Curriculum Vitae

André Sá

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Phone number	+351969089204
Email address	silky.sa@gmail.com
GitHub	https://github.com/siiky
LinkedIn	https://www.linkedin.com/in/andre-m-sa/
Website	https://siiky.github.io/

Portuguese	Native
English	C1 (self-assessment)
Japanese	B1 (BabeliUM Language Institute)

Work Experience

Internship at Accenture (July of 2019)

My assigned job was developing unfinished features, aswell as new features, for a consumer facing product. These features entailed working with Augmented Reality in iOS. In the process, I've also learned about the Scrum framework.

Security Analyst at Checkmarx (September of 2019 - present)

My job as an analyst entails analysing security vulnerabilities that have been assigned a CVE number, with the end goal being to learn which versions of the affected software are actually vulnerable. Although I'm not tasked with software development of any form, as vulnerabilities are found in a wide range of projects, I come in contact with many languages, the most common being C, Clojure, Java, JavaScript, PHP and Python.

Education

Bachelor's in Computer Science at University of Minho

Notable grades for Computer Science classes – where applicable, (practical grade/exam grade/final grade):

Functional Programming (18) Introduction to the functional paradigm with Haskell and study of common purely functional data structures and algorithms.

Program Calculus (16) Study of Category Theory applied to programming; the practical assignment consisted in solving five exercises using the material learned in class.

Operating Systems (16/17/17) Study of POSIX (mostly UNIX) systems and implementation of crude parallel programs in C; the practical assignment consisted in developing a notebook processor (like Jupyter), that would execute the commands and embed the results in place;

Concurrent Programming (19/17.8/18) Classic concurrent and parallel programming with monitors/semaphores/locks in Java, and concurrent and distributed programming by message passing in Erlang; the practical assignment consisted in developing a multiplayer game (like hole.io), the client in Processing (Java) and the server in Erlang;

Interaction and Concurrency (18.5/12.5/15) Study of Reactive systems with Process Algebra, and Quantum Computing on IBMQ.

Project (15) Project proposed by professors, with the title *Functional Paradigm in Haskell and C++*: We were asked to show how functional programming can be used in C++ and to explain some concepts of the functional paradigm; the repository can be found here: https://github.com/apx5/Projeto19-20.

Notable grades for Mathematics classes:

Discrete Mathematics (13) Study of Graph Theory and Number Theory.

Algebra (15) Study of concrete algebraic structures, namely, groups and rings, and concrete examples of these structures such as symmetric groups and quotient groups and rings on $\mathbb{Z}$.

Universal Algebra and Categories (14) Study of Universal Algebra, and Category Theory. Under universal algebra, the focus was placed on the duality of lattices defined as algebraic structures and partially ordered sets. Under category theory, we've studied primarily common properties of categories, ways to compose categories and ways to analyse and generalise these composition techniques with functors.

Additional Information

Programming Languages

From University and personal projects, the languages that I have experience with, enjoyed working with, and would like to work with again:

- C
- Scheme
- Erlang
- Haskell

From reading books, papers and blogs, the languages that I would like to learn:

- Rust – safe systems language, with an advanced type system;
- Idris – for refinement and dependent types;
- Common Lisp – for advanced metaprogramming and arbritary compile-time computation;

Events

I have participated in programming contests, such as Google Hash Code, Google Code Jam, Google Kickstart, MIUP and Battle of Universities.

Personal Projects

During my spare time I have developed personal projects and contributed to open source projects. The most notable among them:

https://github.com/siiky/star A simple `tar` clone.
https://github.com/siiky/c-utils Type-generic data structures and utilities written in C, tested with QuickCheck-like tests.
https://github.com/universal-ctags/ctags Found and fixed two `NULL`-dereference bugs.
https://wiki.call-cc.org/eggref/5/cis Found and reported a bug.
https://github.com/iraikov/chicken-unitconv Changed all constants to exact numbers, which improves precision.

Areas of Interest

I have a special interest in functional and distributed programming and in code quality, I believe low-level and performance to be very important aspects of programming and programming languages, and because of this, the languages that have caught my eyes most recently are CHICKEN Scheme and Rust.

I'm a proponent of the FLOSS movement and sharing of knowledge in general.