
GERTJAN ZWARTJES

About me

I chose software development to be my profession, because writing software has fascinated me since my early teenage years. Even before my dad bought his first 8086 machine when I was twelve years old, I have been playing with computers and started programming them too. Software development became one of my passions. I like practical – intellectually challenging work, with visible results, that needs creativity; solving a real problem, not just implementing a solution. My skills include:

Technical Software Development Skills

- Many years of C/C++ experience, including using C++ for multi-platform lithography modeling libraries, and for large, high performance EDA applications.
- Several years of experience using Python in many ways, as a glue language, to build development tools, as a prototyping tool, as well as to build a server side application service.
- Using Objective-C and UIKit to build a media center remote control app for the iPhone and iPad.
- Using Unix as main OS on a daily basis since 1998, currently in the disguises of Ubuntu, Gentoo, Arch Linux and Mac OS X, (g)vim being my editor of choice.
- Using Delphi for developing libraries for a market-driven and business-critical ERP application.
- Using Java to implement a multi-platform client-server board game.
- Using i386 Assembly to develop a music engine, and accompanying editor, for the Yamaha OPL2 (AdLib) chip.

General Software Engineering and Team Skills

- A significant number of years of hands-on experience in working in a team as lead developer. I enjoy building software with a team and delivering a polished product together.
- Several years of experience developing multi-platform software.
- Several years of experience co-developing software collaborating with remote teams in the San Francisco bay area.
- Applying software design, object oriented techniques and design patterns in large scale projects.
- Applying light-weight software processes and supporting tools, using test driven development approach.
- Experience in developing software development tools, such as automated build, test and release systems as well as a custom API documentation tool.

Professional Experience

2010 – present, Remote Control for XBMC (iPhone, iPad and iPod touch)

Personal project

- Solely designed and developed a remote control application for XBMC for Apple's iOS platform.
- Started as an iPad app because none of the existing iPad remotes at the time were fulfilling my requirements and I wanted to learn a new platform for a change.
- Added iPhone support re-using the back-end I wrote for iPad.
- Developed robust, multi-core asynchronous communication layer to connect to XBMC.
- Available for download in the App Store, continued development and maintenance.
- **Technologies:** Objective-C, iOS, UIKit, Core Data, JSON, Doxygen.

2008 – present, ASML, Veldhoven and Brion, Santa Clara, CA

Senior Software Designer, Manager

- Software developer and lead of a newly created team to enhance collaboration between Brion – situated in Santa Clara, CA, acquired by ASML – and ASML in Veldhoven, the Netherlands.
- Co-developed platform for re-implementing Matlab models into multi-platform (Linux/FreeBSD/SunOS) C++ libraries for use on high performance lithography simulation software, as well as on actual lithography machine. Re-engineered multiple lithography related models using the developed platform.
- Set up several Python based development tools, such as automated build, test and release systems. Whenever possible applied rigorous and automated unit and integration testing using CppUnit, Python's unittest module, following the test driven development principles.
- Prototyped and co-developed inter-platform and inter-machine computational lithography applications, mostly focusing on back-end server-side components.
- **Technologies:** C/C++, Unix (FreeBSD/Linux/SunOS), Python, wxPython, Sphinx, setuptools/pip, Java, SWIG, git, svn, hg, p4, MATLAB, Doxygen, Trac, SCons.

2007 – present, Code-muse.com

Personal blog

- A place for myself to write about software development, things to remember, and a place for publishing information about Remote Control for XBMC.
- **Technologies:** Wordpress, Pelican, SCSS.

2006 – 2008, Sagantec, Eindhoven

Teamleader Scanner & QA Manager

- Responsible for development and maintenance of design rule recognition in chip layout compaction software (EDA). Managing a team of a total of 5 software engineers, interacting with several other teams (including teams located in the US and Israel).
- Responsible for refactoring mixed C/C++ code into optimized, fully object oriented and independent C++ modules.
- Responsible for introducing parallelism and algorithmic changes to achieve performance improvements.
- Introduced coding style guide and advocated use of API documentation tooling.
- Responsible for and co-developed a graphical hashing algorithm and 2D pattern matching algorithms.

- Maintained connection with TU/e; supervised two software engineering projects with two different groups of 9 Computer Science (CS) students.
- **Technologies:** C/C++, Unix (FreeBSD/Linux (Red Hat)/SunOS), svn, Doxygen, Dokuwiki, GNU make.

