Benji Tusk

Pikesville, MD
benjitusk1@gmail.com
notebook.benjitusk.com, github.com/benjitusk, linkedin.com/in/benjitusk

Fullstack engineer and cofounder of ScheduLearn, where I designed and built the GCP/Firebase backend, the CI/CD pipeline, and much of the React/TypeScript frontend of a scheduling platform used by schools. Before that, I built and maintained a cross-platform lectures app and its media pipeline. Recent BSc graduate in Mathematics and Computer Science; I use Claude Code daily and am currently reverse-engineering a Windows Hello fingerprint reader to work on Linux. US citizen based in the Baltimore area, open to local and remote roles.

Core Competencies

- **Frontend**: TypeScript, React, Next.js, MUI, Tailwind CSS, Zustand, Vite
- **Backend**: Python (Flask), Node.js/Express, Firebase Cloud Functions, WebSockets
- **Cloud & DevOps**: GCP (Cloud Run, Cloud Build, Cloud Batch, Cloud Functions, Firestore, Cloud Storage), Firebase, AWS (Lightsail, EC2), Docker, GitHub Actions CI/CD, Fastlane
- **Mobile**: Flutter/Dart (iOS and Android), Swift/SwiftUI, push notifications (Firebase Cloud Messaging), background audio
- **Data**: Firestore and Cloud Storage in production; MySQL and SQLite in project work
- **Tooling**: Claude Code (daily agentic coding), Git, bash/zsh on macOS and Linux
- **Systems & Security**: BLE packet and network traffic analysis (CTF), MIPS assembly, HLS media streaming with ffmpeg, security rules for per-tenant data isolation

Professional Experience

ScheduLearn — **Jerusalem, Israel (Remote)**
Cofounder & Fullstack Engineer — *Nov 2022 - Present*

- Cofounded a platform that generates school timetables from each school's resources, constraints, students, and groups, with integrations including ParentLocker, Blackbaud, and Veracross; ran it alongside a concurrent BSc, full-time since graduating in 2026
- Designed and built the GCP/Firebase backend: Firestore, Cloud Storage, Cloud Run, Cloud Build, Cloud Batch, and Cloud Functions
- Set up CI/CD in GitHub Actions with automated tests and deploys to Firebase Hosting; added dependency caching that saves about 3 minutes per run
- Own day-to-day frontend development in React, TypeScript, and MUI, plus code review; backend in Python, cloud functions in TypeScript; instrumented the product with PostHog analytics
- Moved complex schedule generation from Cloud Functions to Cloud Batch, cutting processing time from over 2 hours to 15 minutes
- Replaced a long-running HTTP job server on AWS Lightsail, where long jobs hit HTTP timeouts, with Cloud Run containers dispatched by Cloud Functions; cut container build times from 7 minutes to 2, then to about 45 seconds by optimizing the Dockerfile
- Wrote the Firestore and Cloud Storage security rules isolating each school's data; contained a bad production deploy with a maintenance-mode killswitch and rollback, with no data loss

Yeshivat Torat Shraga — **Jerusalem, Israel**
Full Stack Developer (contract, then volunteer) — *Nov 2021 - Dec 2025*

- Co-built the original iOS app in SwiftUI giving students and alumni access to recorded lectures, then rewrote it in Flutter for iOS and Android with Firebase Auth, Firestore, push notifications, and background audio
- Built the upload server (Flask, Docker) that converts lecture audio into HLS streams with ffmpeg and sends push notifications via Firebase Cloud Messaging
- Rebuilt the admin portal in React and TypeScript, including an HLS audio player; automated iOS builds and releases with Fastlane in GitHub Actions

- **Self-organized** — **Jerusalem, Israel**
  Python Instructor (Volunteer) — *Oct 2021 - Feb 2022*
  - Organized and taught a free introductory Python course from scratch for about 7 international students
- **Talmudical Academy of Baltimore** — **Baltimore, MD, USA**
  Junior Counselor to Head Counselor — *Jun 2018 - Aug 2022*
  - Progressed to Head Counselor over 5 summers, leading 23 campers and 2 junior counselors; captained the winning camp-wide Color War team (about 600 campers)

Selected Projects

- **Engineering notebook** – Astro/MDX site documenting projects in progress, starting with reverse-engineering a Windows Hello fingerprint reader to work on Linux.
- **Jack compiler in Koka** – Compiler for the Jack language (tokenizer, parser with scoped symbol tables, VM code generator) plus a VM-to-assembly translator, written in the functional language Koka for a Fundamentals of Computing course; built with a classmate.
- **TS-MIPS** – MIPS assembler and hardware simulator written in TypeScript, built with a classmate.
- **Mishna Yomi Tracker** – Next.js and Firebase app for tracking a daily study schedule, with English/Hebrew localization.
- **WhatsappBot** – TypeScript group-chat bot integrating Google Cloud Text-to-Speech, Maps, and Sheets, with Jest tests and Conventional Commits.
- **Multiplayer browser platformer (Full-Stack Web Development final project)** – React/TypeScript and Phaser client; Express server with JWT auth, bcrypt password hashing, Socket.IO real-time multiplayer, and a MySQL-backed leaderboard. Built in a team of 2.
- **Perseus** – iOS Reddit client written in Swift, co-developed with a collaborator I met online.
- **Open-source contributions** – drag support for DockDoor's folder widget (macOS, Swift; merged), plus fixes in my forks of the MARS MIPS simulator, Flutter-AssetsAudioPlayer, and OgarServ.

Education

- **Lev Academic Center (Jerusalem College of Technology)** — **Jerusalem, Israel**
  BSc in Mathematics and Computer Science — *2022-2026*
  Coursework includes full-stack web development, database systems, software engineering, algorithm analysis, operating systems, compilers, computer networks, and data security.

Honors and Awards

- **1st Place, Beyond Code 2.5 CTF** – BLE packet analysis and network traffic parsing (2025).
- **2nd Place, 9th Great Minds Hackathon (JCT)** – Mosaic, wiretapping analysis tool for money-laundering investigations; team of 6 (2024).
- **1st Place, 8th Great Minds Hackathon (JCT)** – CampAIgn Matcher, AI-driven donor identification system; team of 5 (2024).

Languages

- English (native), Hebrew (conversational).