

Avatar Practice Lab - Product Documentation

Visual Guide - Application Pages

1. Home Page (/)

Purpose: Landing page introducing the platform

The screenshot shows the AI Practice Lab homepage. At the top left is the logo "AI Practice Lab". To its right are two buttons: "Sign in" and "Get Started". The main title "Practice Real Conversations Before They Happen" is centered in large, bold, dark blue font. Below it is a subtitle: "A voice-based AI practice lab that helps you think clearly, speak confidently, and handle difficult conversations with ease." A teal "Start Practicing →" button is positioned below the subtitle. At the bottom, there are three feature cards: "Voice-First Practice" (blue icon), "Real Scenarios" (green icon), and "Grounded Feedback" (purple icon). Each card has a brief description.

Feature	Description
Voice-First Practice	Speak naturally with an AI avatar that responds in real-time. No scripts, no pre-written...
Real Scenarios	Practice difficult conversations: giving feedback, handling conflict, persuading...
Grounded Feedback	Receive personalized analysis on clarity, presence, listening, and how you handle tension.

Visual Elements:

- Header with "AI Practice Lab" logo and navigation (Sign in, Get Started buttons)
- Hero section with headline: "Practice Real Conversations Before They Happen"
- Subheadline: "A voice-based AI practice lab that helps you think clearly, speak confidently, and handle difficult conversations with ease."
- Teal "Start Practicing" call-to-action button
- Three feature cards at bottom: Voice-First Practice, Real Scenarios, Grounded Feedback

2. Login Page (/login)

Purpose: User authentication

Welcome back

Sign in to continue practicing

Username

Password

[Sign In](#)

Don't have an account? [Create one](#)

Visual Elements:

- Clean, centered card layout
- "Welcome back" heading with username and password fields
- Teal "Sign In" button
- "Don't have an account? Create one" link

3. Register Page (/register)

Purpose: New user account creation

Create an account

Start practicing conversations today

Username

Email (optional)

Password

Confirm Password

Create Account

Already have an account? [Sign in](#)

Visual Elements:

- "Create an account" heading
- Form fields: Username, Email (optional), Password, Confirm Password
- Teal "Create Account" button
- "Already have an account? Sign in" link

4. Dashboard (/avatar/dashboard)

Purpose: Main user hub showing progress and recommendations

Welcome Back!

You've practiced 8 skills across 32 sessions

[Start Practice](#)

Average Score
2.9/5

Practice Time
0h 24m

Skills Explored
30%

 PRACTICE TIME
0h 24m

 SCENARIOS
8

 SKILLS
10

 SESSIONS
32

What to Practice Next



Recommended Focus

Negotiation & Commercial Acumen

Your current score is 2.4/5. Practice more to improve!

[Practice This Skill](#)

Your Strongest

Boundary Setting & Role Clarity

Score: 3.6/5

Recent Activity

Last Session

12/18/2025

Visual Elements:

- Top navigation: Dashboard, Practice, Results tabs
- Purple gradient hero banner with key metrics (Average Score, Practice Time, Skills Explored)
- Four stat cards: Practice Time, Scenarios, Skills, Sessions
- "What to Practice Next" section with AI-recommended focus areas
- "Your Strongest" skill card

5. Intent Entry / Start Page (/avatar/start)

Purpose: Entry point for starting a practice session

Conversation Practice Lab

What kind of conversation are you preparing for?

Choose how you'd like to practice today. Each path leads to realistic, voice-first practice with an AI avatar.



Practice a common scenario

Browse pre-built scenarios organized by skill. Great for systematic practice.



Practice my real situation

Describe a conversation you're preparing for. We'll help you practice it.



Just explore a topic

Have a thoughtful conversation to explore ideas or reflect on something.



Practice a presentation

Upload your slides and practice presenting to a virtual audience who will ask questions.

