

Marcos Tomaszewski

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SUMMARY

Backend Software Engineer with **6+ years** of high-impact experience delivering high-throughput, reliable, and scalable systems. Specialized in microservices design for large-scale and security critical infrastructure, integrating HSMs. Core contributor to the Brazilian Digital Signature Standard reference implementation and the gov.br PKI end-user certificate authority, making digital identity and signatures accessible to 85M+ Brazilian citizens. Proven success in high-cadence environments, proactive in identifying security vulnerabilities and logic flaws throughout the development lifecycle.

TECHNOLOGY STACK

Languages	Java (8/11/17/21), Python, C.
Frameworks	Spring Boot, Spring MVC, JPA/Hibernate
Architecture	RESTful APIs, Microservices
Security	PKI, PKCS#11/12, OAuth2, OpenSSL, Digital Signatures
Testing & QA	JUnit 5, Mockito, TDD
Data & Messaging	Kafka, MQTT, SQL Server, MySQL, Redis
DevOps & Infrastructure	Git, Docker, Kubernetes (k8s), CI/CD, Proxmox, HSM

WORKING EXPERIENCE

Aug 2021 – Today LabSEC/UFSC Software Engineer
Engineered scalable microservices for gov.br certification.
Architected multi-protocol signature subroutines ensuring strict DOC-ICP compliance.
Designed a secure asynchronous communication module using Kafka and HSMs.
Developed a software driver enabling seamless communication between legacy code and APIs.
Identified critical bottlenecks through rigorous hardware benchmarking, guiding optimization strategies.
Mitigated technical debt, partnering to refactor legacy code ensuring maintainability.

Jan 2019 – Jul 2021 IATE/UFSC Researcher
Developed computational algorithms for traffic network optimization, utilizing advanced graph theory applications to model urban flow and reduce congestion metrics.
Engineered core features for a large-scale epidemiological spread simulator, implementing isolation strategies and robust data modeling for scenario analysis.

ACADEMIC EXPERIENCE

2025 – Today M.Sc. in Computer Science – UFSC
Researching usability of security protocols.

2018 – 2024 B.Sc. in Computer Science – UFSC
Thesis on optimizing the size of CMS/XML digital signatures.

SOFT SKILLS

Leverages background as a Teaching Assistant to translate complex concepts into clear insights, fostering a collaborative culture that demystifies security for cross-functional teams.
Hands-on approach to resolving critical engineering bottlenecks, delivering solutions with surgical precision under aggressive deadlines.