

# MATIAS TRAPAGLIA

(+549) 2914190365

[matiasdanmansilla@gmail.com](mailto:matiasdanmansilla@gmail.com)

<http://www.linkedin.com/in/matiastrapaglia>

## PROFESSIONAL SUMMARY

Systems Engineer with over 8 years of experience specializing in the **intersection of hardware and software**. Expert in developing **Python-based automation frameworks** for hardware validation, remote instrumentation, and complex system testing. Proven track record in **Linux environments**, HW/SW co-design, and managing full-cycle testing workflows. Passionate about open-source, tinkering with IoT, and building robust tools that bridge the gap between physical devices and digital layers.

---

## PROFESSIONAL EXPERIENCE

### Marvell Technology | Principal Validation Engineer *May 2021 – Present*

*Led a QA engineering team in developing and maintaining a suite of 50+ reusable test cases. Successfully ported these tests across multiple projects and orchestrated parallel execution on 60+ evaluation boards per release to ensure full feature validation.*

- **Python Automation:** Engineered automated scripting flows for fault isolation between HW and Firmware, reducing manual debugging time significantly.
- **Remote Orchestration:** Optimized large-scale testing workflows using Jenkins and data visualization tools (ELK/Grafana) to provide actionable insights into hardware stability.
- **Strategic Lead:** Technical lead for a team of 4, balancing resource allocation for high-stakes hardware launches while maintaining a "hands-on" approach to complex technical bottlenecks.
- **Predictive Validation:** Implemented data-driven algorithms to proactively identify integration risks, shifting the team from reactive debugging to preventive validation.

### Marvell Technology | Senior System Verification Engineer *Jan 2019 – May 2021*

*Successfully launched 4 products by overseeing full validation and bug fixing cycles, encompassing over 100 APIs per product to ensure production-ready quality.*

- **HW/SW Co-Verification:** Executed top-level verification for DSP-based products, focusing on HW/SW interaction, repeatability, and soak testing.
- **Python Test Suites:** Developed and maintained comprehensive Python test suites for regressions and hardware characterization.
- **Debugging:** Conducted deep-dive Firmware debugging and HDL function reading to resolve synchronization and performance issues.
- **Customer Enablement:** Authored technical documentation and provided direct support for global customers (EMEA, APAC, Americas), ensuring smooth product integration.

- **Heterogeneous Computing:** Developed a framework on Intel FPGA systems enabling seamless migration of functional blocks between software execution and hardware acceleration.
  - **Validation Methodologies:** Integrated Model-in-the-Loop (MIL) and Hardware-in-the-Loop (HIL) to validate system behavior during real-time hardware execution.
  - **Performance Optimization:** Maximized synergy between processors and programmable logic to increase system efficiency.
- 

## SELECTED PROJECTS

### Infrastructure Monitoring & Security Analytics Platform [MDTrapaglia/status\\_page](#)

- Developed a Python observability engine for real-time telemetry and security threat identification.
- Built automated log-parsing tools that ensure **data integrity** from ingestion to visualization, correlating system metrics with network events to automate **Root Cause Analysis**.
- **Tech Stack:** Python, Flask, Telemetry (psutil), Network Security, Linux.

### IoT Security & Edge Cryptography (PoC) [MDTrapaglia/IoT\\_signature](#)

- Implemented ECDSA signatures on resource-constrained hardware (8-bit MCUs) to ensure **secure data provenance**.
  - Managed the full data lifecycle: from hardware-level generation and **cryptographic anchoring** to verification in distributed ledgers (Cardano/Bitcoin).
  - Developed an on-chain oracle using NFTs to **manage** real-time sensor data.
  - **Tech Stack:** C++, ATmega328p, ECDSA, Cryptography, Blockchain Protocols.
- 

## EDUCATION & CERTIFICATIONS

- **Postgraduate Specialization in Data Science:** FAMAFA – Universidad Nacional de Córdoba (2021).
- **Electronic Engineer (6-year degree):** Universidad Tecnológica Nacional (UTN) (2017).
- **Telecommunications Technician:** Escuela de Enseñanza Técnica N°2 (2008).

## TECHNICAL SKILLS

- **Languages:** Python (Expert), Bash, C/C++, SQL, Haskell & Solidity/Aiken (Familiarity).
- **Testing & Quality:** Frameworks from scratch, Root Cause Analysis, Performance & Stress Testing, ISTQB principles, Property-based testing.
- **Infrastructure:** Linux (Power User), Git, **Nix**, Jenkins, Docker, CI/CD Pipelines.
- **Data & Monitoring:** ELK Stack (Elasticsearch, Logstash, Kibana), Grafana, ML for Predictive Validation.
- **Domain:** Distributed Systems, Blockchain, Smart Contracts, IoT, DSP.