Martín S Vizcaíno Rivas
Software Engineer

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Backend-focused software engineer with strong foundations in object-oriented programming, data structures, and scalable system design. Experience building high-performance applications in Java and Python and developing large-scale data workflows in cloud environments. Passionate about engineering reliable enterprise AI systems that solve complex problems.

EDUCATION

Bachelor of Science, Computer Science — 2024 – Present
University of Indianapolis – Indianapolis, IN — GPA 3.91/4.00
Relevant coursework: Data Science, Mathematics, Linear Algebra, Probability, Algorithms

EXPERIENCE

Software Engineer Intern — Apps & AI – Hoosier Racing Tire Corp. — Summer 2025
- Built a cross-platform inventory app (Flutter/Dart + SQL) for Web, iOS, and Android.
- Enabled real-time tracking across 5+ warehouses, cutting manual reconciliation time by 40%.
- Developed an AI-powered internal sales agent to handle client inquiries, improving response time and consistency.

Undergraduate Researcher – University of Indianapolis — Aug 2024 - Present
- Engineered a 3-DOF SCARA arm (MATLAB/Simulink + PixyCam) for vision-guided pick-and-place.
- Implemented inverse kinematics and motion control, improving accuracy by 30% over 100+ tests.
- NSF I-Corps Jumpstart Fellow ($1,000 award) for SCARA robotics commercialization.
- Awarded $1,500 Undergraduate Summer Research Institute grant (University of Indianapolis).

Co-Founder & Backend Systems Engineer – Carrot — Nov 2025 - Present
- Architected a production-grade multi-LLM routing system (FastAPI + Supabase + pgvector) with dynamic model selection, provider fallback, and cost-aware orchestration.
- Built a cost-aware LLM orchestration layer with provider fallback and token optimization.
- Implemented authentication, usage metering, and quota enforcement across providers.
- Deployed production infrastructure on Render + Vercel with CI/CD and environment isolation.

Technical Lead & Systems Engineer – CAPTE Standards Mapping Platform — Aug 2025 - Present
- Leading a 5-person engineering team delivering an enterprise accreditation platform for a live university client.
- Architected Firebase + Python backend ingesting 100+ course artifacts and structured syllabus data.
- Designed an LLM-powered accreditation mapping pipeline (Gemini) generating structured, evidence-backed rationales.
- Standardized structured PDF outputs for accreditation reviewers.
- Reduced accreditation prep time from hours per course to automated report generation.

Team Data Analyst – Xtern Challenge powered by MISO – TechPoint — Sept - Oct 2025
- Collaborated in a cross-university team and placed 3rd in a MISO-sponsored analytics challenge focused on early detection of U.S. energy policy strategy shifts.
- Analyzed public data and social signals using Python (Pandas, scikit-learn) and built a JavaScript dashboard to visualize rising data center energy demand, transmission expansion prioritization, and interconnection backlog pressures among utilities, developers, and lobbyists.
- Presented findings, in-person, to over 30 MISO executives and professionals.

AI Research Intern – SmartCorp — Summer 2024
- Implemented and benchmarked recommendation algorithms (CF, MF, and SVD) on 10 K+ user-item records.
- Applied deep learning (VAEs), improving personalization accuracy by 12% (precision@10).

PROJECTS

On-Device CSV Cleaner — iOS (Swift, MLX, Core ML) — 2025
- Built an offline CSV cleaning tool using on-device AI for PII removal and privacy-compliant data prep.

Sanctum — Chrome Privacy Filter (TypeScript, Manifest V3) — 2025
- Client-side Chrome extension that redacts PII before prompts are sent to ChatGPT, Claude, or Gemini.

Real-Time Market Data Analysis (FastAPI, PostgreSQL, React) — 2025
- Built a real-time stock data pipeline with REST APIs and an analytics dashboard.

CORE SKILLS

Programming & Computer Science Fundamentals
- Java, Python, C++, C#, JavaScript, TypeScript
- Object-Oriented Programming (OOP), Data Structures & Algorithms, Performance Optimization

Backend Systems
- FastAPI, Django, REST APIs, Microservices
- Scalable System Design, Asynchronous Systems

- SQL (PostgreSQL), Data Modeling, ETL Pipelines

Cloud & Infrastructure
- AWS, Docker, Kubernetes, CI/CD

Testing & Reliability
- Unit & Integration Testing, Logging & Debugging

AI & Data Systems
- Scikit-learn, pgvector, LLM Orchestration

CERTIFICATIONS

- AWS Certified Cloud Practitioner – Amazon Web Services — Dec 2025
- CompTIA Security+ – CompTIA — Sept 2025

HONORS & ACTIVITIES

- IEEE Computer Society – Programming Lead, University Chapter
- Sigma Zeta Research Grant Recipient ($500) – Invited Presenter, National Convention (McKendree University, IL)
- Dean's List (All Semesters)