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I am a full stack developer, with a can-do attitude, and more than a decade of experience implementing web applications and pipelines. I have worked with companies and research organisations, in areas including environment, agriculture, and bioinformatics. I use Python, R, SQL, and shell script on a daily basis to extract, aggregate, explore and visualise data. I bring a mix of research experience from my PhD and postdoc with a service-oriented and software engineering perspective from industry.

### **Qualifications summary**

- Experience designing, developing, documenting web applications and pipelines
- Experience using good software engineering practices
- Expert in spatial analysis, web mapping, and geocomputation
- Expert in meteorological and remote sensing data for Agriculture and Conservation
- Expert in relational and non-relational databases - Oracle Certified DBA and PL/SQL

### **Developing web-applications to industry standards**

I led the development and delivery of many web applications, collecting user requirements, drafting system architectures, setting up environments (development and production) and services (web servers and databases), developing, and training users.

### **High analytical ability to analyse and illuminate data, interprets reports, evaluate and criticise texts and bring new insights / Strong organisational, collaborative, and communication skills for dissemination of results**

My PhD project required a significant amount of analytical thinking to combine and analyse genetic, environmental, and linguistics datasets. This process required a solid knowledge of the R statistical environment. I also had to manage my time, plan and report activities to my supervisors and colleagues, to make most of the resources available.

### **Understanding and experience of research in the commercial sector**

My role at Simepar involved developing weather tools and services based on the experience and knowledge of the research and development team. That means translating severe weather models in operational early warning systems used by civil authorities or designing a computational infrastructure and pipeline for plant growth models using crop varieties in different spatial and temporal points.

### **A broad understanding of a mixture of database technologies**

I am a heavy user of relational databases, capable of elaborate complex SQL queries to extract the required data. I initiated the non-relational databases (Riak and Redis) at SIMEPAR and School of Life Sciences projects respectively, exploring their capability to store binary and JSON data, and the access through REST APIs. I acted as Oracle official instructor and also developed and delivered PostgreSQL and PostGIS training.

### **Experience in data gathering and data aggregation**

At Ekkosense, I developed a pipeline in Python to extract weather station data from the MetOffice REST API, applying quality control techniques before using the data in the solar panel and wind turbines yield models.

### **Experience in developing new approaches, models, techniques or methods in research area**

The minoTour (School of Life Sciences) project involved implementing a new approach to store information about DNA sequencing coverage, avoiding informing the depth at each position. I also integrated command line tools such as minimap with asynchronous jobs, providing extra functionality for the users.

### **Experience in utilising machine learning techniques on real world datasets**

The main output of my masters was an algorithm based in evolutionary algorithms to simulate and assess different weather station networks designs. I applied this algorithm to plan the installation of a network composed of more than 200 weather stations throughout Brazil in a contract with the ABC Research Foundation, a research institute funded by a cooperative of dairy farmers.

### **Programming languages**

My recent projects (last four years) have been developed using Python, Django and Django REST Framework. I also comfortable programming in modern Javascript and several tools such as npm, yarn, and webpack. More recently, I started using Bootstrap and Vue JS as the main CSS and Javascript frameworks. During my PhD, I had contact with R, and it is now my primary tool for statistical analyses. I am also comfortable developing in Java for web and PHP.

### **Relevant Experience**

2017 - 2018	University of Nottingham	School of Life Sciences, Software developer
2017 - 2018	GeoMantiqueira project (Brazil)	Software developer
2017 - 2017	University of Nottingham	Business School, PI: Dr Duncan Shaw
2015 - 2016	Ekkosense (UK)	GIS expert and weather consultant.
2009 - 2013	Simepar (BR)	GIS expert and software developer.

### **Additional Skills and Qualifications**

Statistics	R, RStudio, Jupyter notebooks	Tools	Git, Maven, npm, yarn
GIS	QGIS, ArcGIS, OpenLayers, GeoServer	Languages	Python, SQL, modern Javascript, Java, PHP, Shell script
Databases	PostgreSQL, Oracle, MySQL	Machine learning	Evolutionary algorithms
NoSQL	Redis and Riak	Cloud computing	AWS and Linode

### **Education**

2013 - 2018 **PhD Geography**, University of Nottingham, UK

2011 - 2013 **MSc Applied Computing**, Technological Federal University of Paraná, Brazil

2000 - 2006 **BSc Mathematics**, Federal University of Paraná, Brazil