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Summary

I am a software developer passionate about low-level who enjoys to understand how the machine really works. I am interested mainly in C, Go, assembly, embedded systems, Linux kernel and Plan9 operating system. I like to understand the definitions, standards and concepts before applying them and I take simplicity as lifestyle and coding philosophy.

I have dedicated many years of my life to computer security, more precisely malware analysis in UNIX-like environment. I developed an opensource project entitled malEL-Ficus, which is a library and a toolkit to analyse and infect ELF binaries.

As entrepreneur I founded SEC+, a company focused in computer security consultancy, where our main tasks were pentest development, codereview and coaching.

Currently I'm working as a team leader at Neoway, and I've been coaching other developers, guiding, researching and defining technologies. I'm the developer leader of the Neosearch, a library and service to full text search engine written in Go.

I'm also very keen of functional programming, particularly Lisp and Scheme.. I've also worked with Java, Python, JavaScript, PHP, Lua and C++. Apart from my technical skills, I'm a committed professional, with can-do attitude, extremely motivated and someone who enjoys sharing knowledge.

Experience

Neoway

Sept 2014 - Present

Software Engineer

Main Technologies: Linux, Go, Python, MongoDB, PostgreSQL, LevelDB, NeoSearch;

Technical consultant of many product's architecture. Team leader and engineer of a high performance maps software, using a micro-service architecture for store, normalize and process spatial operations. This software was developed with simplicity in mind and loosely coupled modules/services. Automatic deploy in Amazon AWS using technologies like CoreOS, Docker and Kubernetes. In the meanwhile I started an open-source library and server for full text search called NeoSearch. The project is designed from the ground up to solve very specific search engine problems of Neoway related to fast JOIN operations between datasets and make the process of data modeling changes more easy.

SEC+

Nov 2011 - Sept 2014

IT Security Consultant

Main Technologies: Linux, x86 assembly, C, malelficus, metasploit;

I was CEO and had worked as IT security consultant, performing penetration tests, code review and coaching. At the same time, I'd started the project malelficus for malware analysis and study of ELF infection methods in unix-like environments. The whole project was written in C. Moreover, I lectured about it in the following events: H2HC (Hackers to Hackers Conference), FISL (International Forum of Free Software), OWASP Floripa Day and others.

Neoway (Freelancer)

Dec 2012 - Dec 2013

Software Engineer

Main Technologies: Linux, Python, Scrapy, Redis

Development of web crawler using Python, Scrapy framework and redis (PUBSUB) for message passing between services.

Neoway

Jan 2011 - Mar 2012

Software Engineer

Main Technologies: Linux, C/C++, Python, Java

I was primarily involved in web scraping projects. Below are some of activities that was my responsibility:

- Development of bots/spiders/crawlers for web using Java;
- Develop an application for sending massive SMS;
- Research in data mining, web scraping and pattern recognition.

Access1 Sistemas Informativos

Feb 2010 - Jan 2011

Software Engineer/Security Consultant

Main Technologies: Linux, C, shellscrip, x86 assembly;

Linux embedding development for ARM SoC, processor WM8505 and VT8500; Research and development of scraping solutions; Reverse engineering of windows applications and web technologies (Flash/Flex);

Freelancer

Jan 2007 - Feb 2010

Web Developer

Main Technologies: PHP, DoctrineORM, Apache, HTML, CSS, Javascript;

Web developer as freelancer for e-commerce companies. At that time I'd created the Orion-Framework web project.

Skills Base

Operating Systems: Linux based (Archlinux, Debian, CoreOS), Windows NT/XP/Vista and Plan 9

Networkings: TCP/IP, UDP, IL, OSI Model

Programming Languages: C, Go, Scheme R5RS, Python, Javascript, Lua and Java;

Processor architecture: x86/IA-32, AMD64 and some ARM64;

Languages: Fluent in Portuguese, Intermediate in English.

Open Source Projects

- **neosearch:** NeoSearch is a feature-limited full-text-search library with focus on indices relationships. Its main goal is to provide very fast JOIN operations between information stored on different indices. Currently in active development.
- **libmalelf:** The libmalelf is an evil library that SHOULD be used for good! It was developed with the intent to assist in the process of infecting binaries and provide a safe way to analyze malwares. (<https://github.com/SecPlus/libmalelf>)
- **malelf:** Malelf is a tool that uses libmalelf to dissect and infect ELF binaries. (<https://github.com/SecPlus/malelf>)
- **orion-framework:** PHP Web Framework (<https://github.com/tiago4orion/orion-framework>)

More Info

- **Linkedin:** <https://linkedin.com/in/tiagonatel>
- **Github:** <https://github.com/tiago4orion>