

# MATIAS ZAPF

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## Profile

Software Engineer **building a cloud-native B2C/B2B platform** using event-driven architecture. Writing a [technical blog](#) to bridge computer science concepts with cybersecurity applications.

- **Current Focus:** High-concurrency workflows and real-time geospatial processing (FastAPI, Celery, PostGIS).
- **Background:** Former Programming Instructor (Python for DS & AI) with 2+ years of experience.
- **Education:** Pursuing a **B.S. in Cyberdefense (UNDEF)**—the first degree in Argentina dedicated to Critical Infrastructure Protection.

## Experience

### Software Engineer

*June 2025 - Present* — **Confidential Project (Stealth Mode)**

Building a cloud-native B2C/B2B platform using event-driven architecture to handle high-concurrency workflows and real-time geospatial processing.

- **Stack:** Python (FastAPI), TypeScript (Next.js), PostgreSQL (PostGIS), Celery, Redis, AWS, Docker.
- **Key Achievements:**
  - Built privacy-focused geospatial engine using PostGIS and SQLAlchemy with strict data segregation.
  - Implemented scalable background job processing with Celery and Redis.
  - Managed cloud infrastructure deployment and CI/CD pipelines.

### Programming Instructor

*March 2023 - May 2025* — [Silicon Misiones](#)

Delivered specialized remote instruction to 50+ students, bridging Software Architecture with Data Engineering concepts.

- **Software Architecture:** OOP, Functional Programming, Pattern Matching, Design Patterns.
- **Data Engineering:** ETL pipelines, Database Abstraction (SQLAlchemy).
- **AI/ML Applications:** NLP with Hugging Face Transformers, performance optimization.

*This experience honed my ability to break down complex technical concepts into digestible explanations, a skill I now apply to cybersecurity education.*

# Education

## [B.S. in Cyberdefense](#)

*March 2026 - 2029* — **Universidad de la Defensa Nacional**

The first undergraduate degree in Argentina dedicated specifically to **Critical Infrastructure Protection** and **National Sovereignty** in the cyber domain.

- **Intermediate Title:** Analyst in Cyber Risk Management (2.5 years).
- **Core Focus:** Designing, implementing, and managing cyber defense strategies for state and private defense sectors.

### Curriculum Highlights:

- **Year 1 (Foundations):** OS Architecture, Telecommunications (TCP/IP), Systems Engineering, C/C++ Programming.
- **Year 2 (Ops & Security):** Operational Technology (SCADA/PLC), Secure Coding (OWASP), IoT Vulnerabilities, Applied Cybersecurity.
- **Year 3 (Strategy & Forensics):** Risk Analysis (NIST/MAGERIT), Digital Forensics, AI/ML Security, Critical Infrastructure Normatives.
- **Year 4 (Defense & Warfare):** Cyber Intelligence (APTs), Applied Cryptography (PKI/Blockchain), Cyber Kill Chain, Strategic Foresight.

## Certifications & Courses

- [CS50](#) — Harvard University
- [The Missing Semester](#) — MIT
- [Python Programming MOOC](#) — University of Helsinki

## Technical Skills

- **Languages:** Python, Rust, TypeScript, SQL
- **Frameworks:** FastAPI, Celery, Next.js
- **Data & Infra:** PostgreSQL, PostGIS, Redis, AWS
- **Tools:** Docker, Git, Linux, CI/CD (GitHub Actions)

## Languages

- **Spanish:** Native
- **English:** Professional working proficiency (B2)
- **Portuguese:** Elementary