

ALEX S. QUEIROZ E SILVA

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Profile

I am a very experienced software developer who has worked on platforms ranging from mobile phones and embedded devices to critical systems such as air traffic control software. I have worked alone, in small teams and in big teams where I exercised technical leadership roles. A curious, eager learner, I am always trying to achieve the deepest level of knowledge in every project I participate, while writing the most elegant, simple and general code. I have even written my own compiler and virtual machine as a hobby, so as to better understand the process of creating working software. But I also know a product is only worth something if it ships, and this can never be forgotten.

Skills

- **C++:** Ten years of experience designing and developing C++ desktop and server applications, on Linux, Windows, AIX, IRIX and Solaris.
- **C:** Eight years of experience designing and developing mostly embedded and mobile applications.
- **Objective-C:** Three years, already designed and deployed some iOS applications to the Apple App Store.
- **Lua:** Eight years embedding the Lua interpreter in desktop C/C++ applications, besides developing extension code in Lua itself.
- **Scheme:** Four years of experience, designing and developing tools and web applications. Started development of own [Scheme compiler and virtual machine](#).
- **Linux:** Linux user for eleven years and Linux developer for ten years. The distributions I am familiar with are Slackware, Red Hat, Debian and Ubuntu. Some kernel knowledge. Able to create Debian/Ubuntu software packages.
- **Computer Graphics:** Five years of experience designing and developing computer graphics applications, including physical simulations, ray tracers, solid modellers, computational geometry applications etc.
- **Languages:** Fluent in English and Portuguese.

Experience

- **My Free Communities**—São Paulo, SP, Brazil
Senior Software Engineer: 2010–present
 - Designing and writing financial applications for the Apple’s iOS mobile operating system, using iOS core technologies such as CoreData and CoreGraphics.
- **App Store**—São Paulo, SP, Brazil
Sole Designer and Developer: 2009–present
 - Designed and deployed the [Reverso iOS game](#) to the Apple App Store, including the graphical user interface and the strong artificial intelligence.
- **Atech Critical Systems**—São Paulo, SP, Brazil
Senior Software Engineer: 2009–2010
 - I was part of the team that develops the air traffic control systems used by the Brazilian civil and military aviation, and by other countries as well, such as Venezuela. The system is written in C and run on Solaris. I worked on several modules of the system, like flight plan control, radar visualisation etc.

- **LG Electronics**—São Paulo, SP, Brazil
Senior Software Engineer: 2008–2009
 - Adaptation of LGE mobile phone software for all Latin America countries. Fixing bugs on the same code base. Doing basic mobile phone testing.
- **Atlântico Institute**—Fortaleza, CE, Brazil
Senior Software Engineer: 2005–2007
 - Wrote ANSI C library for communication and C++ GUI code using Qt for applications for the synchronisation of personal data and files between mobile phones and desktop computers. Worked in the small team that created the overall and detailed design of the solution.
 - Designed most components of a WAP browser for a large mobile phone manufacturer. The code base was all ANSI C. Wrote the XML parsing code, as well as fixed bugs and helped the coding of several other modules. Wrote custom tools in Lua, with a web front-end that included a wiki, for unit testing and the continuous integration of the code base.
 - Designed and coded algorithms for the detection of movement based on mobile phone cameras, including filtering out noise from the computer vision algorithms and user's lack of precise movement. The calculated movement of the mobile phone was used mostly for gaming. Wrote a tool in Haskell for the unit testing of the code, and updated the continuous integration tool in Lua for this new project.
- **Fujitec DWA Technology Ltda.**—Fortaleza, CE, Brazil
Software Engineer: 2003–2005
 - Wrote advanced behaviour and communication code in a complete automation embedded solution for motels, based on the Microchip's PIC micro controller. The hardware and the software were custom made for the client's requirements. The final product controlled sets of lights (scenes), TV and air conditioners (via IR) and sound, and was used via a remote control.
 - Wrote embedded code in C for high-level behaviour and smart card and FLASH interfacing in applications for public transportation systems. The hardware and software developed were deployed in large Brazilian cities such as Fortaleza, with as many as two million inhabitants, almost all users of the system. A prototype was also made for the city of Honolulu, USA, that used wireless 802.11 for communication with the back-end.

Education

- **Federal University of Ceará**—Fortaleza, CE, Brazil
BSc. Computer Science: 1997–2000
 - Research in the field of Computational Fluid Modelling. Several prototypes were built with Python and its VTK module for 3D modelling.
 - Designed and developed an application in C++ for the physical simulation and graphical rendering of floods, to aid in the planning and construction of dams. The Fox toolkit were used for the GUI and OpenGL for the 3D graphics. The scene description and flood behaviour were scripted in Lua. The application ran in Linux, IRIX and Windows.
 - Research in the field of Computer Graphics, mostly on Computational Geometry, Terrain Rendering and Photo-realistic Rendering. Developed a [ray tracer scriptable in the Lua language](#). Developed several internal Computer Graphics applications using different UI toolkits: GTK+, QT, wxWidgets, FOX etc.