

NekoSpeak



Engineering Intelligence at the Edge

Sivasubramanian Ramanathan

*Product Owner | Fintech & Innovation
Ex-BIS Innovation Hub Singapore*



Seeking Opportunities in Singapore

I am looking for roles in **Product Management, Fintech, Payments, RegTech, and Digital Assets.**

"I am not just a Product person. **I build.**"

I have worked across product delivery, user research, and cross-agency collaboration. I enjoy solving complex problems and bringing structure to early ideas.

I care deeply about building products that create real impact.

The Problem: AI has a "Last Mile" Issue

In my work exploring **Fintech & RegTech**, I've seen how reliance on cloud APIs creates bottlenecks. For Voice AI on Android, this manifests as:

1. ● **Latency**: Waiting for server responses breaks natural conversation flow.
2. ● **Privacy Risks**: Sending sensitive audio data to the cloud is unacceptable for many use cases.
3. ● **Robotic Fallback**: Traditional offline engines (`espeak`) sound unnatural.

“**Goal**: Build a "Zero-Compromise" engine that runs mostly on-device.”

The Solution: NekoSpeak

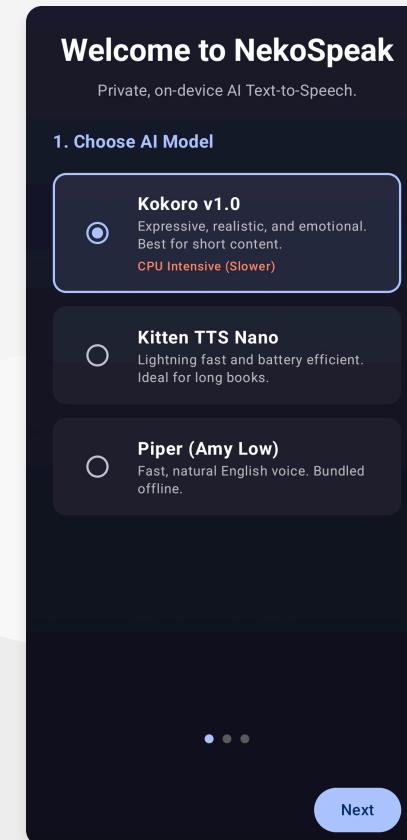


A drop-in replacement for the Android TTS ecosystem, bringing heavily quantized Large Audio Models (LAMs) to the mobile edge.

- **Triple Engine Core:**

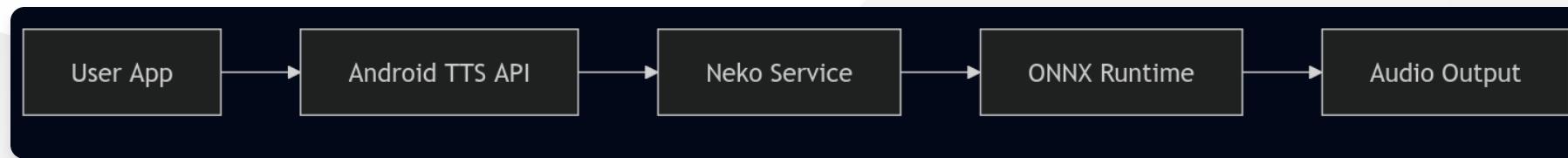
- **Kokoro (82M):** Human-like.
- **Piper:** Fast & Multilingual.
- **Kitten (Nano):** Lightweight.

- **100% Offline:** No internet needed.



Technical Architecture

I architected a custom pipeline using **ONNX Runtime** and **C++ JNI Bridges** to optimize performance on mobile CPUs.

