Curriculum Vitae

André Sá

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Carta de motivação

Como apoiante de transportes públicos colectivos, e natural e residente de Braga, é natural que use os autocarros da TUB para me deslocar na cidade.

No entanto, esta opção nem sempre é a melhor ou mais fácil. Cartazes com mapas e horários das linhas são muito bem-vindos, mas apenas se forem actuais, o que, infelizmente, não é o caso em muitas paragens.

O mesmo se pode dizer sobre os mapas e horários disponíveis para download no site da TUB. Alguns PDFs de horários não são actualizados há vários anos. Inclusive, recentemente vi o mapa da linha 66 que ainda mostra o autocarro a passar pela Rua Nova de Santa Cruz no sentido da UM e a Av. Padre Júlio Fragata. Como qualquer pessoa regular dessa zona pode comprovar, a Rua Nova de Santa Cruz jé não permite passagem nesse sentido há muitos anos. Também o ficheiro GTFS, cujo papel é descrever completamente e correctamente toda a rede, com horários e tudo, e que é usado pelo Google Maps tal como disponibilizado, está errado e desactualizado.

Mas deixemo-nos de lamentar o estado das coisas, não é esse o meu objectivo aqui. O meu objectivo é apenas dar exemplos de detalhes importantes que podem ser melhorados com alguma dedicação.

Como programador e cientista da computação, além de contribuidor do OpenStreetMap, acredito que sou capaz de melhorar o estado destes problemas se me for dada a oportunidade.

Se estes pequenos pontos forem melhorados, o serviço da TUB vai melhorar muito como um todo. Com o ficheiro GTFS actualizado, nem utilizadores regulares nem turistas precisam de recear se realmente a rota sugerida pelo Google Maps está certa e os vai levar ao seu destino.

Currículo

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Email address	silky.sa@gmail.com
SourceHut	https://git.sr.ht/~siiky
GitHub	https://github.com/siiky
LinkedIn	https://www.linkedin.com/in/andre-m-sa
Website	https://siiky.srht.site/

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

Education

Studied Computer Science at the University of Minho for my Bachelor's, and currently enrolled for my Master's in Informatics Engineering, also at the University of Minho, specializing in *Formal Methods* and *Distributed Systems*.

Professional Experience

Internship at Accenture (July 2019)

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

Application Security Analyst at Checkmarx (September 2019 ~ September 2021)

The job as an analyst consists in analysing existing security vulnerabilities, with or without a CVE number, the end goal being to learn which versions of the affected software are vulnerable in reality. Although I'm not tasked with software development, apart from the occasional improvement to our internal tools of everyday use, as vulnerabilities are found in a wide range of projects, I come in contact with many languages, with the most common being C, Clojure, Java, JavaScript, PHP and Python.

Software Engineer at Lamassu (September 2021 ~ present)

Responsible for maintaining and refactoring existing code and developing new features, using almost exclusively JavaScript on Node.js and React projects. Getting to learn a lot about blockchain research and especially cryptocurrency, but also the mess that is JavaScript… Work involves usual web development, both back and front-end, but also development of internal-use libraries to interface with cryptocurrency nodes and servers. Biggest feature yet was replacing an old *ad-hoc* `REST`-like machine-server interface with a very strict GraphQL one.

Additional Information

Areas of Interest

I'm a big proponent of the FLOSS movement and sharing of knowledge in general. On my spare time I work on/contribute to open source projects, personal and otherwise, I frequently contribute to OpenStreetMap mainly as a mapper, and occasionally contribute to Wikipedia.

I have a special interest in functional and distributed programming, and in code quality. I believe low-level details 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 Elixir, CHICKEN Scheme, and Rust.

Other than technical programming-related topics, I enjoy reading and learning about various other hard and natural sciences. These include, but are not limitted to: mathematics (especially abstract math), philosophy, psychology, ecology, zoology, botany, physics, and chemistry.

Additionally, I write from time to time about these subjects on my personal website, to better organize myself and my thought, and in hope that my writings may be of use to other sentient beings as limitted as myself.

Open Source Work

Of the open source projects I work on and contribute to, such as IPFS and the CHICKEN Scheme ecosystem, these may be my most notable contributions:

https://git.sr.ht/~siiky/ipfs.scm & https://git.sr.ht/~siiky/ipfs.lua Author & maintainer of IPFS HTTP RPC clients in CHICKEN Scheme and Lua.

https://www.phpmyadmin.net Found and responsibly disclosed CVE-2020-26935, while working at Checkmarx.

https://github.com/universal-ctags/ctags Found and fixed two `NULL`-dereference bugs.

https://github.com/siiky/invidious.scm Author & maintainer of an Invidious REST API client in CHICKEN Scheme.

https://git.sr.ht/~siiky/transmission.scm Author & maintainer of a Transmission RPC client in CHICKEN Scheme.

https://github.com/iraikov/chicken-unitconv Changed all floating-point constants to exact numbers, in order to improve arithmetic precision by default.

Programming Languages

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

- Erlang
- Scheme

- C
- Haskell

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

- Elixir – the "next-gen" Erlang, with lots of new features, and good tooling;
- Rust – safe systems language, with an advanced type system;
- Idris – for playing with types;
- Go – for simple concurrency management;
- 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; and have attended tech-related conferences, such as LambdaDays.