

# Juan Pedro Bolívar Puente

Software Engineer

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Born the April 5th, 1988



## Education

- 2006–2011 **Ingeniero Informático, ETSIT, University of Granada, Granada, Spain.**  
Master's level 5 years degree in Computer Science and Software Engineering with 300 ECTS credits.  
Passed with Honours the final master's thesis. *See Publications*  
ECTS/GPA grading: A
- 2009–2010 **Erasmus Exchange, Åbo Akademi, Turku, Finlandia.**  
Erasmus exchange during the fourth year of the degree
- 2004–2006 **Bachillerato, specialised in technology, I.E.S. La Rábida, Huelva, Spain.**  
Passed with Honours, awarded with a special scholarship.

## Other qualifications

- 2006 **Ciclo superior de Inglés en la Escuela Oficial de Idiomas, Huelva, Spain.**  
Higher degree in English in the Official Languages School
- 2005 **Course in the Advanced Administration of GNU/Linux Systems, University of Huelva.**  
Passed with Honours
- 2004 **Certificate in Advance English, University of Cambridge.**
- 2003 **First Certificate in English, University of Cambridge.**

## Languages

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|---------|----------------------|--|
| Spanish | <b>Mother tongue</b> |  |
| English | <b>High</b>          | Fluent reading, writting and conversation. One month English courses in London and Toronto. Three weeks stay in Edinburgh. One year Erasmus exchange in Finland, taking most courses in English. |
| French  | <b>Basic</b>         | Elementary studies during High School  |
| Swedish | <b>Basic</b>         | EILC one month course in Åbo Akademi.  |

## Awards and recognitions

- 2008 **Honour distinction of the School of Software Engineering, For his contribution to the external image of the School of Software Engineeing and Telecomunications of the University of Granada.**
- 2008 **First prize, Comunidad Morfeo, Spanish Libre Software Contest for University Students.**  
Spanish level contest, awarded for the Psychosynth project: <http://www.psychosynth.com>
- 2006 **Gold medal, Iberoamerican Contest in Informatics.**
- 2006 **First place, Spanish Olympiad in Informatics.**
- 2006 **Bronze medal, Spanish Olympiad in Mathematics, national stage.**
- 2006 **First place, Spanish Olympiad in Mathematics, local stage, Huelva.**

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## Professional experience

- 2011-now **Software Engineer**, Ableton AG.  
#c++ #python #design #audio #midi #ableton  
Ableton develops Ableton Live, a leading Digital Audio Workstation with millions of users. This position's goal is to improve the experience with hardware controllers. It involves from design of user interaction to development of key parts of the application in C++ and Python.
- 2011 **Intensive course in advanced Python**, Instituto de Astrofísica de Andalucía.  
#python #teaching #oop #fp #meta #gtk #django #numpy #pyfits #pylint #ctypes  
Teacher of a 25 hours course for astrophysics researches and software developers working at the Instituto de Astrofísica de Andalucía. The course contents included object-oriented and functional programming, advanced topics and meta-programming, interfacing with C, testing automation and quality control, graphical interfaces with GTK and Glade, web systems with Django. More information and course materials: <http://www.sinusoid.es/python-avanzado>
- 2010-2011 **Collaboration internship (Beca de colaboración)**, Department of Computer Science and Artificial Intelligence, University of Granada.  
#php #moodle #web #teaching #adt #university  
Collaborator on the teaching of the course "Methodology of Computer Programming" held in the first year of the Software Engineering Graduate. Moodle developments started in the previous internship were continued too.
- 2009 **Internship in a Teaching Innovation Project (Proyecto de Innovación Docente)**, *Computer Vision Group*, Department of Computer Science and Artificial Intelligence, University of Granada.  
#php #javascript #moodle #web #teaching #vizcosh #jsxal #findti #university  
Main developer of several *Moodle* modules and plug-ins that adapted it to the specific needs of our university. Its results were published as Free Software (<http://www.nongnu.org/cvg-moodle>) and presented in the FINDTI'09 congress (see *publications*).

