

Fábio F. O. Silva

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Experience

VTEX

João Pessoa, Brazil

- Senior Software Engineer, Full Time

Oct 2020 – Present

Part of the Payments team, which is mainly responsible for maintaining the PCI-compliant Payment Gateway, and other payment-related products. I already contributed executing stack modernization related tasks, and efficiency improvements, reducing costs and improving the system reliability and resiliency.

Tech Stack: AWS, .NET, C#, SQL, Redis, ActiveMQ.

Scontain U.G.

Dresden, Germany

- Software Engineer, Full Time

Apr 2020 – Sep 2020

At Scontain I mainly contributed to the SCONE runtime, and also contributed to the development of a modified SGX Linux Driver, enabling selective enclave eviction support. Also led the development of a Kubernetes device driver, to make SGX available for being used by Kubernetes pods.

Tech Stack: C, Docker, Bash, Intel SGX, Python, Gitlab, CI/CD, Linux.

Distributed Systems Laboratory

Campina Grande, Brazil

- Research Assistant & Software Developer

Jan 2017 – Mar 2020

Development of an ecosystem of cloud facilities characterized by superior security guarantees, providing protection from attacks by privileged users (e.g. the cloud provider or the system administrator) and software (e.g. the hypervisor). Protection relies on new security extensions recently introduced into commercially available off-the-shelf CPUs.

Tech Stack: Docker, SCONE, OpenStack, Intel SGX, C++, MongoDB, Python, Apache Kafka, Git.

Technische Universität Dresden

Dresden, Germany

- Research Assistant & Software Developer, Intern

Dec 2017 – Jan 2018

Improve the Python support and performance on SCONE. The solution includes modifications on CPython Source Code (C) and enable the use of Intel Math Kernel Library inside SGX enclaves.

Tech Stack: Docker, SCONE, Intel SGX, C, Python, musl libc, PySpeed, PyPy, Git.

PrivloT

Campina Grande, Brazil

- Software Developer

Jan 2016 – Dec 2016

Researched good practices for developing Internet of Things applications that respect people's privacy, building several applications that serve as case studies for research, and validation of our recommendations for software developers.

Tech Stack: MongoDB, Python, Flask, Ionic, JavaScript, AngularJS, D3.js, Git.

- Analytics Lab**

Data Analyst & Software Developer

Worked on analysis of 3 years of consortium of agricultural cohort data of more than 200 farmers, improving visualization of data using JavaScript frameworks and reporting the analysis to improve the consortium. In the public transportation field, worked on development of auxiliary mobile application that helped register city's bus stops and validate bus routes, bringing precision by using GPS and completing the dataset provided by our partner.

Tech Stack: R, D3.js, Chart.js, Android SDK, Git.

Campina Grande, Brazil

Aug 2014 – Dec 2015
- Software Practices Laboratory**

Software Developer & Research Assistant

At SPLAB I worked on development of an Eclipse plug-in that allows the developer to switch Java Collections on JCF client applications source code with a few clicks. Demonstrator video: <https://www.youtube.com/watch?v=PUIEPIVml-Q>

Tech Stack: Java, Eclipse, Eclipse JDT, Design Patterns, Git.

Campina Grande, Brazil

Nov 2012 – Jul 2014
- 9Ideia Digital**

Web & Android Developer, Intern

Created web pages and content management systems (CMS) over Apache-MySQL-PHP stack, also developed several Android applications using Android SDK. Mandatory internship to get Certificate in Information Technology.

Tech Stack: Apache, HTML, CSS, JavaScript, Java, Android SDK, jQuery, PHP, MySQL, Git.

Campina Grande, Brazil

Nov 2011 – Feb 2012

Voluntary Experience

- CyanogenMod Project**

Device Tree Maintainer

Added initial support to Sony Xperia Z3 Dual (D6633) on CyanogenMod project. It is also the device tree maintainer's role to perform code reviews of contributions made through commits on Gerrit Code Review system.

Tech Stack: Linux Kernel, Android Build Engine, AOSP, Android Architecture, C++, Makefile, Gerrit, Git.

Nov 2015 – Oct 2016

Education

- Udacity, Inc.**

C++ Nanodegree

Remote

2021
- Federal University of Campina Grande**

M.Sc. Computer Science, Information Security

Campina Grande, Brazil

2018 – 2020
- Federal University of Campina Grande**

B.Sc. Computer Science

Campina Grande, Brazil

2012 – 2017
- Infogenius Technical College**

Certificate in Information Technology

Campina Grande, Brazil

2010— 2012

Notable Projects

- **Kafka Proxy SGX**

- *Lead Developer, Software*

Kafka Proxy SGX is a transparent, drop-in component that provides encryption to incoming and outgoing data in a Kafka cluster, leveraging confidential computing techniques not only to ensure data-at-rest encryption, but also to protect the data and encryption keys from the operators of the Kafka cluster.

- **RunMusic App**

- *Founder & Developer, Android Application*

RunMusic gives to the user an innovative experience of listening to the music that mostly matches their running pace. This application won the 1st place in Entrepreneurship category of III Campus Mobile national contest.

- **Java Compiler**

- *Academic Project, Compiler Course*

Built a simplified Java Compiler using JFlex and CUP. The front-end of the compiler is covering most of the language. The back-end generates Assembly code for a simplified scope of the language.

Key Skills

- **Programming Languages:** Python, Java, JavaScript, R, C/C++, C#.
- **Cloud-related and Orchestration:** Docker, OpenStack, Kubernetes.
- **Others:** Git, Gerrit, Maven, Linux, SQL, MongoDB.

Languages

- Portuguese (*native*)
- English (*professional proficiency*)

Awards

- **2015:** Best application in Entrepreneurship Category of III Campus Mobile national contest, promoted by Instituto Embratel-Claro.
- **2011:** 1st place on programming contest promoted by Infogenius Technical College.

Publications

S. Arnautov, A. Brito, P. Felber, C. Fetzer, F. Gregor, R. Krahn, W. Ozga, A. Martin, V. Schiavoni, F. Silva, M. Tenorio, and N. Thümmel. PubSub-SGX: Exploiting Trusted Execution Environments for Privacy-Preserving Publish/Subscribe Systems. In *2018 IEEE 37th Symposium on Reliable Distributed Systems (SRDS)*, pages 123–132, 10 2018.

I. Blanquer, F. Brasileiro, A. Brito, A. Calatrava, A. Carvalho, C. Fetzer, F. Figueiredo, R. Guimaraes, L. Marinho, W. Meira Jr, A. Silva, A. Alberich-Bayarri, E. Camacho-Ramos, A. Jimenez-Pastor, A. L. Ribeiro, B. Nascimento, and F. Silva. Federated and secure cloud services for building medical image classifiers on an intercontinental infrastructure. *Future Generation Computer Systems*, 110, 04 2020.

M. S. L. da Silva, F. Silva, and A. Brito. Squad: A Secure, Simple Storage Service for SGX-Based Microservices. In *2019 9th Latin-American Symposium on Dependable Computing (LADC)*, pages 1–9, 11 2019.

L. Sampaio, F. Silva, A. Souza, A. Brito, and P. Felber. Secure and Privacy-Aware Data Dissemination for Cloud-Based Applications. In *Proceedings of the 10th International Conference on Utility and Cloud Computing*, UCC '17, pages 47–56, New York, NY, USA, 2017. ACM.

F. Silva, M. Silva, and A. Brito. Kafkaproxy: data-at-rest encryption and confidentiality support for kafka clusters. In *SBSeg'2020, XX Simpósio Brasileiro em Segurança da Informação e de Sistemas Computacionais*, 10 2020.