

Hikmet Bisen

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Mechanical Engineering · AI & Software · Medical Devices

EDUCATION

Harmony school of Endeavor

Austin, TX · GPA: 4.56 · Concurrent dual enrollment at Austin Community College

Expected May 2027

Austin Community College—Dual-Credit College Coursework

2024 - 2027

College-level coursework in mathematics, physics, and engineering completed during high school

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, Java, C++, MATLAB, HTML/CSS

Frameworks & Tools: FastAPI, React, REST APIs, SQLite, Git & GitHub, Supabase (pgvector)

AI / ML: Retrieval-Augmented Generation (RAG), LLM integration (Claude, GPT-4o, LiteLLM), Voyage AI embeddings, prompt engineering

CAD & Hardware: Fusion 360, AutoCAD, TinkerCAD, Arduino

Spoken Languages: Turkish (native), English (fluent)

PROFESSIONAL & TECHNICAL EXPERIENCE

FORGE AI — AI Engineering Analysis Platform

2025 – Present

Solo founder & full-stack developer

- Designed and built a full-stack AI platform where engineers upload technical drawings and PDFs and receive structured, citation-backed engineering answers; Python/FastAPI backend with a React 18 frontend.
- Engineered a retrieval-augmented generation (RAG) pipeline: PDF text extraction, Voyage AI embeddings (1,536-dimension vectors), and cosine similarity search over a Supabase pgvector document store.
- Implemented multi-model LLM routing with LiteLLM, automatically directing queries between Claude and GPT-4o based on content (e.g., routing stress, FEA, and fatigue calculations to the stronger model); exposed 5 rate-limited REST API endpoints.
- Shipped 6 of 8 planned phases (RAG, API, UI, AI-guided onboarding, structured PDF report export, multi-model

Engineering & Software Projects

1983 BMW 3 Series (E30) Restoration

June 2024 – Present

Independent Automotive Engineering & Restoration Project

- Built hands-on expertise in mechanical systems, troubleshooting, and precision-based reassembly.
- Disassembled the vehicle to evaluate mechanical and structural condition, removed rust, reinforced compromised chassis areas, and systematically repaired and reassembled key components.
- Launched and led a full ground-up restoration with my brother, conducting technical research, consulting automotive specialists, and sourcing tools and materials.

Software Development Essentials, Code2College

2025 – Present

- Completed a 9-week web programming course covering foundational and intermediate Python concepts.
- Built several technical projects in Python and attended professional development workshops on time management and technical portfolio development.

Medical Device R&D Intern, Worcester Polytechnic Institute (WPI)

June 2025 – Present

Wearable Medical Earbud Research Project

- Led the design and development of a wearable earbud to track vital signs (blood pressure, heart rate, respiratory patterns, and vocal activity) by targeting a subaural site near the jaw shown in recent research to yield rich physiological data.
- Collaborated directly with a WPI professor from concept to prototype, using AutoCAD for mechanical design and C++ for embedded programming, prioritizing a lightweight and comfortable form factor.
- Working toward a patent filing for the final design and a co-authored paper for submission to the MIT Undergraduate Research Technology Conference (URTC).

LEADERSHIP & COMMUNITY SERVICE EXPERIENCE

Engineering Exploration & Design Intern, Longhorn Engineering Summer Camp (LESC)

June – July 2024

- Explored mechanical, civil, and electrical engineering through workshops, lectures, and real-world simulations.
- Led and collaborated on multidisciplinary design challenges; applied civil and mechanical concepts to design and build functional model roller coasters with structural analysis and material selection.

Architecture & Engineering Research Intern, DV3x2 (American Institute of Architects)

June 24 – 29, 2024

- Conducted an independent research project analyzing UT Austin's financial structure—revenue sources, profitability, and budget allocation—strengthening financial analysis and data interpretation skills.
- Gained hands-on exposure to architecture and engineering practice by working with startup firms in real-world design and construction settings.

AWARDS

- 2025 — Sensors and Sensor Circuit Design — University of Colorado Boulder
- 2024 — Introduction to Engineering Mechanics — Georgia Tech
- 2023 — Turkish Calligraphy — Artistic Achievement