Visual Elements:

- Practice mode selection options
- Quick start paths for different practice types
- Navigation to scenarios or custom practice

6. Practice Selection (/avatar/practice)

Purpose: Browse and select practice scenarios

[Back to Dashboard](#)

Practice Scenarios

Choose a scenario to practice with voice-first AI conversations

[All Scenarios](#)[Assertive Communication & Boundary Negotiation](#)[Assertiveness with Empathy](#)[Boundary Setting & Role Clarity](#)[Clarity & Context](#)

Showing 33 scenarios

 Lifting Morale After Organizational... Intermediate A recent reorganization has left your team anxious, demotivated, and unclear about their future. You need to connect with a tea... Voice-First AI Practice	 Saving a Risky Renewal Advanced A long-term customer expresses doubts about renewing due to inconsistent delivery quality. You must listen deeply, rebuild... Voice-First AI Practice
 Handling Pressure to Cut Corners Advanced A stakeholder pressures you to meet a deadline by skipping essential steps or due diligence. You must hold your ground whi... Voice-First AI Practice	 Clarifying Ownership Ambiguity Hard Two departments disagree on who should own a critical phase of a joint project. You need to surface tensions, define boundaries,... Voice-First AI Practice
 Negotiating Vendor Pricing Intermediate A vendor has quoted a price significantly higher than expected. You must negotiate effectively, preserve the relationship, and... Voice-First AI Practice	 Influencing a Resistant Peer Hard You need support from a peer leader, but they insist their team is overloaded and can't help. You must influence without authority... Voice-First AI Practice

Visual Elements:

- Skill category filter sidebar
- Scenario cards grid with images, titles, descriptions
- Difficulty indicators and skill tags
- Search functionality

7. Presentation Practice (/avatar/practice/presentation)

Purpose: Upload PDF presentations for practice

[← Back](#)

1 — 2

 Presentation Practice

Practice your presentation

Upload your PDF slides and practice presenting to a virtual audience. They'll ask questions and provide feedback.

Presentation Topic

e.g., Q4 Sales Strategy, Product Launch Plan, Team Update...

Presentation Context (optional)

e.g., First presentation of our offerings to a new client, a follow-up on project deliverables, quarterly board update...

Describe the situation to help the AI audience ask more relevant questions.

Upload Slides**Visual Elements:**

- Step indicator (Upload, Preview)
- Orange "Presentation Practice" badge
- Presentation Topic and Context input fields
- PDF upload dropzone with drag-and-drop support
- "Virtual Audience Experience" info box

8. Results History (/avatar/results)

Purpose: View all past practice sessions



Your Practice Results

Track your skill development and review session insights

[New Session](#)

 Sessions
35

 Practice Time
26m

 Skills Practiced
8

 Avg Score
2.9/5

[Skills Overview](#)
[All Sessions](#)

[All Types](#)

Motivational Leadership & Empathy

Self-Determination Theory + Psychological Safety

3.0/5

Score Progress

2 sessions

DIMENSION BREAKDOWN

Clarity	3.5	Confidence building	2.0
Empathy	3.5	Meaning-making	2.5

Assertive Communication & Boundary Negotiation

Crucial Conversations + DESC Script

2.8/5

Score Progress

1 session

DIMENSION BREAKDOWN

Alternatives offered	2.0	Boundary clarity	3.0
Directness	4.0	Relationship protec...	3.0

Visual Elements:

- Session list with date, scenario, and score
- Filter and search options
- Skills overview toggle
- Click-through to detailed analysis

Additional Pages (Login Required)

Avatar Selection (/avatar/practice/avatar-select)

- Grid of avatar options with photos
- Avatar details (name, characteristics)
- Selection highlight and Continue button

Pre-Session Setup (/avatar/practice/pre-session)

- Scenario summary card
- Persona, Tone, and Language selectors
- "Start Session" button

Practice Session (/avatar/practice/session)

- Full-screen avatar video
- Session timer countdown
- Microphone controls and End session button

Session Analysis (/avatar/session-analysis)

- Overall score display
- Talk time distribution chart
- Filler words count, Pacing analysis
- Strengths and growth areas

- Full transcript accordion
-

Executive Summary

Avatar Practice Lab is a **voice-first AI conversation practice platform** designed to help professionals practice real-life workplace conversations with realistic AI avatars. The platform provides a safe, judgment-free environment where users can improve their communication skills by engaging in realistic practice scenarios before facing them in real life.

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Product Vision

Problem Statement

Professionals often struggle with difficult workplace conversations - whether it's asking for a raise, delivering feedback, handling conflicts, or making presentations. Traditional training methods (role-playing with colleagues, reading guides) don't provide the realistic, pressure-free practice environment needed to build genuine confidence.