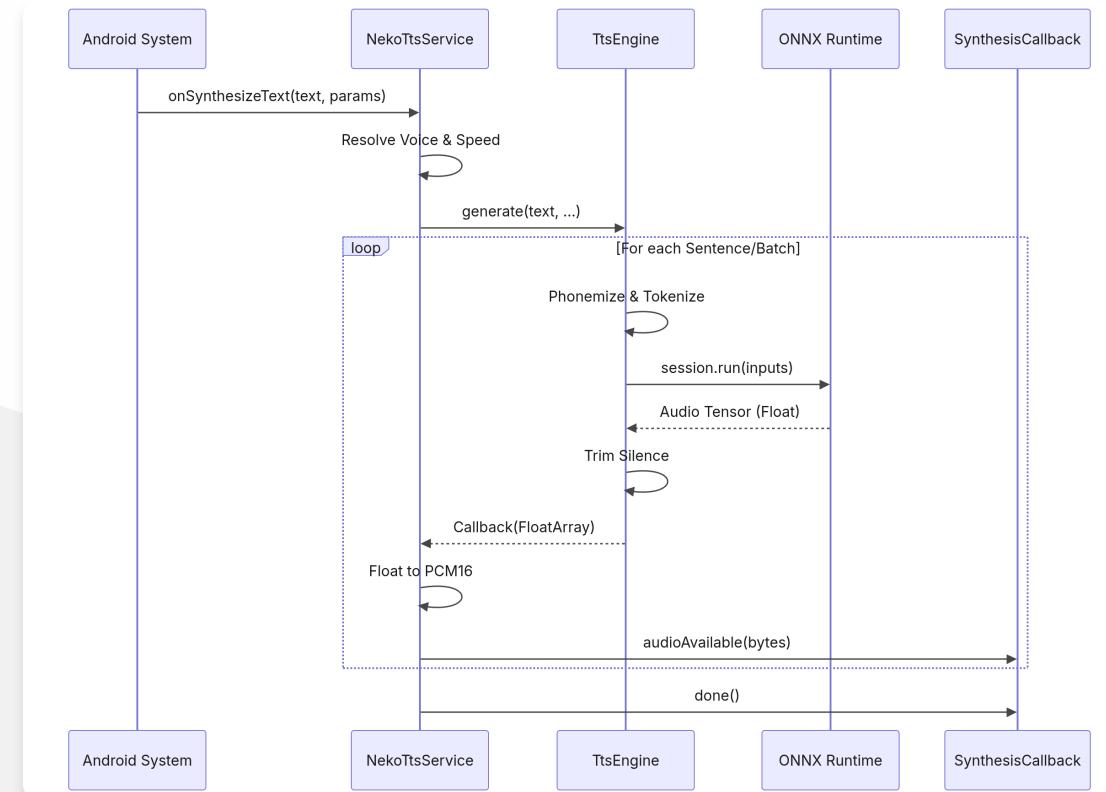


- **Smart Batching:** Dynamic buffering balances latency vs. context window.
- **Native Bridge:** Custom C++ wrapper for `libespeak-ng` phonemization.

Deep System Integration



Unlike simple "wrapper" apps, NekoSpeak integrates deep into the **Android Framework**.



It handles the full `CHECK_TTS_DATA` handshake, allowing it to power 3rd party apps (MoonReader, @Voice) system-wide.

Product Showcase



Polished UX focusing on accessibility and ease of use.

The image displays two side-by-side screenshots of the NekoSpeak mobile application interface. Both screenshots have a dark background with light-colored text and icons.

Voice Selection (Left Screenshot):

- Voices:** 149 voices available.
- Search:** Search voices... (with a magnifying glass icon).
- Filters:** Region, Language, Gender.
- List of Voices:**
 - amy (low)** - United States, English (highlighted with a blue rounded rectangle).
 - amy (medium)** - United States, English
 - anna (medium)** - Hungary, Hungarian
 - arctic (medium)** - United States, English
- Text-to-Speech Preview:** Hello, I am NekoSpeak. (with a play button icon).
- Bottom Navigation:** Voices (with a three-dot menu icon) and Settings (with a gear icon).

Settings & Config (Right Screenshot):

- AI Model:**
 - Kokoro v1.0 (Standard)
Best quality, slower (82M params)
 - Kitten TTS Nano
Faster, lower quality
 - Piper (ONNX)
Active Voice: en-US-amy-low
Ensure to select your preferred voice in the 'Voices' tab.
- Performance:**
 - CPU Threads: 6 (slider control).
 - Stream Buffer: Auto tokens (reset button).
 - Speech Speed: 1.0x (reset button).
- Battery:**
 - ⚠️ Disable Battery Optimization**: Recommended for seamless background playback on OnePlus/Oppo devices.
- General:**
 - System TTS Settings (gear icon).

Engineering Philosophy & Impact ☀️

This project reflects my approach to Product Engineering:

1. **Solve Real Problems**: Bridges the gap between "Cool AI Demo" and "Daily Driver Utility".
2. **Robust Engineering**: "Zero-Crash" architecture with graceful degradation (Cloud -> Local -> Nano).
3. **User-Centric**: Privacy by default, with no hidden analytics.

*Similar to my work on the **Singapore Location Intelligence MCP** and **Client-Side OCR**.*

About the Builder



Sivasubramanian Ramanathan

*Product Owner | Fintech, RegTech & Digital Innovation
PMP | PSM II | PSPO II*

I specialize in taking messy, real-world complexity and structuring it into reliable products.

Open for roles that sit between policy, technology, and stakeholder engagement.

Lets Connect

I am ready to bring this level of engineering rigor and product thinking to your team.

-  **Portfolio:** sivasub.com
-  **LinkedIn:** linkedin.com/in/sivasub987
-  **Code:** github.com/siva-sub/NekoSpeak

Download NekoSpeak v1.0.10:
github.com/siva-sub/NekoSpeak/releases