

Sung Guk (John) Lee

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English (native) · Korean (conversational) · Japanese (conversational)

SUMMARY

Computer Science graduate (B.S., Summa Cum Laude, 2026) who built and deployed an AI English speaking app now used by real students — a TypeScript/Next.js codebase backed by 1,200+ automated tests. Completed the degree part-time over five years while teaching full-time.

SKILLS

Languages: TypeScript, JavaScript, Python, SQL

Frameworks: Next.js (App Router), React, Flask, Jinja

Databases: PostgreSQL, Supabase, SQLite

AI / APIs: OpenAI (speech-to-text, TTS, LLM structured output, moderation), Azure Speech

Testing: Vitest, Playwright, pytest, dependency injection for external services

Infrastructure: Vercel, Supabase Auth & Storage, row-level security, SQL migrations, cron jobs, Git

PROJECTS

Coco English

2026 – Present

TypeScript · Next.js 15 · React 19 · Supabase/PostgreSQL · OpenAI · Azure Speech · Vercel

coco-english.vercel.app

AI English speaking practice app, live and in active use in my speaking classes. Students record spoken responses; the app transcribes, evaluates meaning and target-pattern use, and returns pronunciation feedback.

- Built the full stack end-to-end: Next.js App Router with React Server Components, PostgreSQL via Supabase with versioned SQL migrations, deployed on Vercel with scheduled cron jobs.
- Implemented dual authentication: Supabase Auth with row-level security for teachers, and passwordless join-code plus 4-digit PIN for students, with PINs stored as salted script hashes.
- Built phoneme-level pronunciation analysis on Azure Speech, scoring individual sounds and aggregating them across submissions into a per-student weakness profile.
- Cut API costs with a content-addressed TTS cache and deterministic fast paths that resolve exact-match answers before any paid call.
- Implemented layered content safety for child users, moderating both student input and generated output, designed to fail closed.
- 1,200+ tests including Playwright end-to-end coverage; every paid API adapter stubbed at the boundary, so the suite runs without external calls. Enforced on every push via GitHub Actions.

University IT Support Ticketing System — Course project

2025

Python · Flask · SQLite · Jinja · pytest

github.com/CSCI441Group5/academic-institution-ticketing-software

- Service desk ticketing system for schools and small university departments, where commercial platforms like Zendesk and ServiceNow are too complex and expensive. Replaces the shared inboxes and spreadsheets these teams fall back on.
- Users submit requests by category; the system routes each ticket to the right department queue, with separate dashboards for student, staff, and manager roles and filtering by category, department, and status.
- Primary contributor on a five-person team, authoring the majority of the backend and the automated test suite.

EXPERIENCE

Sprout English — ESL Teacher

Jan. 2022 – Present

Naju, South Korea

- Design and deliver English curriculum for elementary and middle school students across multiple grade levels and proficiency bands.
- Build lesson materials, assessments, and pacing systems, iterating based on measured student performance.

Republic of Korea Army — Mandatory Military Service

Jan. 2019 – Oct. 2020

EDUCATION

Fort Hays State University — B.S. Computer Science

May 2026

Summa Cum Laude · Dean's Honor List · Fort Hays Honor Society · Merit Scholarship Recipient