Solution

Avatar Practice Lab uses cutting-edge AI technology to create a realistic conversation partner that:

- Responds naturally to voice input in real-time
- Adapts its persona and tone based on the scenario
- Provides actionable feedback on communication patterns after each session

Target Users

- **Corporate Employees:** Practicing difficult conversations with managers/reports
 - **Sales Professionals:** Rehearsing client pitches and objection handling
 - **HR Professionals:** Preparing for sensitive employee discussions
 - **Anyone seeking communication improvement:** Public speaking, interview prep, conflict resolution
-

Core Features

1. Voice-First Practice

- **Natural Conversation:** Users speak naturally with an AI avatar that responds in real-time
- **No Scripts:** Genuine practice without pre-written dialogue
- **Multiple Languages:** Support for 22 languages including 8 Indian languages with code-mixing capabilities
- **Flag-Based Language Selection:** Redesigned voice input with visual language flags and auto-detection

2. Dual-Mode Avatar System

The platform offers two distinct practice modes:

Mode	Technology	Best For
Video Mode	HeyGen Streaming Avatar SDK	Visual practice with photorealistic avatars, lip-sync
Voice Mode	OpenAI Realtime API + TTS	Faster, audio-focused practice sessions

Both modes use the shared `buildFullScenarioPrompt()` function for prompt parity, ensuring consistent avatar behavior regardless of mode.

3. Realistic AI Avatars (HeyGen Integration)

- **Video Avatars:** Photorealistic streaming avatars with lip-sync and natural movements
- **Avatar Selection:** Users can choose from various avatars with different:
 - Appearances
 - Genders
 - Ethnicities
- **Avatar Customization:** Configure the avatar's behavior before each session

4. Scenario-Based Learning

- **Skill Categories:** Scenarios organized by communication skills
- **Pre-built Scenarios:** Ready-to-use workplace scenarios including:
 - Salary negotiations
 - Performance reviews
 - Conflict resolution
 - Client presentations
 - Difficult feedback delivery
- **Scenario Details:** Each scenario includes:
 - Context/background
 - Instructions for the user
 - Avatar role description
 - Difficulty level
 - Estimated duration

5. Session Customization

- **Persona Selection:** Choose how the avatar should behave (e.g., supportive, challenging, neutral)
- **Tone Selection:** Set the conversation tone (e.g., formal, casual, confrontational)
- **Language Selection:** Practice in 22 languages with strict enforcement - avatars speak only in the chosen language

6. Persona Overlay System

Role-based practice levels that adjust avatar behavior and feedback interpretation:

Practice Level	Avatar Behavior	Expectations
IC/Junior	More supportive, gentler pushback	Forgiving of minor mistakes
Manager	Moderate challenge, balanced feedback	Professional standards
Director	Higher expectations, strategic focus	Strong execution expected
CXO	Maximum challenge, executive presence	Exceptional performance required

Each persona includes:

- Authority constraints and success criteria
- Common mistakes to watch for

- Tone guidance for realistic interactions
- Dynamic opening directives based on scenario mood

Role-Level Auto-Mapping: Users can type their job title (e.g., "Product Manager", "Software Engineer") and the system auto-detects the appropriate practice level using a dictionary of 77+ job titles with fuzzy matching.

7. Cultural Communication Style Presets

GlobeSmart-based presets that modify avatar behavior for intercultural practice:

- **Direct & Task-Focused:** Clear, efficient communication style
- **Indirect & Relationship-Focused:** Emphasis on rapport and context
- Additional regional communication patterns

8. AI-Powered Session Analysis

Post-session feedback includes:

- **Overall Score:** Numeric rating of session performance
- **Talk Time Analysis:** User vs. avatar speaking time distribution
- **Filler Words Detection:** Track usage of "um", "uh", "like", etc.
- **Weak Words Identification:** Words that undermine confidence
- **Sentence Openers Analysis:** How users begin their statements
- **Active Listening Metrics:** Engagement level, questions asked, acknowledgments
- **Pacing Analysis:** Speaking speed and variation
- **Tone Assessment:** Emotional tone throughout the conversation
- **Pause Analysis:** Count and average length of pauses
- **Strengths & Growth Areas:** Personalized recommendations
- **Follow-up Questions:** Suggested practice areas

