

MinskMir Voice Agent -

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- 1.
- 2.
- 3.
- 4. API
- 5.
- 6.
- 7.

Frontend Next.js 13+ TypeScript Tailwind CSS React Hooks

Backend Next.js API Routes Node.js TypeScript

Supabase PostgreSQL pgvector Real-time

Voice AI & LLM ElevenLabs GPT-5 TTS/STT WebSocket

1.

1: " " - bir.by

↓

2: **VoiceWidget.tsx** API

POST /api/elevenglabs/conversation-token

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3: **API Route** 1. agentId

2. ElevenLabs API

3. signed JWT token

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4: VoiceWidget ElevenLabs SDK WebSocket

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5: **ElevenLabs Platform** real-time AI

2.

ElevenLabs Pipeline

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- WebSocket
- : ~200-300ms

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(STT)

- : ElevenLabs Turbo STT
- 30+
- Output: "

↓

(RAG)

-
- Custom tools & functions

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-
-
-
- Output: " 45 120 2..."

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(TTS)

- : ElevenLabs TTS v3
-
- Streaming audio generation

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- WebSocket
- AI

VoiceWidget.tsx

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-
-
- WebSocket

AINotificationWidget

:

- Polling 30
- Badge

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AudioPlayer :

- signed URL
- : play, pause
-

Supabase PostgreSQL Schema

Lead		id, name, phone, email, status, source
Conversation		id, conversationId, leadId, transcript, recordingUrl
KnowledgeBase	AI	id, name, type, content, agentIds
apartments	(RAG)	id, address, price, embedding (vector), source

RAG Vector Search

```
pgvector      embeddings: text-embedding-3-large (OpenAI)
: 3072
: HNSW (Hierarchical Navigable Small World)
: Cosine Similarity
-- PostgreSQL          CREATE OR REPLACE FUNCTION match_apartments(
query_embedding vector(3072), match_threshold float, match_count int ) RETURNS TABLE (
apartment_id uuid, address text, price int, similarity float ) LANGUAGE plpgsql AS $$ BEGIN RETURN
QUERY SELECT a.id, a.address, a.price, 1 - (a.embedding <=> query_embedding) as similarity FROM
apartments a WHERE 1 - (a.embedding <=> query_embedding) > match_threshold ORDER BY
a.embedding <=> query_embedding LIMIT match_count; END; $$;
```

- :
• № 99- « »
• № 383
• № 568
: (-)

- HTTPS/TLS 1.3
- AES-256
- WSS WebSocket

- Row Level Security (RLS)
- JWT
- IP whitelist admin

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Vercel Cron Job: (0 * * * *) 1. Web Scraper (Puppeteer)

bir.by/apartments

- , , ,
- , ,

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2. Diff Engine

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-

↓

3. (OpenAI)

embeddings

- : text-embedding-3-large
- : 3072

↓

4. (Supabase pgvector)

- Upsert
- HNSW

Email: privacy@bir.by

: https://bir.by/privacy

: 2025