Elias Zarco Gonzalez

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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY — Atlanta, GA

M.S. Computational Science and Engineering (Artificial Intelligence & Operations Research). — Graduation: May 2028

B.S. Industrial and Systems Engineering (Data Science & Analytics) with a Computer Science Minor. — Graduation: May 2027

- Cumulative GPA: **3.55/4.0**; Dean's List 2023–2026.
- Relevant Coursework: Object Oriented Programming, Database Systems, Computer Organization, Optimization, Probability, Data Structures and Algorithms, Statistical Methods, Machine Learning, Data Science, Finance and Investments, Regression.
- Activities and Societies: Society of Hispanic Professionals and Engineers (SHPE), Phi Kappa Tau Fraternity, ALPFA, GT Oxford.

SKILLS

Programming Languages: Python, R, SQL, Java, JavaScript, TypeScript, Kotlin, C.
Technical Tools: Pandas, NumPy, Spark, Sklearn, PyTorch, Git, FastAPI, Redis, Gurobi, AWS, Docker, Kubernetes, Claude Code.
Other: Fluent in English and Spanish; Elementary Proficiency in German. Microsoft Office Suite, Bloomberg Terminal.

EXPERIENCE

AI INSTITUTE FOR ADVANCES IN OPTIMIZATION (AI4OPT) — Atlanta, GA

Research Assistant. — September 2026 –Present

- Researching **diffusion-model approaches** to large-scale optimization with applications in **supply chain and healthcare operations**.

HSBC HOLDINGS — Mexico City, MX

AI Project Manager Intern. — June 2026 – August 2026

- Led **AI-adoption strategy** for a Transformation team overseeing a **$5M**+ quarterly project portfolio, scoping agentic use cases against a global bank's **data-governance** and **security constraints** and running technical workshops that moved **25+** Business Analysts from evaluation to production use.
- Diagnosed agent failures as an unstructured-input problem and overhauled the pipeline with **Python** and **SQL** scripts decomposing complex Excel workbooks into normalized, agent-readable tables, raising task success from **40% to 90%**; built the **adoption metrics** and rollout plan quantifying the gain and presented results to **HSBC México's C-suite**.

H. MILTON STEWART SCHOOL OF INDUSTRIAL & SYSTEMS ENGINEERING — Atlanta, GA

Academic Tutor. — January 2026 – May 2026

- Facilitate student success across Engineering Optimization and Statistics courses with **1,000+** total enrollment, assisting with **linear/integer programming** models and the execution of programming projects in **Python** (**Gurobi**) and **R**.

GOOGLE — Mountain View, CA

Associate Software Developer Intern. — May 2025 – August 2025

- Owned **a full-stack, AI-integrated** feature for Gemini Education's interactive learning tools (**Kotlin, TypeScript**), cutting content-generation latency by **95%+.**
- Built **the modular API layer** that lets sandboxed iframe components exchange **JSON messages** with Gemini, with dynamic prompt routing across reusable front-end game templates(**HTML, CSS, JS**).
- Created an autonomous **QA framework** in which a **multimodal agen**t playtests the tools from screenshots, validating launch-readiness for **Gemini and NotebookLM** integration.

GTSF INVESTMENTS COMMITTEE — Atlanta, GA

Quantitative Analyst. — January 2024 – May 2026

- Valued **7** financial institutions (**dividend discount, comparables**) and pitched recommendations to a **200+** member committee, shaping allocation of a **$2.3M** student-managed portfolio (sector Sharpe ratio **1.59**).
- Built **VECM, SARIMA-GARCH, and XGBoost** models on satellite-derived and macro indicators to anticipate **commodity volatility**, then adjusted fund strategy through **backtesting** and **risk-adjusted evaluation**.

SELECTED PROJECTS

INSIGHT FOR IMPACT — Project Code

- Developed end-to-end **Spark** data pipelines on **Databricks** and trained **XGBoost** time-series models to forecast humanitarian aid requirements through 2030, integrating the **Genie API** for LLM-driven analytics and deploying a **Streamlit** dashboard for global funding visualization.

ADVANCED DEEP LEARNING FOR COMPUTER VISION — Project Code | White Paper

- Built a controlled **PyTorch** benchmark of **LeNet-5**, a custom **AlexNet**, and a custom **Vision Transformer** under fixed A100 wall-clock budgets, using **stratified k-fold tuning** and **accuracy-per-GFLOPs** metrics to show Vit' compute advantage over AlexNet.

AI SAFETY SANDBOX FOR NAVY AGENTS — Project Code

- Built an **offline safety layer** that simulates each command an **AI agent** sends to a naval drone and blocks unsafe ones, combining hard rules with anomaly detection (**ONNX embeddings, FAISS search**); stopped **35/35** dangerous commands across 21 simulated scenarios at about 8 ms per decision with **a 0.4**% false-alarm rate.

ORDER ENTRY SYSTEM @ MILLENNIUM HEDGE FUND — Project Code

- Led a three-person team building a **full-stack order-entry system** for a hedge-fund sponsor (**FastAPI, WebSocket, Redis**), with **sub-50 ms** matching in local benchmarks; presented at **Millennium HQ** in New York.