9. Session Management

- **Queue System:** Manages concurrent sessions when at capacity
- **Session Timer:** 6-minute session limit with countdown display
- **Keep-Alive Mechanism:** Maintains session connectivity (heartbeat monitoring)
- **Pre-warming:** Reduces avatar startup latency by preparing sessions in advance
- **Voice Connection Optimization:** RealtimeSessionPrewarmContext pre-warms OpenAI Realtime tokens and Tavily research during avatar selection

10. Skill Framework Assessment

Uses OpenAI GPT-4o to evaluate transcripts against predefined skill dimensions:

- **Impromptu Communication:** Thinking on your feet
- **Effective Presentation:** Structure, clarity, engagement
- **TKI Conflict Styles:** Thomas-Kilmann Instrument assessment
- **GROW Coaching Framework:** Goal, Reality, Options, Will
- **Emotional Intelligence:** Self-awareness, empathy, regulation

11. Impromptu Speaking Mode

- **Auto-Categorization:** Topics automatically categorized by type
- **Category-Specific Styles:** Avatar conversation adapts to topic category
- **Real-Time Fact Enrichment:** Tavily Search API provides factual context
- **Anti-Hallucination Guardrails:** Avatars only use verified information

12. Presentation Practice

- **Document Upload:** Upload PDF presentations for practice
- **Skill-Based Assessment:** Structure, clarity, and visual design feedback
- **Language Selection:** 15 languages with strict enforcement

- **Virtual Audience Experience:** Practice presenting to AI audience

13. Progress Tracking Dashboard

- **Practice Statistics:** Total time, sessions completed, skills practiced
- **Skill Progress:** Track improvement across different skill areas
- **Session History:** Review past sessions and their analyses
- **Skill Breakdown:** Time spent on each skill category

14. Custom Scenarios

- **User Creation:** Users can create, save, and manage custom scenarios
- **AI Analysis:** AI analyzes custom scenarios for dynamic role generation
- **Automatic Skill Mapping:** Scenarios automatically mapped to relevant skills
- **Context & Objectives:** Define scenario context and success criteria

15. Admin Console (6-Page SaaS Dashboard)

Comprehensive admin interface at /admin :

Page	Purpose
Analytics	Platform-wide usage metrics and trends
User Management	User accounts, engagement tiers, activity
Session Tracking	Active/historical sessions, performance data
Content Performance	Scenario popularity, completion rates
Avatar Usage	Avatar selection patterns, usage statistics
Cost Monitoring	API costs, budget tracking, usage alerts

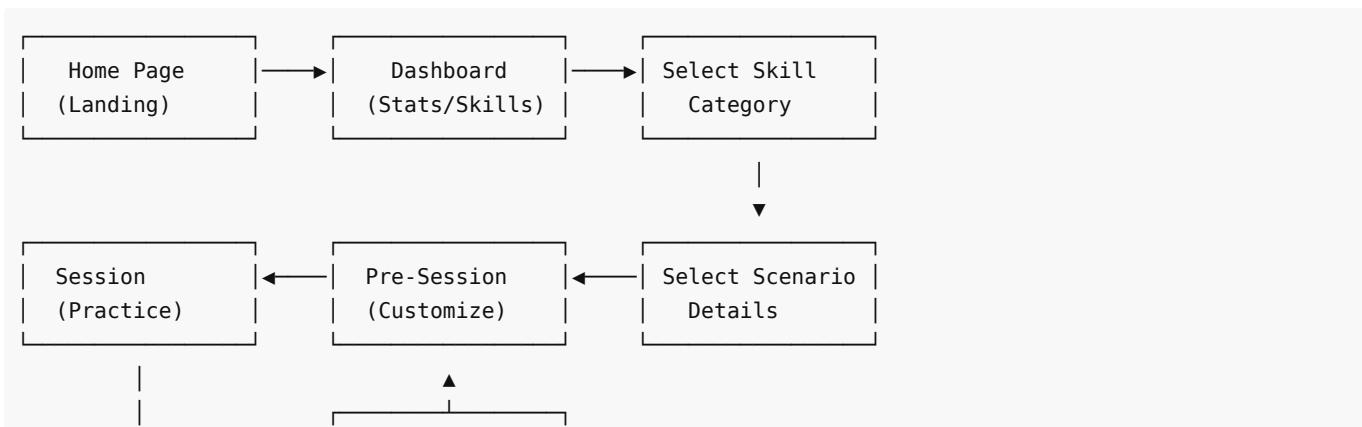
Admin Access: Username: admin , Password: admin123