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## Unpaid works

- 2008-2010 **Indie game developer**.  
#c++ #python #games #opengl #sdl #panda3d #pysfml  
Development of several independent and Libre Software games, like *Overdose* (<http://www.sinusoid.es/raskolnikov/overdose-0.1.1.tar.gz>) and *Pigeoncide* (<https://savannah.nongnu.org/projects/pigeoncide/>). Also, during this period we developed the *Code of Greed* game under the supervision of the Finnish company TribeFlame, a Risk implementation with an innovative UI targeted at touchable devices: <https://savannah.nongnu.org/projects/jagsat/>.
- 2007-2008 **Systems administrator**, *Department of Applied Physics, Universidad of Huelva*.  
#gnu #linux #mm5 #wrf #flexpart #physics #fortran #university  
Installation and administration of GNU/Linux systems, Fortran development environments and the meteorological prediction models MM5 and WRF, and the particle dispersion model FlexPart.
- 2007-? **Maintainer of the GNU Psychosynth project**, <http://www.psychosynth.com>.  
#c++ #meta #boost #ogre3d #audio #gnu #university  
Design, development and management of a Libre Software framework for modular, interactive and collaborative sound synthesis and live music performance.
- 2007-? **GNU PDF project contributor**, <http://www.gnupdf.org>.  
#c #pdf #lzw #predictor #gnu  
Implementation of the bidirectional *predictor* filters (awarded for that in an informal contest organised during the GNU Hackers Meeting held in Ourense in 2007) and the compression and decompression of LZW. Defined the binary compatibility policy and made several fixes and patches.
- 2004-? **Maintainer of the GNU Jump project**, <http://gnujump.es.gnu.org>.  
#c #sdl #opengl #game #gnu  
Addictive arcade game developed during High School on top of the code of the previous yet never finished Luciferino project (<http://luciferino.sf.net>).

## Skills

Example source code can be found in this **online portfolio**:  
<http://www.sinusoid.es/do.html>

### Programming

<b>C y C++</b>	Expert level in C y C++ with more than 7 years experience. C++11 standard, template metaprogramming, concept based design, Boost.	<b>Java</b>	Advanced level, experience in the development of <b>Servlets</b> with JDBC, DAO, XML, and user interfaces with SWT.
<b>Python</b>	Advanced level, experience with GTK, Glade, Django, ctypes, Numpy, Matplotlib. Game development, scientific programming.	<b>Functional</b>	Average-advanced level in <b>Haskell</b> , users interfaces with GTK, parsers with Parsec, AI development. Basic-middle level with Lisp, ML, Oz and Prolog.
<b>PHP</b>	Average level, development of Moodle plugins.	<b>Bash y Tcsh</b>	Average level at scripting.
<b>Assembler</b>	Average level of 386 programming under GNU/Linux and MS-Dos.	<b>Others</b>	Basic level in Pascal, C#, Smalltalk, Basic ...

### Areas

<b>Graphics</b>	Development of 2D and 3D <b>games</b> and <b>multimedia</b> software with <b>SDL</b> , <b>OpenGL</b> , Ogre, CEGUI, OIS, PySFML, Panda3D	<b>Audio</b>	Development of <b>audio</b> software and <b>synthesisers</b> with Alsa, Jack y Oss, working with Midi, OSC, LADSPA y DSSI.
<b>Web systems</b>	Web systems with PHP, Python and Django. REST interfaces	<b>AI</b>	<i>Flocking</i> algorithms, game AI. Some neural network and image processing.
<b>Lanuages</b>	Special interest for computer languages and paradigms, both at practical level, in their implementation and their praxis — <b>design patterns</b> , metaprogramming, etc. Basic experience in the development of compilers, usage of Lex and Parsec.	<b>Libre Software</b>	Strong advocacy for Libre Software. Maintainer of several GNU packages, knowledge of the inner dynamics of the Free Software community and experience in distributed development.

