

Damla Su Bilge

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LLM system engineer. I design the whole system and write its hard parts myself: I limit the model to writing structured specs, I write the deterministic engines that do the real work, and I build the judge layers and benchmarks that decide what ships. I prove every claim with benchmarks.

Everything I build is a real product, live at noseydewdrop.com. I am also building my own company, and studying entrepreneurship and system architecture to build it right.

PROJECTS

stitchu - Photo to Sewing Pattern Engine (Live)

C++17, WebAssembly (Emscripten), JavaScript, Cloudflare Workers, AI Vision API

- Solves a real gap: people who sew at home buy fixed-size patterns that never fit their bodies. stitchu turns a garment photo or a text prompt + 7 body measurements into a made-to-measure, sewable A4 PDF pattern; the first pattern was sewn and worn.
- Built as four layers with strict contracts between them: vision reading, typed spec, deterministic C++ drafting engine (client-side WASM, measurements never leave the browser), tiled PDF. The same engine is exposed as a B2B-ready REST API with zero per-call LLM cost.
- Quality is measured: **70,200-draft** regression matrix on every change, 54-case sewability benchmark with a public pass rate and patch notes (currently 27/54, climbing), vision accuracy **51/54 (94.4%)** on a labeled photo test set, byte-identical golden tests.

gymgyme - In-Browser Computer Vision Form Coach (Live PWA)

C++17, WebAssembly, MediaPipe, JavaScript, Supabase

- Solves home training without a trainer: counts reps and scores exercise form 0-100 in real time; all video is processed on-device, nothing is uploaded.
- Hand-written motion engine: One Euro + Kalman filtering, bone-locked skeleton, anatomical IK limits, multi-person identity lock; verified by **190+ native tests** with regression locks, bone-length variance **5% to 0.00%**, low-light jitter 5.0 to 2.3 degrees.

ir-globe - Geopolitics Intelligence Globe (Live)

JavaScript, three.js/WebGL, Node.js, ONNX, GitHub Actions

- Makes country-to-country relations (arms, aid, sanctions, migration; 13 layers, 198 countries) visible on a 3D globe; started as a paid commission from an International Relations student.
- Fully automated: ingests ~4,500 headlines every 6 hours with a custom-built deterministic NLP engine (gazetteer NER, CAMEO event coding) plus local ONNX deduplication; audited display accuracy 80-85%, false-merge rate **0.35%**, monthly infrastructure cost \$0.

seviyorsevmiyor - On-Device Chat Subtext Analyzer (Live)

Python, JavaScript, Tesseract OCR, Cloudflare Workers

- Answers "is there interest in this chat" with quoted evidence, fully on-device.
- Trained my own logistic regression model in Python, ported inference to browser JavaScript with 1e-16 feature parity; improved held-out accuracy **72.2% to 75.9%** via synthetic data distillation against an untouched real test set.

Full portfolio at noseydewdrop.com; many more on github.com/nosey-dewdrop, including native iOS apps.

EXPERIENCE AND LEADERSHIP

PR and Social Relations Coordinator - IEEE Bilkent Student Branch | 2025 - 2026

- Ran PR for every IEEE Bilkent event across a full academic year; coordinated campus-wide events and cross-club collaborations.

Teaching Assistant, CS115 Programming in Python - Bilkent University | 2025

- Helped students learn Python in weekly labs: fundamentals, functions, structured types, OOP, algorithmic complexity, searching and sorting, data visualization.

Spark Fellow - Fab Startup Fellowship | Feb - Mar 2026

- Ran customer interviews, joined founder talks, and shipped two live web products during the fellowship.

Software Engineering Intern - Software Persona | Feb - Mar 2026

- Full-stack development and database operations; delivered two final projects end to end.

Barista - Hound Coffee Group | 2024 - Present

- Barista; also built the shop's interactive digital coffee menu (JavaScript).

Student Clubs

- Executive Board Member at Bilkent Sociology Club and Bilkent TEMA; former Board Member at Innovation and Research Society, Music Club and Crochet Club; member of ACM Bilkent.

EDUCATION

Bilkent University - B.Sc. Computer Science | 2023 - Present

Istanbul Medipol University - Faculty of Medicine, GPA 91/100 | 2020 - 2023

TECHNICAL SKILLS

Agent Orchestration: multi-agent engineering loops with judge layers, regression gates and rollback; analyzed 16B tokens of my own agent usage to redesign how I work

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

LLM Systems and Computer Vision: LLM system architecture (structured specs, judge layers, validation), Anthropic Claude API, distillation, ONNX on-device inference, MediaPipe, Kalman filtering, inverse kinematics, benchmark design

Frameworks: WebAssembly (Emscripten), Next.js, React, three.js, PWA, SwiftUI, SwiftData, StoreKit 2, Node.js

Infrastructure: Cloudflare Workers, Supabase (RLS), GitHub Actions CI/CD, Vercel, Git, KVKK/GDPR compliance

Spoken: Turkish (native), English (C1), German (A1)

Interests: Music (guitar, piano, bass, ukulele), Music Theory, Philosophy, Literature, Sewing