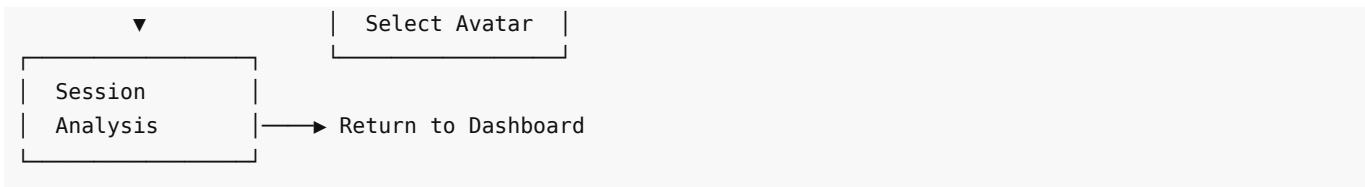
Additional admin capabilities:

- **Scenario Management:** Create, edit, and manage practice scenarios
- **Persona Management:** Configure available avatar personas
- **Tone Management:** Manage tone options for sessions
- **Session Cleanup:** Tools for managing stale sessions
- **Budget Guards:** Cost limits and usage thresholds

User Journey

Flow Diagram





Detailed User Flow

1. Landing Page (/)

- Introduction to the platform
- "Get Started" button leads to dashboard

2. Dashboard (/avatar/dashboard)

- View practice statistics
- See skill categories
- Quick access to start practicing
- View recent session history

3. Practice Selection (/avatar/practice)

- Browse scenarios by skill
- Filter and search capabilities
- View scenario cards with key info

4. Scenario Details (/avatar/practice/scenario-details)

- Full scenario description
- Context and instructions
- Avatar role explanation
- Difficulty and duration info
- Continue to avatar selection

5. Avatar Selection (/avatar/practice/avatar-select)

- Browse available avatars
- Filter by characteristics
- Select preferred avatar
- Pre-warming begins in background

6. Pre-Session Setup (/avatar/practice/pre-session)

- Select persona (avatar behavior)
- Select tone (conversation style)
- Select language
- Review scenario summary
- Start session

7. Practice Session (/avatar/practice/session)

- Real-time video avatar
- Voice-based interaction
- Session timer countdown
- Queue status (if applicable)
- End session button

8. Session Analysis (/avatar/session-analysis)

- Comprehensive feedback
- Metrics and scores
- Transcript review

- Strengths and growth areas
- Return to practice or dashboard

9. Results History (/avatar/results)

- View all past sessions
 - Search and filter sessions
 - Click to view detailed analysis
-

Feature Deep Dive

Interactive Avatar Component

The core of the practice experience is the `InteractiveAvatar` component which:

- Manages WebRTC connection to HeyGen streaming service
- Handles voice input/output
- Displays real-time avatar video
- Manages conversation state
- Captures transcript for analysis

Session Timer System

- Sessions are limited to **6 minutes** (360 seconds)
- Visual countdown timer displayed during session
- Warning displayed when 1 minute remains
- Automatic session termination on expiry
- Heartbeat system to keep sessions alive

Queue Management System

When all available session slots are in use:

- Users can join a queue
- Queue position is displayed
- Estimated wait time calculated
- Notification when slot becomes available
- 30-minute queue expiry

Pre-warming System

To reduce avatar startup latency:

- Token is pre-fetched when user enters avatar selection
 - Session preparation begins in background
 - Reduces perceived wait time for users
-

Technical Architecture

Stack Overview

Layer	Technology
Frontend	React 18, TypeScript, Vite
Styling	Tailwind CSS, Radix UI
State Management	React Query, React Context
Routing	React Router DOM v6

Backend	Node.js, Express, TypeScript
Database	PostgreSQL (Neon Serverless)
ORM	Drizzle ORM
File Storage	AWS S3
Avatar Streaming	HeyGen Streaming SDK
AI/Voice	OpenAI (GPT, Whisper, Realtime API)

