Rodrigo Chiossi

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Experience

Davinci Derivatives, Netherlands **Mar.2019 - Present**

Software Engineer

- As the lead of the digital currencies development team, I have designed the topology and deployed a trading system with multiple nodes across Asia and europe. This system involved ultra low latency communication and data processing, requiring the adoption of private cross-continental lines and pre-processing of large amounts of trading data to enable transmission across said lines. The system also required integration of cloud providers (AWS, AliCloud) and colocated servers (LD4, NY5). My work added eight exchanges to the company's portfolio and enabled profitability in low latency trading.
- As the lead of the India development team, I have certified trading software to operate in the NSE exchange and have integrated order execution though a third party partner into our trading system. I also deployed systems to monitor and manage the trading infrastructure in India.
- I worked on development and integration of automated trading and algorithm development for Brazilian and European exchanges on the TBricks trading platform.

Intel Corporation, Netherlands **Oct.2013 - Mar.2019**

Senior Software Engineer - Open Source

- As the Project Lead of the mixer-tools open source project, I was responsible for establishing the project roadmap and allocating resources of a development team composed of 6 developers. Mixer-tools is a software used to do daily releases of Clearlinux distribution and is critical for a project's operation. Within 6 months after I assumed the leadership of the project, I had reduced the number of mixer related failures on devops by 80% by creating a new CI/CD infrastructure and by establishing a communication channel between development and devops team. I also worked on performance improvements on execution time, reducing the overall build time from 6 hours down to 3 hours by optimizing disk IO and parallelizing the workflow.
- As Technical Lead of a small development team (3 developers), I implemented a support framework for Intel Aero (a drone platform for autonomous flying research) to enable the development of collision avoidance algorithms. This framework handled heavy image processing and navigation control under constrained memory and processing power. This project led to a partnership between Intel and the University of California, which used the framework for engineering classes.
- I worked as a Software Developer for Intel's Soletta project, a high performance and low memory footprint framework for IoT devices. Besides work on its core module, I developed modules for PWM hardware interfaces and for MQTT messaging.
- I worked on Android development for x86 platforms to leverage Intel's processing capabilities and improve Android experience on laptops. The work was focused on performance improvement in the graphic stack. Part of this work was integrated into Android's mainline and was presented in my talk at Android Builders Summit 2015.

Samsung, Brazil **Dec. 2010 - Oct. 2013**

Mobile Security Engineer

- As the Technical Lead in the mobile security team, I was responsible for analysis and reverse engineering of all major threats that targeted Samsung's flagship phones. I was responsible for technical analysis of major incidents, like the 2013 pwn2own exploit for the Galaxy S3 published by the security company MWR. I also reverse engineered code obfuscators used by Android malware and developed automated tools to counteract their effects. Part of this work has been integrated in the Drozer tool, an open source tool for security analysis on Android.
- I worked on Linux kernel modules and modifications to enhance Android security. I implemented ASLR (a security feature that randomizes the memory mapping of applications) for samsung phones about 2 years before it was included in Android's mainline. I also implemented modules to interface ARM's Trustzone feature to enable hardware encryption for B2B applications.
- I performed security assessment of Android applications, framework, kernel and bootloader for Samsung Galaxy S and Galaxy Note line (Samsung Galaxy S I, II, III, IV and Samsung Galaxy Note I, II, III).

Motorola Inc., Brazil **Jan. 2010 – Dec.2010**

Software Developer **(Internship)**

- I worked with battery management for Qualcomm's 7225 chipset and debugged battery testing in the production line.
- I developed the user interface for a push-to-talk over cellphone target at the Mexican market

Academic Experience

Research sponsored by FAPESP (Brazilian Governmental Institution) **Mar. 2007 – Oct. 2009**

Research in Computer Architecture, Transactional Memory and Compiler Optimization

- Development of a compiler optimization for multi-core processors based on transactional memories.
- Transactional Memory Integration in LLVM.
- Development of a Floating Point module for a MIPS processor in ArchC.

