

HECTOR EDUARDO TOVAR MENDOZA

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EDUCATION

Tecnológico de Monterrey

B.Eng. in Robotics and Digital Systems

• **GPA:** 3.7/4.0

• **Relevant Coursework:** Data Structures & Algorithms, Object-Oriented Programming, Computational Architecture

Expected June 2027

Monterrey, Nuevo León

EXPERIENCE

Software Engineer | FuzzyFlags | Fastify, Vite, React, tRPC, Prisma, PostgreSQL, Grafana, Kubernetes **July – August 2026**

- Building a **Workers' Compensation Risk & Safety portal** with a service-oriented backend architecture, covering the claims lifecycle, compliance tracking, and reporting for a staffing agency's field operations.
- Designed and shipped a rule-based **alert engine** evaluated by a durable workflow system, swept daily with idempotent evaluation and full audit logging on every mutation.
- Stood up **observability infrastructure** in staging using Prometheus and Alertmanager, giving the team real-time visibility into alert health and system metrics.

Software Engineer | Ventologix (Grupo Mufo) | Next.js, gRPC, MySQL, Docker, GCP, LangGraph **Apr 2025 – Jul 2026**

- Sole engineer for **two production SaaS dashboards** on the **T3 Stack (Next.js 15, tRPC, Prisma, TypeScript)** serving real-time IoT telemetry to industrial clients — product line accounts for **40% of total company revenue**.
- Integrated a **multi-agent AI system** (LangGraph) into the dashboard that routes client queries across specialized agents for anomaly detection, trend analysis, and maintenance recommendations — adding an intelligent analytics layer on top of live sensor data.
- Designed and deployed a **real-time IoT ingestion pipeline** — 4 containerized Python services orchestrated with Docker + Supervisor — streaming live sensor data from industrial RTUs into MySQL; overhauled the database schema with temporal partitioning, cutting query execution time by **90%** at scale.

Front-End & Mobile Developer | Einter | React, Kotlin, Firebase, TypeScript, Tailwind CSS **July – Dec 2025**

- Built a **React 19 + TypeScript** admin dashboard with 11 role-gated modules (products, orders, inventory, sales, suppliers) covering full CRUD and 3-tier permission control.
- Shipped an Android companion app in **Kotlin (MVVM)** with 8 screens for QR-based inventory scanning, inbound/outbound shipment tracking, and waste recording – replacing a paper-based warehouse process with structured digital records.
- Unified auth across web and mobile using **Firebase Authentication** (email/password + Google Sign-In) with route-level guards and role-aware UI rendering per user type.

PROJECTS

RoBoCupido: AI Matchmaking Platform | Next.js, tRPC, Prisma, TypeScript, Gemini Pro, PostgreSQL **Jan 2026 – Feb 2026**

- Replaced static sign-up forms with a **conversational AI agent** on the **T3 Stack**, conducting structured interviews to extract user preferences and generate compatibility profiles.
- Engineered a stateful **information extraction pipeline** with **Gemini Pro**, dynamically querying for user attributes to produce structured JSON summaries stored in **PostgreSQL**.
- Launched to **200+ students** for a university showcase, achieving **94% profile completion rate** and recognized as a top project by the organizing committee.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, C++, C, Kotlin, SQL, Go

AI & ML: PyTorch, LangGraph, OpenAI API, Claude AI, Gemini Pro, RAG pipelines, LLM agent design

Web & Backend: React, Next.js, Fastify, Vite, FastAPI, Node.js, tRPC, gRPC, RESTful APIs, Prisma, Tailwind CSS

Cloud & DevOps: AWS, Azure, GCP, Docker, Kubernetes, Vercel, Linux/Unix, Git

Observability: Grafana, Prometheus, Alertmanager

Databases: PostgreSQL, MySQL, Supabase, Firebase

Languages: Spanish (Native), English (C1), French (B1), Japanese (N1)

AWARDS & LEADERSHIP

Sole DigiKey Ambassador in LATAM | Technical content creation, outreach to 520+ students

Present

Outstanding Academic Achievement Award | Top 1% of engineering students

Jun 2026

1st Place, RoboCup @Home National | Outperformed teams from Mexico's top universities

Apr 2026

1st Place, International LARC Open Robotics | Best autonomous systems, international field

Nov 2025

2nd Place, HackMTY | Banorte track, 400+ competitors

Oct 2025

1st Place, National LARC Open Robotics | National robotics champion

Apr 2025

1st Place, ShellHacks | Waymo track, 20+ teams

Sep 2024