Ignacio Cordón

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◔ Experience

Software Engineer, Language Analysis Team source{d} Jul 2019 – Present
Worked on Babelfish, a containerized parsing server to get Abstract Syntax Trees from Madrid, Spain
source code files. Babelfish also supports normalization of trees across different languages.

> Optimized memory consumption of client libraries (Python and Scala) by debugging and fixing FFI layer memory leaks in C++.
> Improved algorithmic performance of the FFI layer using caching in clients and redesigned critical parts of the external API.
> Reduced level of privileges in Babelfish daemon (Go) by adding support for rootless docker containers.
> Leveraged knowledge in Python FFI using CPython, Java FFI using JNI, docker, Travis CI, object-oriented programming and gRPC.

Software Engineer, Bioinformatics Era7 Bioinformatics Jun 2018 – Jun 2019
Designed and implemented a web system to analyze and classify lab bacteria samples. Granada, Spain

> Produced, from scratch, performant libraries in Scala to work with trees, low-level operations with bits, S3 requests ensuring integrity, parsing of files, preprocessing of databases and web authentication.
> Front-end and back-end systems for the web application in charge of analyzing bacteria samples.
> Leveraged knowledge in AWS (mainly EC2 + S3 services), PostgreSQL, web development with Scala Play (back-end) and Elm (front-end), REST, unit testing, Test Driven Development, JVM and functional programming.

Undergraduate Machine Learning Researcher University of Granada Sep 2017 – Jun 2018
Development of data preprocessing packages in R. Granada, Spain

Internship in Business Intelligence Axesor Oct 2015 – Apr 2016
Data analysis with R and SQL. ETL design tasks. Granada, Spain

🎓 Education

Master's Degree in Physics and Mathematics **University of Granada, Spain** 2017 – 2019
Bachelor's Degree in Computer Science **University of Granada, Spain** 2012 – 2017
Bachelor's Degree in Mathematics **University of Granada, Spain** 2012 – 2017

⚗ Projects

imbalance 🗎 KNOSYS, Vol 161, 12/2018, Pages 329-341 ⌂ ncordon/imbalance
Open-source R package to address the machine learning problem of imbalanced binary classification.

> Implemented (in R and C++) a collection of math-based algorithms from carefully chosen scientific papers.

markovchain ⌂ spedygiorgio/markovchain
Most used package for Markov chains in R. Contributions here are part of my graduate thesis.

> Open-source contributions aimed at reshaping the probabilistic analysis methods for Markov chain analysis. Improved the performance of most of the native methods in C++ from quadratic to linear efficiency, by researching and using better-suited data structures and algorithms (e.g. Tarjan's algorithm or power of matrices based on binary search splits).

⚙ Skills

Software: C++, Scala, R, Go, SQL, Python, Git, Linux, AWS, Elm.
Competitive programming: Google Hash Code 2016, 2017, 2018 and 2019, CodeJam 2019, Tuenti Challenge 2019, regular competitions on LeetCode and Hackerrank.
Languages: Spanish (mother tongue), English (Cambridge C1).