# Javier Domínguez Segura

Madrid, Spain

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Work Permits | Work authorization: [EU/CH status] | Eligible to sign an internship agreement via IE University

## EDUCATION BACKGROUND

**IE University**                                                                                                          **Madrid, Spain**
*Bachelor of Science* **in Computer Science & Artificial Intelligence,**                    *Expected: July 2027*
- GPA: 93/100, Dean's List; Honors in 6/24 courses (25%).

## PROFESSIONAL EXPERIENCE

**STRIDE Research Labs, U.S. NSF Program** - *HPC & AI Lab*                                    **Madrid, Spain**
Research Intern                                                                                                      *Summer 2025 - Present*
- Designing HPC middleware for agent-based workflows on NCSA Delta supercomputers through NSF's ACCESS program. Partnering with the RADICAL research lab at Rutgers University on the Integrated Machine-learning for Protein Structures at Scale (IMPRESS) project.
- Built open-source Python package FlowGentic enabling agent frameworks (LangGraph, CrewAI, AG2) to run on HPC schedulers with minimal code changes, designed for developer ergonomics and production workflows.

**Kronos Technology** - *Full Stack App*                                                             **Gran Canaria, Spain**
Co-founder / Lead developer                                                                          *January 2022 - November 2023*
- Designed and deployed a production-ready booking platform used by multiple businesses, enabling over 600 monthly reservations and reducing manual scheduling effort by 40%.
- Built with Python (FastAPI), MySQL, Redis, firebase (auth and analytics), Stripe (payment) and deployed on AWS with CI/CD

## PROJECTS

**GPU Monte Carlo for Systemic Risk (CUDA/MPI/OpenMP) (Github) | Fall 2025 - Present**
- Achieved 192× speedup in multi-asset systemic crash simulations (188k → 36M sims/sec), reducing 100M-iteration runtime from 9 minutes (Python) to 2.8 seconds (CUDA) for joint tail probability estimation across EU equity indices.
- Built hybrid C/CUDA pipeline with parallel Cholesky decomposition, cuRAND path generation, and optimized reduction kernels; integrated yfinance for real market data with statistical confidence intervals for contagion risk analysis.

**AI-Powered Ticket Resolution Platform (Link) | Fall 2025 - Present**
- Designed event-driven support ticket system processing 500+ concurrent agent workflows with <200ms p95 latency. Developed with FastAPI, MySQL, and Redis caching; built React observability dashboard with live metrics, A/B experiment tracking.
- Implemented comprehensive testing strategy achieving 75%+ backend coverage and E2E tests for critical workflows; deployed via Docker Compose with automated CI/CD and infrastructure-as-code to multi-cloud environment (Azure and AWS)

**Efficient Classifier — Open-Source ML Framework | [PyPI/GitHub link] | Spring 2025**
- Developed an open-source dataset-agnostic machine learning framework for rapid prototyping and deployment of classification pipelines on tabular data.
- Achieved 92% F1-score on CCCS-CIC-AndMal-2020 (Android malware detection, 50K+ samples), outperforming baseline approaches by 10% for certain models.

## AWARDS & HONORS

**EduCaixa The Challenge –** Finalist in international research competition (<0.02% acceptance) to conduct big data research on high-school dropout rates. Presented findings in Silicon Valley with workshops by Google, and Apple employees and Stanford students. (source)
**IE Entrepreneurship Award** – Merit-based college scholarship awarded to students with outstanding entrepreneurial potential.
**Dean's List, School Of Science & Technology**— Recognized for top academic performance across multiple semesters (source).

## ACTIVITIES & LEADERSHIP

**IE Student Government**,                                                                                      **Madrid, Spain**
*Class representative*                                                                                          *September 2023 – Present*
- Drove curriculum adjustments and influenced resource allocation decisions by synthesizing complex student feedback and presenting data-backed proposals to stakeholders.
- Successfully negotiated for the implementation of new academic resources, directly improving the educational experience for the entire cohort.

## ADDITIONAL INFORMATION

- **Languages: Spanish** (Native). **English** (Fluent, 3 years, daily use). **German** (Intermediate).
- **Technologies & Tools:** Python, SQL, React, Java, Terraform, Ansible, Azure, AWS, Git, Linux, System Design, Data Structures and Algorithms, Redis, MongoDB, Docker, Rabbit MQ