Giuseppe Pes

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Key skills:

- Programming languages : **C, C++, Java, Python, PHP, Prolog, Assembler(x86).**
- Web : **HTM 5, JavaScript, CSS.**
- Web technologies : **Backbone.js, Node.js, jQuery, Jetty, Bootstrap**.
- Database : **Hadoop, MySQL**, **PostgreSQL, CouchDB**
- Database Language : **Pig, Sql.**
- Operating System : **Linux, Windows, FreeBSD**
- Knowledge Italian (First language), English (Excellent) and French (Basic).

Education & qualification

2012-2013 **Imperial College London** result achieved **Distinction**
MSc Computer Science specialism in **Software Engineering**
Main topics : Software engineering for industries, systems verification, performance analysis, advanced computer architecture, advanced database, advanced object oriented programming, machine learning.
Final year project: I designed a multi-variant execution system which runs two slightly different instances of an application and synchronises their execution at the system call level. Divergences in the behaviour of the variants are considered a possible attack and correctly handled. The prototype has been successfully used to identify and prevent attacks based on buffer overflows on real applications like *Lighttpd* and *Apache*. The project lasted for 3 months and was developed in C and a small part in assembly. Relevant technology used *seccomp-BPF*.
Research project: I analysed different technologies for implementing system call interceptor for sandboxing purposes in Linux, such as *ptrace*, *utrace*, *seccomp*, kernel enhancements and binary rewriting technologies. In addition, I had the opportunity to study in details *seccompsandbox* and *minijail* the sandboxes used by Chrome**,** and to develop my own solution using *ptrace* and *secomp-BPF*.
Other projects:
- *Group Project*: developed the web front end for a Mobile Healthcare Delivery placation. Technologies used javaScript jQuery, backbone.js, QUnit.

2007-2011 **University of Pisa**
BSc Computer Engineering result achieved **110/110 (First class)**
Main topics: Software engineering, computer architecture, CPU design, objects oriented programming, database, operating system, management.
Final year project: I designed a file system compatible with FAT32 for a kernel developed by computer engineering department. It was an individual project that lasted for 4 month during my last year, principally developed in C and Assembler (x86). Its outcome was a complete system call interface (UNIX compatible) which could be used to manage the files in the hard disk.
Other projects:
- *JavaMM*: developed a compiler for a language which was a subset of java
- *HttpExchange*: designed a protocol based on HTTP for a real time data exchange between two clients.

2002-2007 **A. Pacinotti high school Cagliari**
A levels: mathematics (A), physics (A), chemistry/biology (A)

Professional experience:

2013   **Java developer: 2 months full time placement, IBM, Dublin (current position)**
Working principally on an Enterprise Java application.

2012   **Web developer: 4 months full time placement, Phosphorix, Oxford.**
I mainly worked using *Phonegap* technology to develop a mobile app.

2012 Freelance web developer, developed the following websites:
- http://www.saimasl.com
- http://tekcapital.com

Interests and responsibilities:

Linux   : Take part in *Gentoo* community online (write and fix package builds).
Voluntary work : Sales assistant, two months, Oxfam, Oxford.
Swimming   : Member of university swimming club.
Reading   : Especially Italian literature.

Details available on request.