### Systems

<b>GNU/Linux</b>	Long-term experience with <b>Libre Software</b> and GNU/Linux in particular. Mostly Debian based distributions but also Slackware, Red Hat, Mandriva, Ubuntu and some other smaller distros. Cluster configuration with NIS and NFS, remote SSH admin. Basic kernel module development (OSS character device).
<b>Windows</b>	Average level administration. Windows Server 2003. Usage of Samba for GNU/Linux and Windows cooperation.
<b>Data bases</b>	Average level of MySql and also some Oracle and PostgreSQL.
<b>Physic simulations</b>	Administration of meteorological prediction systems MM5 y WRF y and particle dispersion simulation Flexpart. Event driven simulation development.

### Others

<b>IDE</b>	Daily <b>GNU Emacs</b> user. Experience with Eclipse, KDevelop, Anjuta, DevCpp.	<b>VCS</b>	Revision control with CVS, SVN, GIT and <b>Bazaar</b> .
<b>Web Design</b>	Average level in Xhtml and CSS.	<b>CMS</b>	Experience with the installation and administration of Drupal, Joomla, Wordpress and Dokuwiki.
<b>Graphic Design</b>	Average level with The Gimp e Inkscape, specially for posters and flyers. Skilled for drawing and oil painting.	<b>Composition</b>	Average-advanced usage of $\text{\LaTeX}$ for documents and Scribus for fanzines and posters.

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## Publications

- 2009 **GNU Psychosynth: A framework for modular, interactive and collaborative sound synthesis and live music performance**, *Juan Pedro Bolivar Puente*, Final degree project, Granada, España.  
Available on-line: <http://www.psychosynth.com/misc/pfc.pdf>
- 2009 **Desarrollos sobre Moodle para la docencia de la informática**, *Juan Pedro Bolivar Puente, J. Fdez-Valdivia, J. Martinez-Baena, A. Blanco, J. A. Garcia, A. Garrido y R. Rodriguez-Sanchez*, Congreso Fomento e Innovación con Nuevas Tecnologías en la Docencia de la Ingeniería, Vigo, España.  
ISBN: 978-84-8158-463-9
- 2008 **GNU Psychosynth: Un sintetizador de audio por Software Libre**, *Juan Pedro Bolívar Puente*, Revista Novática, 195.  
ISSN: 0211-2124

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## Conferences, talks and workshops

- 2010 **Desarrollo rápido de videojuegos con el panda y la pitón**, *Hackea y Lucha II, Hacklab Granada*, ETSIIT, Granada, España.
- 2009 **Desarrollos sobre Moodle para la docencia de la informática**, *Juan Pedro Bolivar Puente*, Congreso Fomento e Innovación con Nuevas Tecnologías en la Docencia de la Ingeniería, Vigo, España.
- 2009, 2010 **Introducción al Software Libre**, *I y III Jornadas Contra el Pensamiento Único*, Facultad de Ciencias Políticas y Sociología, Granada, España.
- 2009 **Ingeniería del software en el software libre**, ETSIIT, Granada, España.
- 2008 **ANSI C Modular: Compatibilidad binaria, polimorfismo y sistemas de plugins en C**, *Hackea y Lucha I, Presentación del Hacklab Granada*, ETSIIT, Granada, España.
- 2008 **GNU Psychosynth**, *Open Source World Conference*, Málaga, España.
- 2008 **GNU Psychosynth**, *Hackinvisible*, Málaga, España.
- 2008 **GNU Psychosynth y su interior**, *Ciclo de Conferencias de Software Libre*, ETSIIT, Granada, España.
- 2008 **Concurso Universitario de Software Libre**, *Ciclo de Conferencias de Software Libre*, ETSIIT, Granada, España.
- 2008 **Psychosynth project**, *GNU Hackers Meeting*, Bristol, Inglaterra.
- 2008 **Proyecto Psychosynth**, *Escuela de Música Artquimia*, Málaga, España.
- 2008 **Proyecto Psychosynth**, *Jornadas Comunidad Morfeo*, Granada, España.
- 2008 **Showcase proyecto Psychosynth**, *Festival Territorios*, Sevilla, España.
- 2008 **Proyecto Psychosynth** Concurso Universitario de Software Libre, Sevilla, España.