

- **VAPI AI (Voice Agent)**
- **OpenAI / DeepSeek (Question & Feedback AI)**
- **Deepgram (Speech-to-Text)**
- **PlayHT (Text-to-Speech)**
- **Tools: Axios, UUID, Moment.js, React Dropzone, Radix UI**

SYSTEM ARCHITECTURE



Workflow:

1. Recruiter creates a new interview
2. AI generates job-specific questions
3. Candidate interacts with voice AI agent
4. System records, transcribes, and analyzes responses
5. Feedback is generated and displayed in dashboard

Deployment: Vercel (Frontend) + Supabase (Backend)

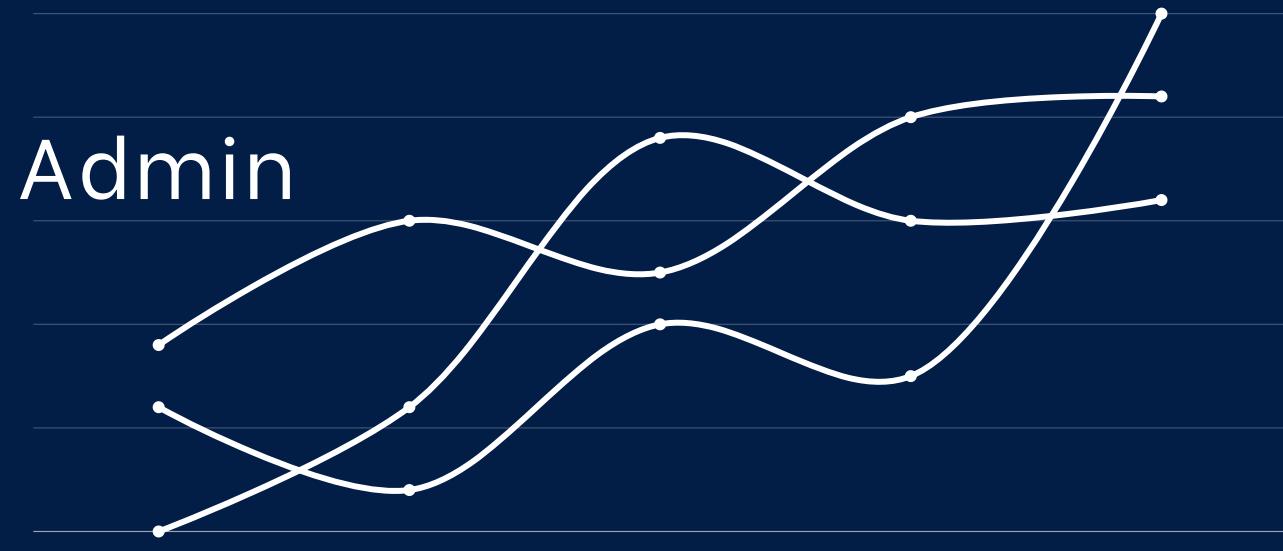
WORK OUTCOME

Project Achievements:

- Fully functional AI-powered interview system
- Real-time voice interaction and analysis
- Role-based dashboard for Recruiter, Candidate, Admin
- Scalable cloud-based architecture

Learning Outcomes:

- Integration of AI APIs with full-stack web apps
- Understanding of NLP, speech, and feedback systems
- Improved teamwork, documentation, and deployment skills





RESEARCH PAPER

Title: “AI-Driven Voice Agents for Automated Recruitment Systems”

Abstract:

The paper explores how AI and voice technologies can revolutionize recruitment through conversational automation, real-time analysis, and AI-driven evaluation.

Highlights:

- Comparison with traditional interview systems
- Voice agent pipeline and architecture
- Accuracy and scalability analysis



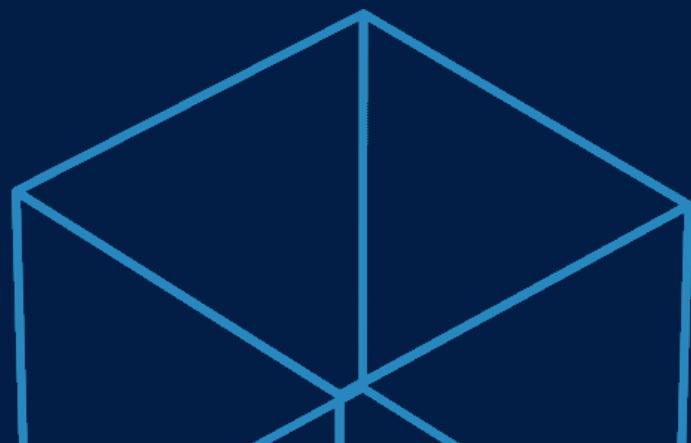
CONCLUSION & FUTURE SCOPE

Conclusion:

The AI Recruiter Voice Agent demonstrates how AI and voice interfaces can automate and enhance hiring, reducing bias and recruiter workload.

Future Enhancements:

- Multilingual support
- Emotion and tone analysis
- Integration with global ATS platforms
- Advanced analytics dashboards



INTERNSHIP CERTIFICATES



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THANK YOU

I AM THANKFUL TO THE AI & DATA SCIENCE DEPARTMENT,
IGDTUW, FOR GIVING ME THE OPPORTUNITY TO WORK AND
LEARN THROUGH THIS INTERNSHIP.