2004 – 2006, Intersoft, Amsterdam/Eindhoven

Manager Research

- Managed a team of 5 software engineers, supervised both a CS internship and a CS graduation project.
- Responsible for delivering the tools and software components to improve the quality of an ERP product. Introduced test-driven development and an automated testing framework.
- Co-architected and co-developed – using Object Pascal – an O/RM and an expression evaluation library with user interface.
- **Technologies:** See 2001-2004.

2004 – 2008, Espresso, Pretoria, South-Africa

- Active member during my graduation project, associate member as of January 2005.

2001 – 2004, Intersoft, Amsterdam/Eindhoven

Software Engineer

- Started as part-time Junior Software Engineer, to work on research and development of components to stabilize and improve Intersoft's business software. Designed and developed Object Pascal encryption/decryption and compression/decompression libraries.
- Co-founded Intersoft Component Architects department to develop generic reusable (Delphi) components to use in business applications. Department renamed to Intersoft Research in 2004.
- Completed Master's Thesis “*An Agile Approach Supported by a Tool Environment for the Development of Components*” (with Joost van Geffen), which laid the groundwork for continuing Intersoft Component Architects as standalone research department for Intersoft.
- Introduced coding standards for Object Pascal and implemented accompanying API Documentation tool – including GUI front-end. Architected and implemented automated build and release system, using Perl and GNU make. Responsible for company-wide development infrastructure.
- Co-developed custom internationalization library for existing Delphi applications, that allowed Intersoft to enter foreign markets.
- **Technologies:** Object Pascal, Delphi, Windows, Cygwin, Linux (Gentoo), svn, LaTeX, MetaPost, custom API documentation tool, MediaWiki, Perl, GNU make.

2001 – 2005, KNDB

Freelance Software Engineer

- Co-developed – in a team of 3 – a multi-platform board game server. Started as a software engineering class project at TU/e. From the group of 9 students, two friends and I were selected to commercially continue developing the project.
- Architected and optimized custom client-server communications protocol, implemented using java.nio. Web interface implementation using FreeMarker templates and Java Servlets. Deployed on Gentoo Linux platform.
- **Technologies:** Java, FreeMarker, Tomcat, JSP, Linux (Gentoo), ant.

2000 – 2002

Freelance webdeveloper

- Developed several websites using PHP with a MySQL back-end, including a custom, small scale, content management system.
- **Technologies:** PHP, MySQL, Linux, Apache.

1997 – 1999, LinSoft (Computer Game Distributer), Wijchen

Helpdesk / software developer

- Independently developed several tools, such as a computer hardware detection program, to reduce the number of help desk calls. After deployment, number of calls dropped by approximately 50%.
- Developed interactive music game (aimed at age 5-7), with two friends (who did art and music), using 386 assembly. The game uses the music engine for the Yamaha OPL2 chip, which I wrote from 1994 – 1997.
- **Technologies:** x86 Assembler (TASM), AdLib/OPL2 signal processing chip programming, MS-DOS, Borland Brief Editor.

1994 – 1997, FM Tracker

Personal project

- Developed a Yamaha OPL2 based music tracker (a la demo-scene trackers, like ScreamTracker or FastTracker).
- This is the project that formed me; starting out using Pascal, moving from C to x86 Assembler code to squeeze out the last bit of performance I needed to pull the project off on a 486SX at 25MHz.
- Set up a layer of libraries with functionality for example for text graphics, dialogs, keyboard and mouse, and EMS memory.
- **Technologies:** x86 Assembler (TASM), AdLib/OPL2 signal processing chip programming, MS-DOS, Borland Brief Editor.

Education and Training

2011, 2012

Introduction to Artificial Intelligence, on-line Stanford class (ai-class.org), top 5% of the class
Udacity, Artificial Intelligence for Robotics, with highest distinction
Udacity, Design of Computer Programs, with highest distinction

2005

Private Training 'Basics of Competence Management'

1998 – 2005

Computer Science at Technische Universiteit Eindhoven (TU/e)

- Master of Science in Computer Science, *Cum Laude*, January 18, 2005
- Part of the graduation work I performed at the University of South-Africa
- Publication in SAIEE Special Issue on Software Engineering, 2005
- Co-organized Conference on Security with keynote from Philip Zimmermann, 2002
- Software Engineering Project Management, 2002
- Propedeutic Degree, 1999

1992 – 1998

VWO, Maaswaal College, Nijmegen / Wijchen

- Dutch, English, Mathematics, Physics, Macro Economics, Biology, Art

Additional Interests and Information

- I play squash, part of a team in regional league.
- I used to play drums in a band – I still occasionally dust off my kit or pick up one of my guitars.
- I don't mind traveling.

References

Available upon request.