

Burak Unlu

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EDUCATION

Johns Hopkins University

Bachelor of Science in Computer Engineering

Baltimore, MD

Expected May 2029

GPA: 3.42 / 4.00; Dean's List, Spring 2026

Coursework: Intermediate Programming (C/C++); Discrete Math; Digital Systems Fundamentals; First-Year ECE Design; Calculus III; Data Structures, Mastering Electronics, Probability & Statistics (in progress)

WORK EXPERIENCE

Software & Firmware Engineering Intern

Baltimore, MD

pebl health inc.

December 2025 – Present

- Primary software contributor for Pebl One, a clinical-grade handheld neuromuscular assessment device, across all four company repos (ESP32-S3 firmware in C, Rust/Tauri desktop app, React Native iOS app, Python SDK) at ~67% of commits and ~94% of merged PRs; also assisted with hardware bring-up and debugging on the physical device.
- Designed a custom binary wire protocol (CRC-16/CCITT) implemented byte-for-byte across C, Rust, and TypeScript, and an NTP-style clock-sync engine (min-RTT filtering, least-squares drift modeling) time-aligning multi-kHz sensor streams.
- Engineered a Rust streaming backend (~19.7k LOC, ~390 tests) publishing device data over gRPC, Lab Streaming Layer, and a Python SDK; rewrote the firmware from scratch on real hardware, root-causing a BLE lock-starvation bug and a radio-crash reboot loop.
- Built a 6-test clinical battery with on-device DSP (FFT tremor analysis, adaptive-staircase psychophysics) on desktop (React/TS) and iOS (~21k LOC, 115 Jest tests), plus a native Swift/SwiftUI iPad app using Vision + TrueDepth camera tracking to measure hand/arm range of motion for OT patients.

Software Engineering Contractor

Elkridge, MD

BioSoftPro LLC

March 2026 – Present

- Rebuilt a production EEG-neurofeedback mobile app (~16 screens, 4 real-time feedback games, live 250 Hz DSP pipeline) from Unity/C# to React Native + Expo (TypeScript), solo, delivering the team's first-ever iOS build and shipping through TestFlight and App Store Connect.
- Designed a cross-language differential-testing CI gate proving the ported TypeScript signal pipeline stays bit-identical (observed ~2e-16) to a closed-source C# reference; root-caused an Android BLE MTU bug that had throttled streaming to 25 Hz.

Co-Founder & Lead Developer

Wilmington, DE

Imprint LLC

May 2025 – Present

- Co-founded a web studio and led all development: shipped client sites on Next.js/React/TypeScript with Supabase booking and Stripe checkout; drove 70%+ organic traffic growth via technical SEO and cold-called ~200 local businesses to source clients.

PROJECTS

Mirra, AI Bulk-Listing SaaS for Etsy & Shopify

September 2024 – Present

- Designed and shipped a full-stack B2B SaaS (~88k LOC TypeScript; Next.js/React, Express/Node, Supabase Postgres) turning bulk design uploads into compliant Etsy and Shopify listings for a paying client (\$299/mo, full IP retained); built a Gemini vision+text metadata pipeline with a prompt-injection trust boundary and a self-healing job queue with exactly-once billing.

MentorTracker, Islamic worship-tracking app on the App Store

2024 – Present

- Founded and co-develop an Expo/React Native + Firebase app used by hundreds of students; shipped a ground-up v2.0 to the App Store (Aug 2026) with Firestore security rules, Cloud Functions, and 2,600+ Jest tests; run recurring usability studies and ship fixes from them.

LeadUp, volunteer service-hour platform for student-led chapters

July 2026 – Present

- Built and cut over to production a multi-region Next.js/Supabase platform (Postgres RLS, verified attendance and hour approval, fundraising tracking, leaderboards, PWA) now used by real chapters.

LEADERSHIP & COMMUNITY

Mentor & Community Leader

Columbia, MD

Maryland Turkish American Inhabitants (MARTI)

June 2024 – Present

- Lead a weekly cohort of six students, owning curriculum and parent communication; research and present ~one original talk per week; co-founded Hill Academy (founding team of 7) and helped raise \$15K (team of 9) for a humanitarian aid trip.

Event Coordinator

Howard County, MD

LeadUp (student-led nonprofit)

December 2025 – Present

- As 1 of 2 active board members, run events end to end, mobilizing ~20 volunteers across hundreds of service hours and driving \$7,000+ in annual fundraising.

SKILLS

Languages: TypeScript, JavaScript, Python, Java, C, C++, Rust, Swift, SQL, HTML/CSS

Systems & Embedded: ESP-IDF/FreeRTOS, NimBLE/BLE 5.0, lock-free concurrency, binary wire protocols, DSP (FFT, IIR), gRPC, Linux

Web & Mobile: React, Next.js, React Native/Expo, Swift/SwiftUI, Node/Express, REST/GraphQL, Supabase/Postgres, Firebase

Tools: Git, GitHub Actions CI/CD, Jest, Docker, Xcode/TestFlight, Claude Code agent orchestration, automated AI code review