Education

State University of Campinas (UNICAMP) – Faculty of Electrical and Computer Engineering **Jan. 2006 - Dec.2010**

- **B. E. Computer Engineering**

Talks & Presentations

Dublin Linux Community Meetup, Dublin - Ireland **Nov. 2019**

Clearlinux Overview

- Introduction to Clearlinux project and overview of swupd update protocol.

Android Builders Summit 2015, San Jose – USA **Mar. 2015**

Anatomy of a Screenshot

- Vertical Analysis of Android software Stack, from application calls down to OpenGL API calls and discussion of Issues with the current stack and the improvements introduced in Android Lollipop.

Android Builders Summit 2014, San Jose – USA **Abr. 2014**

A Deep Dive Into DEX File Format

- Detailed description of DEX file format and techniques for DEX file manipulation. Introduction to the dexterity library.

Cryptorave 2014, São Paulo - Brazil **Abr. 2014**

O quão vulnerável é o meu Android?

- Vulnerability frequency analysis and common insecure code patterns in Android.

BSides São Paulo 2013, São Paulo - Brazil **Nov. 2013**

Dexterity Library

- Introduction to dexterity library and DEX file manipulation.

H2HC 2013, São Paulo – Brazil **Oct. 2013**

Android: Game of Obfuscation – Rodrigo Chiossi & Jurriaan Bremer

- This talk presents information on reverse Engineering proprietary obfuscators, reconstructing DEX files, obfuscation techniques for DEX files and on building robust tools for reversing Android Applications.

The Developer's Conference 2013, São Paulo – Brazil **Feb. 2013**

(In)Security of Android Applications

- This talk presents vulnerable code patterns in Android IPC mechanisms, Attack methods for recurrent insecure code patterns and how to safely implement Android IPC.

Android Builders Summit 2013, San Francisco – USA **Feb. 2013**

When Security is not a Developers Fault

- This talk discusses the security model of Android IPC and the flaws in the platform design. It also presents a vulnerability frequency study and solutions for security issues caused by the presented flaws.

Android Builders Summit 2012, San Francisco – USA **Feb. 2012**

AndroidXRef: Speeding up the Development of Android Internals

- Introduction to AndroidXRef project. Discussion on improving development life-cycle of Android Internals and iIncreasing availability of information regarding Android Internals.

Patents

System for data flow protection and use control of application and portable devices configured by location **US 13/339,048**

- A firewall framework that runs in mobile phones that has its security profiles defined by the device location.

Projects and Communities

AndroidXRef **Nov. 2011 - present**

- Online project dedicated to Developers of Android Internals.
- Hosts the Indexed source code for all major Android versions and their corresponding Kernel branch.

LHC – Campinas Hackerspace **Oct. 2011 - Dec. 2015**

- Co-Founder and supporter.
- Co-Organizer of Tosconf, annual Hackerspace conference – 2012/2013.

Smash The Stack Network **Jan. 2010 - Dec. 2016**

- Maintainer of the *Amateria* wargame.

Open Source

mixer-tools	https://github.com/clearlinux/mixer-tools	**Maintainer**
Coav	https://github.com/intel/collision-avoidance-library	Maintainer (Archived)
Soletta	https://github.com/solettaproject/soletta	Developer
dexterity	https://github.com/rchiossi/dexterity	**Original Author**
Mercury (Drozer)	https://labs.mwrinfosecurity.com/tools/drozer/	Developer

Awards

B-Sides London 2013 - Android Hacking Challenge **1st Place**

- Full Analysis write-up - http://androidxref.com/BinaryBandits_BSides_Challenge.pdf

Programming Languages

- C
- Go
- Python
- C++
- ASM (x86/arm)
- Java

Languages

- English - Fluent
- Dutch - Intermediate
- Portuguese - Native