Project Structure

```
avatar-practice-lab/
├── api/                                # Backend Express server
│   ├── routes/                            # Main API endpoints
│   │   └── avatar-simulator.ts
│   ├── middleware/                         # Authentication middleware
│   │   └── auth.ts
│   ├── utils/                             # OpenAI integration
│   │   ├── openai-client.ts
│   │   └── s3.ts
│   ├── storage.ts                          # Database operations
│   └── index.ts                           # Server entry point
├── ui/                                    # React frontend
│   ├── pages/                            # Page components
│   │   ├── home/                           # Landing page
│   │   ├── dashboard/                     # User dashboard
│   │   ├── practice/                      # Practice flow pages
│   │   ├── results/                        # Session history
│   │   ├── session-analysis/             # Analysis view
│   │   └── admin/                          # Admin pages
│   ├── components/                        # Reusable components
│   │   ├── ui/                            # Design system components
│   │   │   ├── InteractiveAvatar.tsx
│   │   │   ├── SessionTimer.tsx
│   │   │   └── QueueStatusBanner.tsx
│   │   ├── contexts/                      # React contexts
│   │   ├── hooks/                         # Custom hooks
│   │   └── lib/                            # Utilities and configs
├── shared/
│   └── schema.ts                          # Database schema
└── database/
    ├── migrations/                      # SQL migrations
    └── seeds/                            # Sample data
```

Database Schema

Core Tables

Table	Purpose
users	User accounts and authentication
skills	Communication skill categories

scenarios	Practice scenarios with instructions
personas	Avatar behavior configurations
tones	Conversation tone options
avatars	Available avatar configurations

Session Tables

Table	Purpose
roleplay_session	Individual practice sessions
ai_sessions	AI-powered session metadata
transcripts	Session transcript records
transcript_messages	Individual messages in transcripts
ai_session_analysis	Post-session analysis results

HeyGen Management Tables

Table	Purpose
heygen_sessions	Track active HeyGen streaming sessions
heygen_queue	Manage waiting queue for sessions

Key Relationships

```

users ——— skills (created by)
      |—— scenarios (one skill → many scenarios)
      |—— roleplay_session (user sessions)
      |—— transcripts (session transcripts)
      |—— heygen_sessions (active sessions)

scenarios ——— scenario_skills (many-to-many with skills)

heygen_sessions ——— heygen_queue (queue → assigned session)

```

API Reference

Scenario Endpoints

Method	Endpoint	Description
GET	/api/avatar/get-scenarios	List all scenarios (filter by skill/role)
POST	/api/avatar/save-scenario	Create new scenario
POST	/api/avatar/scenario	Create scenario
PUT	/api/avatar/scenario/:id	Update scenario
GET	/api/avatar/skills	Get all skill categories

Session Endpoints

Method	Endpoint	Description
POST	/api/avatar/session/start	Start tracked HeyGen session
GET	/api/avatar/session/status	Get session status and remaining time
POST	/api/avatar/session/heartbeat	Keep session alive
POST	/api/avatar/session/end	End session gracefully
GET	/api/avatar/get-access-token	Get HeyGen access token

Transcription & Analysis

Method	Endpoint	Description
POST	/api/avatar/transcribe	Transcribe audio using Whisper
POST	/api/avatar/analyze-session	Generate session analysis
GET	/api/avatar/session-analysis/:id	Get analysis by ID
POST	/api/avatar/save-transcript	Save transcript messages
GET	/api/avatar/get-transcript	Get transcript by ID
GET	/api/avatar/get-transcripts	Get user's transcripts

Queue Management

Method	Endpoint	Description
GET	/api/avatar/session/availability	Check session availability
POST	/api/avatar/session/queue/join	Join waiting queue
GET	/api/avatar/session/queue/position	Check queue position
POST	/api/avatar/session/queue/leave	Leave queue
POST	/api/avatar/session/cleanup	Admin cleanup of stale sessions

Configuration

Method	Endpoint	Description
GET	/api/avatar/personas	List personas
POST	/api/avatar/personas	Create persona
PUT	/api/avatar/personas/:id	Update persona
GET	/api/avatar/tones	List tones
POST	/api/avatar/tones	Create tone
PUT	/api/avatar/tones/:id	Update tone

Third-Party Integrations

HeyGen (Avatar Streaming)

- **Purpose:** Provides realistic, photorealistic AI avatars with real-time video streaming
- **SDK:** [@heygen/streaming-avatar](#)
- **Key Features Used:**
 - Streaming avatar video
 - Real-time lip sync
 - Voice interaction
- **Limitations:**
 - 6-minute session limit per streaming session
 - 100 concurrent session limit on paid plan
- **Cost Model:** Per-minute streaming charges

