

René Cano

Computer Technologies Engineering student · Tec de Monterrey, Toluca campus

I build reinforcement learning, applied AI and full-stack systems you can actually check: a demo, the code and the results.

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FEATURED PROJECTS

UrbanMind X · Traffic light control with reinforcement learning

May – Jun 2026

Lead author (a teammate built the SUMO network) · 1st place · Expo Ingenierías 2026

Two PPO agents, a traffic light and a vehicle, trained in SUMO on the Carranza × Pino Suárez intersection in Toluca, with a live dashboard.

PPO · Stable-Baselines3 · Gymnasium · SUMO · Three.js

LivHire · Talent acquisition copilot · LiverHack 2026

Sep 2026

Process-domain backend · team of 4 · 3rd place · LiverHack 2026

Internal recruiting platform from requisition to offer: a 6-stage state machine, business-day SLAs and human decisions with a mandatory justification.

Next.js · TypeScript · Supabase · RLS · OpenAI

Helada · Parcel-level frost warnings with small AI · Hack-Nation 2026

Oct 2026

Problem statement, video script and phone testing · team of 4 · 4th place · Mexico hub · World Bank Small AI for Development

Parcel-level frost warnings sent as WhatsApp voice notes to maize farmers in the Toluca valley, with the model running on the phone without signal.

Hackathon · Small AI · Agriculture

AgentBuyer · Safe purchasing for AI agents · NextWave Hackathon 2026

Aug – Sep 2026

Co-developer at the hackathon; solo hardening afterwards · Hackathon + security hardening

A protocol that lets an agent buy on a person's behalf using signed mandates. After the hackathon I added authentication, closed a signature bypass and grew the suite from 68 to 231 tests.

FastAPI · Ed25519 · JWT · React · GitHub Actions

CESVI RAT · Accident reconstruction database · CESVI México

Feb – Apr 2026

Database coordinator · team of 6 · Built for CESVI México

A 54-table relational schema for CESVI México's forensic reconstruction module, with migrations, Eloquent models and a data dictionary.

MySQL · Lumen · Eloquent · Relational modeling

PackFlow · 3D truck loading with reinforcement learning

Jun – Jul 2026

Sole author · null

3D truck loading with reinforcement learning: a voxel environment with gravity, weight, fragility and delivery order, MaskablePPO with a 3D CNN and a react-three-fiber view.

MaskablePPO · Gymnasium · FastAPI · react-three-fiber

EXPERIENCE

Database coordinator

Feb – Apr 2026

CESVI RAT · built for CESVI México

- Designed the 54-table schema across 7 functional groups and documented it in a data dictionary.
- Wrote the 6 migrations and the Eloquent models; 50 of my 54 models made it unchanged into the team's backend.

Backend developer, process domain

Sep 2026

LiverHack 2026 · El Puerto de Liverpool

- Built the Supabase schema with RLS, the 6-stage state machine and the business-day SLA engine.
- Team of 4; my part was ~28% of the project's lines.
- 3rd place at the hackathon.

Co-developer and security hardening

Aug – Sep 2026

AgentBuyer · NextWave Hackathon 2026

- During the hackathon: the mandate and verification API, Mission Control and the mandate creation screen.
- Afterwards: OTP and JWT authentication with roles, a fail-closed signature verifier, and 68 to 231 tests with green CI.

Problem statement, storytelling and field testing

Oct 2026

Helada · World Bank Small AI for Development (Hack-Nation)

- Wrote the problem statement and the video script, and tested the app on phones with farmers.
- 4th place in the Mexico hub.

EDUCATION

.S. in Computer Technologies Engineering (ITC)

Tecnológico de Monterrey · Toluca campus · In progress · expected graduation June 2028

ACHIEVEMENTS

4th place, Mexico hub, World Bank Small AI for Development

2026-10

Helada, with team SysCallOx4 (Hack-Nation, October 3–4, 2026).

3rd place, LiverHack 2026

2026-09

LivHire, El Puerto de Liverpool's talent acquisition challenge (September 2026).

NextWave Hackathon 2026

2026-08

24 hours building AI agents, Mexico City (August 29–30, 2026).

1st place, Expo Ingenierías 2026

2026-06

UrbanMind X, Tec de Monterrey Toluca campus (February–June 2026).

3rd place, Digital Prototype Development, Expo Ingenierías

2025-12

Precedence-graph visualizer for parallel programming (August–December 2025).

The Warriors recognition

2025-04

For technological innovation and programming and robotics skills (April 3, 2025).

SKILLS

Programming languages: Python, TypeScript, JavaScript, Java, PHP, SQL, C++ (ESP8266)

AI & machine learning: Stable-Baselines3, Gymnasium, SUMO / TraCI, PyTorch, Hugging Face Transformers, MediaPipe, OpenCV, LLM APIs (OpenAI, Gemini)

Web & backend: Next.js, React, FastAPI, Flask, Streamlit, Lumen / Laravel, Tailwind CSS

Data: PostgreSQL, MySQL, SQLite, Supabase (RLS), Relational modeling

Infrastructure & quality: Git & GitHub, GitHub Actions, Docker, Vercel, Netlify, pytest

Security: OTP & JWT, Ed25519 signatures, Role- and owner-based access control

Spoken languages: English (B2)

CERTIFICATIONS

CCNA: Introducción a las redes (Introduction to Networks) · Cisco Networking Academy · Tecnológico de Monterrey, Campus Toluca	2026-06-18
Oracle Cloud Infrastructure 2025 Certified Generative AI Professional · Oracle University	2025-10-01
Oracle Autonomous Database Cloud 2025 Certified Professional · Oracle University	2025-09-25
Oracle Cloud Infrastructure 2025 Certified Data Science Professional · Oracle University	2025-09-24
Oracle Data Platform 2025 Certified Foundations Associate · Oracle University	2025-09-20
Oracle Cloud Infrastructure for Sunbird Ed Specialty · Oracle University	2025-09-20
Oracle Fusion Cloud Applications ERP Process Essentials Certified - Rel 1 · Oracle University	2025-09-16
Oracle Fusion Cloud Applications SCM Process Essentials Certified - Rel 1 · Oracle University	2025-09-16
Oracle Cloud Infrastructure 2025 Certified Foundations Associate · Oracle University	2025-09-13
Oracle Fusion Cloud Applications CX Process Essentials Certified - Rel 1 · Oracle University	2025-09-13
Oracle Fusion Cloud Applications HCM Process Essentials Certified - Rel 1 · Oracle University	2025-09-12
Oracle Fusion AI Agent Studio Certified Foundations Associate - Rel 1 · Oracle University	2025-09-10
Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate · Oracle University	2025-09-08