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. I am very passionate about what I do and my motivation is always to seek new ways to improve. I am eager to build **innovative**, **fun** and **friendly** solutions!*

Experience

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.

LIFEisGAME @ Porto Interactive Center

Professional Internship | February-November 2012

My main task was to build a Graphical User Interface (GUI) bearing in mind the **usability** of the product for Affective Computing purposes. I learnt a lot about **user experience guidelines** and have applied it ever since in my work.

Education

2013 -

Master's Degree in Informatics Engineering | University of Minho

Relevant courses:

- Software test and analysis;
- Intelligent Systems;
- 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 been exposed to intelligent systems concepts and **Machine Learning** which made me very excited about the future.

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. The resulting project led to an internship in Affective Computing as mentioned above.

Relevant Projects

CLAP | October 2014 - February 2015

Main tasks:

- ➔ Write requirements: usability and functional;
- ➔ Conduct interviews and analyse data;
- ➔ 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. I was responsible for writing **requirements** and **collecting and analysing data** from users in order to make the right decisions concerning the **business strategy** and user experience. **Reports** and **presentations** for colleagues and business owners made me a good communicator. Collective grade: 16/20.

iArchitect | January 2014 - July 2014

Main goals:

- ➔ Develop an interface following the **UX design guidelines**: Interview, design, prototype and test;

iArchitect is a virtual reality interface aimed at landscape architects. The project went to several stages: previous studies, conceptual design and **cognitive walkthrough**. All the gestures, voice commands and visual elements were supervised by a landscape architect to keep the interface intuitive. Grade: 20/20.

Skills and Activities

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

Portuguese: Mother tongue**.**

Interaction Design and Prototyping: Designed interfaces, conducted heuristic evaluations and implemented prototyping techniques for a course on Human Computer Interaction and during the CLAP project. (~ 6 months)

Web Technologies: Developed a math web app for children with **HTML5, JavaScript, CSS3** and **Ajax**. Consolidated the knowledge during CLAP project, where I was introduced to **AngularJS**, **NodeJS** and **Django**. (~1 year)

Python programming and Data Structures: Programmed both physics and computer science projects in Python. More recently, basic artificial intelligence algorithms and a verification conditions generator (VCGen). Have also used **Scipy** and **matplotlib** libraries for data modelling and plotting. (~ 3 years)

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; **MS PowerPoint** and **Prezi** for more interactive presentations. **Git** version control. **Heroku** cloud platform.

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**.

International programs: Student exchange back in high school: Austria and Denmark; In 2013 I was in Northern Ireland for a "Youth in Action" program. The experiences were very important for my development as an independent individual and **curiosity about diverse cultures.**