OpenAI

- **Purpose:** Conversation AI and session analysis
- **APIs Used:**
 - **Whisper:** Audio transcription
 - **GPT-4:** Session analysis and feedback generation
 - **Realtime API:** Voice-based AI conversations
- **SDK:** [@openai/agents](#) for realtime voice

AWS S3

- **Purpose:** Audio recording storage
- **Usage:** Store session audio recordings for later analysis/review

Tavily Search API

- **Purpose:** Real-time fact research for impromptu conversations
- **Usage:** Provides factual context during impromptu speaking practice
- **Anti-Hallucination:** Ensures avatar responses are grounded in verified information

Neon Database

- **Purpose:** PostgreSQL database hosting
- **Type:** Serverless PostgreSQL
- **SDK:** [@neondatabase/serverless](#)

Current Limitations

Technical Limitations

1. **Session Duration:** 6-minute maximum per HeyGen session
2. **Concurrent Sessions:** 100 maximum on paid HeyGen plan
3. **No Offline Mode:** Requires internet connection
4. **Browser Compatibility:** Best experience on Chrome/Edge (WebRTC requirements)

Feature Limitations

1. **No Mobile App:** Web-only currently
2. **Limited Languages:** Primary support for English
3. **No Video Recording:** Sessions are audio-only for analysis
4. **Single User Sessions:** No multi-party practice scenarios

Potential Enhancements

Short-Term (Quick Wins)

1. **Session Recording Playback:** Allow users to replay their sessions
2. **Progress Charts:** Visualize improvement over time
3. **Scenario Favorites:** Save favorite scenarios for quick access
4. **Email Notifications:** Session reminders and progress reports
5. **Shareable Results:** Generate shareable practice summaries

Medium-Term (1-3 Months)

1. **Custom Scenario Creation:** Let users create their own scenarios
2. **Team/Organization Features:** Group management and shared progress
3. **Leaderboards:** Gamification with progress rankings
4. **Practice Streaks:** Encourage daily practice habits
5. **Extended Session Duration:** Longer practice options
6. **Scenario Templates:** Pre-built templates for common use cases

Long-Term (3-6 Months)

1. **Mobile Application:** Native iOS/Android apps
2. **Multi-Language Expansion:** Full localization
3. **Video Analysis:** Analyze body language and expressions
4. **AI Coach:** Personalized learning paths based on analysis
5. **Integration with LMS:** Connect with learning management systems
6. **Custom Avatar Upload:** Use custom avatar appearances
7. **Real-time Coaching:** In-session tips and guidance
8. **Assessment Mode:** Formal skill assessment with certifications

Enterprise Features

1. **SSO Integration:** SAML/OAuth for enterprise authentication
2. **Admin Dashboard:** Organization-wide analytics
3. **Content Library Management:** Curated scenario collections
4. **API Access:** Enable third-party integrations
5. **Custom Branding:** White-label options
6. **Compliance Reporting:** Training completion tracking

Environment Variables

Variable	Description	Required
DATABASE_URL	PostgreSQL connection string	Yes
HEYGEN_API_KEY	HeyGen API authentication	Yes
OPENAI_API_KEY	OpenAI API authentication	Yes
TAVILY_API_KEY	Tavily Search API for fact research	Optional
AWS_ACCESS_KEY_ID	AWS access key	Optional
AWS_SECRET_ACCESS_KEY	AWS secret key	Optional
AWS_REGION	AWS region	Optional
S3_BUCKET_NAME	S3 bucket for recordings	Optional

Appendix

Glossary

Term	Definition
Avatar	AI-powered video representation that users interact with
Scenario	Pre-configured practice situation with context and instructions
Persona	Behavioral configuration for how the avatar acts
Tone	Emotional/stylistic setting for the conversation
Skill	Category of communication competency (e.g., negotiation, feedback)
Session	Single practice interaction with the avatar
Transcript	Text record of the conversation
Analysis	AI-generated feedback on session performance
Queue	Waiting system when sessions are at capacity
Pre-warming	Background preparation of session to reduce latency

Version History

Date	Version	Changes
December 2024	1.0	Initial documentation
December 2024	1.1	Added dual-mode avatar system, persona overlays, skill framework assessment, impromptu speaking, admin console, cultural presets, Tavily integration

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