Ana Paula Carvalho

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I'm a scientist at heart with a love for tech. I adapt easily and I found that my mathematical thinking was a valuable tool to thrive. My goal is to improve the world with fun, friendly and innovative solutions. Currently, I work as a Django developer/ Project Manager.

Experience

Raw Jam
Django developer | December 2015 - now

I develop **full stack** with a focus on **Django** and **Python** programming. My work includes **end-to-end web apps** and tools as web scrapers, graphs and algorithms for analytics, searches and document parsers. Raw Jam is a small web agency which allowed me to understand all the aspects of the **business** and apply my passion for tech to find **new solutions** and strategies. Consequently, I was trusted with Project Management responsibilities as: overviewing the tasks at hand, reviewing the functional and usability requirements and **communicating** with the client. I have significantly improved my tech skills, business strategy skills and my overall understanding of the industry by working with a variety of clients and challenges ranging from medical to financial.

Stellar @Lisbon Challenge - startup accelerator
Content Hacker | September - November 2015

Stellar aims to be your daily digest of knowledge. My first goal was to curate interesting content and upload it to the database in **mongodb**. Right now, I am researching ways to build recommendation systems and getting acquainted to Python packages for Machine Learning such as pandas and scikit-learn.

NASONI @HASLab - INESC TEC
Junior Researcher | July-December 2014

Main accomplishments:

- ➔ Understand the state of the art on mathematical modelling of Gene Regulatory Networks (GRN);
- ➔ Study the application of Differential Dynamic Logic on GRN;
- ➔ Develop and adapt case studies to the hybrid using the KeYmaera proof tool to prove useful properties.

This improved my **mathematical modelling** skills and **critical thinking** since I had to study question the existing models and develop new solutions.

Education

2013 - 2015 (unfinished)

Master's Degree in Informatics Engineering | University of Minho

Relevant courses:

- ➔ Software test and analysis;
- ➔ Intelligent Agents;
- ➔ Specification and modelling.

My success at the Formal Methods in Software Engineering branch and Physics background led to a **research** opportunity at NASONI project. I learnt about how to **test**, **evaluate** and calculate programmes which made me a better **programmer** and **thinker**. I quickly learnt the tools and mindset to **thrive in a different environment**. I have participated in an entrepreneurial course designing, building and publicising a web app.

2010 - 2013

Physics Degree | University of Porto - Faculty of Sciences

Relevant courses:

- ➔ Differential Calculus;
- ➔ Computational and Statistical Physics;
- ➔ Mathematical Analysis;

I developed **analytical thinking** during **calculus, statistics** and physics courses. I learnt how to make sense of **experimental data** using **Python**'s scientific libraries and linear regression. Envisioning a master's in Informatics, I took a **human-computer interaction** course.

Relevant Projects

CLAP | October 2014 - February 2015

Main tasks:

- ➔ Write requirements: usability and functional;
- ➔ Design the user interface and develop the backend;

CLAP is an app for university students that aims to assist life on campus. I learnt how to **work effectively in a big team**, how to **communicate** with potential clients and the best ways to convey ideas.

Exploring random-number generators | January 2014 - July 2014

Main goals:

- ➔ Show that the NIST's algorithm DUAL_EC_RNG has backdoor;
- ➔ Implement and prove operations on Elliptic Curves using the Cryptol language.

This project tested my **problem solving** and **decision making** since we had to find ways to go around bugs. This project enriched my **mathematical toolset**. Grade: 19/20.

Skills and Activities

Fluent English (C1): **Cambridge Advanced English** (CAE) certificate.

Python programming and Data Structures (4 years): Programmed both physics and computer science projects in Python for the past 4 years. Recently, I have built a number of tools including web scrapers, graphs for analytics and search algorithms. I have also worked with **API**'s including Youtube's.

Web Technologies (2 years): Currently working in the tech industry with **Django**, **HTML5, JavaScript and CSS3** with 2 years experience. Before, I developed a math web app for children and some other personal projects. The knowledge was consolidated during CLAP project, where I was introduced to **AngularJS** and **Django**.

Programming paradigms and languages: Knowledge of logic, functional, object-oriented and procedural programming. Basic **Java**, **C**, **R**, **Prolog** and **Cryptol**.

Other tools: MS Excel for data analysis and plotting in Physics experiments; Latex for writing reports and presentations; **Git** version control. **Heroku** cloud platform and **Amazon AWS** (EC2 and S3).

Creativity **Award:** A friend and I applied to "Create 2009" - a national contest on the European Year of Creativity and Innovation - with an idea: a self-sustainable gym. We were one of the **ten most creative ideas** to be awarded.

Volunteering: I volunteered at a mental health institution for 8 months while in high school. It was very rewarding: it taught me to have a positive attitude and to be more understanding of **different realities**.