Oscar Forner Martinez

I am a software engineer who likes challenges when I am working in a project, I really enjoy applying advanced algorithms and data structures to solve problems in an efficient and elegant way.

Education

2010-2013 **Bachelor of Engineering in Computer Science**; Universitat Jaume I (Spain)

Degree Thesis: Analysis of authentication radiofrequency systems and RFID. Mark gained: 95%

Advanced Data Structures, Compilers and Interpreters and Distributed Systems

2006-2010 **Associate Degree in Computer Science**; Universitat Jaume I (Spain)

Degree Thesis: Secure platform for advanced electronic signature. Mark gained: 92%

Operating Systems,Real Time Operating Systems and Embedded Systems

Experience

2015-Present **Software Developer at Programming Research**

I have been working in a couple of projects during my time at Programming Research.

-Static analysis of code: Checks if the code has some patterns that have an *undefined behaviour*, *unspecified in the Standard*, and/or *implementation-defined*.

-Dataflow analysis of code: Checks the complexity of methods, pointer problems, memory handeling, etc.

2013-2015 **Software Engineer at European Bioinformatics Institute**

One of my duties was to create a RESTful service to allow users to query our database to find information about multiprotein complexes.

In addition, I developed an algorithm to cluster biological information from different kinds of proteins.

Courses

March 2016 **LFD320: Linux Kernel Internals and Debugging**; Linux Foundation

August 2015 **Agile for developers**; Accelebrate

November 2014 **Algorithms, Part II**; Coursera, Prinston University

September 2014 **Algorithms, Part I**; Coursera, Prinston University

Technical Experience

Open Source — All my personal development is done using and for Open Source. All my colaboration with Open Source projects can be found in my **GitHub** account.

Manjaro Linux — I colaborate with the development of the Manjaro Linux distribution. I took part in the development of the hardware detector to allow the user to install the right drivers.

Prefix Tree — I created a project to compare the performance in different *Prefix Tree* such as ***Trie***, ***Ternary Search Tree*** and ***Radix Tree***. I used several cutting edge technologies like: C++11, Google Test (for unit test) and **Conan** (for dependencies manager).

Linux Kernel — I have been studying the Linux Kernel from the beginning of 2015. First, I read books such as "*Understanding Linux Kernel*" and "*Linux Decide Drivers*". Nowadays, I am taking the **Eudyptula Challenge**.

Personal blog — I have a personal blog where I write about different topics I think people can be interested in. Usually, it is about new technologies and how to use them or tricks and tips I found out resourceful or important.

Programming Languages

C++: I have been using C++ for several years in different projects and technologies. For multithreaded applications I used ***Pthreads*** and ***OpenMP***, I had some experience with ***MPI*** for distributed systems. ***C++11/14*** to explore the new features included. ***Boost*** to have access to the *filesystem*, *networking*, *smart pointers* and *testing/mocking*. ***Google Test*** to use it as a unit test framework without big dependencies. ***Conan*** as a dependency manager. ***CMake*** to build projects. ***GDB*** for debugging applications. ***Valgrind/Perf*** to measure performace and find bottlenecks.

C: I used C for low level programming, such as ***Linux Kernel Drivers*** for Real Time Operating Systems **RTAI** and to create a new scheduler using the **Rate-Monotonic** algorithm. Moreover, I used C in ***Embedded Systems*** to create applications to control industrial systems using ***Syscalls***.

ARM: I am learning the ***ARM assembly*** for ARMv8. For that I am using a BeagleBone Black to play with it. Moreover, I started the project **ARM C Compiler (ACC)** to learn properly all the aspects of the architecture.

Good knowledge of: ***Python*** and ***Bash*** with scripting purposes.

Languages

Spanish — Native

English — Working knowledge

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