

## Areas of specialization

Software development, computer architecture, microelectronic circuits design and verification, signal processing methods and algorithms, network analysis and design.

## Experience

2012–present Freelance worker.

- Design and development of a web-scale media sharing web service.  
*Technologies:* Python, Django, MongoDB, Mercurial/Kiln, FogBugz.

2011–2013 LEAD DEVELOPER, [ITEISA Desarrollo y Sistemas, S.L.](#), Santander, Spain.  
General tasks:

- Management of the software development process and code life cycle, from requirements analysis and specification to deployment and maintenance.
- Level 3 technical support, performing tasks regarding performance and security code audits, performance optimizations at both model and controller layers, software installation, upgrading and configuration and end-user training.
- Implementation of the ISO/IEC 15504 standard; preparation of the documentation regarding the software development process and the testing methodologies, and implementation of unit, integration and system testing methodologies.
- Streamlining of the company software development process, migrating to a version control system, a issue tracking platform and an automated configuration and deployment system.  
*Technologies:* Git, GitLab, JIRA, Puppet.

Specific projects:

- Design and development of a search engine on top of the whole body of parliamentary acts of the Spanish Congress; performance and accuracy testing and tuning using custom-tailored shell-scripts.  
*Technologies:* Apache Solr, Kyoto Cabinet, OpenNLP, OpenCalais, Perl.
- Design and development of a window configuration system, to be integrated into a window manufacturer website.  
*Technologies:* JavaScript, Processing.js, jQuery, CakePHP, MySQL.
- Design, development and deployment of a real-time rendering system for a shoe-customization web application; strong focus on integration, performance and system testing.  
*Technologies:* CakePHP, Imagick, MySQL, FastCGI, POV-Ray, Autodesk Maya, ZeroMQ.

- Design and development of a scraper to extract the gas price for all gas stations in Spain from the official database; development of a user-friendly web and mobile app with the resulting data, together with custom algorithms to improve search results based on user's history and localization.  
*Technologies:* Python, Requests, SQLAlchemy, MySQL, CakePHP, HTML5, jQuery Mobile, PhoneGap.

2011 HW/SW ENGINEER, [TEDESYS Global, S.L.](#), Santander, Spain.

- Design and implementation of a stereo vision system; adapting current OpenCV algorithms for implementation in a FPGA system.  
*Technologies:* C/C++, VHDL, OpenCV, dc1394, Boost.

2008,2009 Summer grant, [Magnetoplasmonics group](#), Madrid Microelectronics Institute (IMM – CSIC), Madrid, Spain.

- Debugging, improving and extending a scattering-matrix based numerical code, to be executed in a multi-processor system.  
*Technologies:* C/C++, BLAS, Lapack.

## Education

2005–2010 MSc in Telecommunications Engineering, Universidad de Cantabria; speciality on microelectronics.

### MICROELECTRONICS SPECIALIZATION

Design and verification of digital integrated circuits.

Design of full-custom analog integrated circuits.

Embedded systems design, especially systems on chip (SoC). Development of task-specific hardware accelerators in VHDL.

### SPECIFIC EDUCATION

2013 *M101P MongoDB for Developers*, online course organized by 10gen Education.

2011 *CAP Theorem, PACELC and Determinism*, webinar organized by VoltDB.

2011 *Big Data Online Summit*, webinar organized by VoltDB.

2010 *OpenCL Programming Webinar Series*, online course organized by AMD.

## Languages

SPANISH, native speaker.

ENGLISH, fluent. Technical assessment in juridic and technical translations.

## IT Skills

### PROGRAMMING LANGUAGES

Proficiency in C/C++, Python and PHP.

Good knowledge of JavaScript, Ada, VisualLISP, MIPS assembler and UNIX shell scripting.

Working knowledge of Perl, Ruby and Java.

## OPERATING SYSTEM ADMINISTRATION

Windows, Linux (SuSE, Debian, Ubuntu, Fedora, RedHat/CentOS), \*BSD (OpenBSD, FreeBSD).

## WEB DEVELOPMENT

FRONTEND: HTML<sub>5</sub> & CSS<sub>3</sub>, JavaScript, jQuery & jQuery Mobile, PhoneGap, Processing.js, Raphaël.

BACKEND: MVC frameworks based on PHP (CakePHP) and Python (Django, Flask, Grok, Tornado).

## DATABASE MANAGEMENT SYSTEMS

RELATIONAL DATABASES: MySQL, PostgreSQL.

NOSQL DATABASES: MongoDB, Redis, Kyoto Cabinet.

SEARCH ENGINES: Apache Solr.

## VERSION CONTROL SYSTEMS

CENTRALIZED: Subversion.

DISTRIBUTED: Mercurial, Git.