

CV for Jan Pool

Particulars

Date of Birth: **31 October 1976**
Languages: **Afrikaans, English (Fluent)**
French (Beginner)
Gender: **Male**
Nationality: **Republic of South Africa**
Marital Status: **Divorced**
Drivers License: **Code B**
Passport: **Republic of South Africa**
Highest Qualification: **M.Sc.Eng (Electronic)**

Summary

I'm an electronic and software engineer with an affinity for innovation and entrepreneurship.

I have over 15 years of commercial product and system development experience in the mobile, human-computer interaction (HCI), optimisation, data visualisation, machine learning, crypto-currency, location based services, electronic design automation (EDA), signal processing, machine vision, process control and telecommunications industries.

I have fulfilled numerous leadership positions and work well within teams and on my own.

Since 2006 I have focused mostly on creating and growing technology companies, software product management (with a user and market driven perspective), lean and agile project management, user experience and software design, architecture, development and testing.

I enjoy performing creative tasks, such as building new things and photography. I'm a keen and fast learner and like tackling difficult problems where novel solutions are sought. I'm an avid reader. Typical subjects include startup methodologies, economics, software processes and management, innovation, product development, usability, visualisation, psychology, music, design, robotics, usability, fantasy, science fiction, history and all things science and technology.

I'm passionate about product development and working with energetic organisations that are lean, agile and focused on continuous feedback, learning and improvement.

I value honesty, integrity, dependability, professionalism, adaptability, capability, analytical thinking, creativity, learning and progress.

Experience

Oct. 2011 – Current, Actualiser (Pty) Ltd, Stellenbosch, South Africa

Owner - Independent Software & Electronic Engineer

<http://actualiser.co.za>

I offer services in the following domains:

- Product development
- Rapid product prototyping
- Product management
- Project management
- Software specification, architecture, development and testing. I've worked with a variety of languages and on many platforms, but currently focus on:
 - iPhone & iPad (iOS) application development;
 - Android application development;
 - Web application development; and
 - Java Client & Server development
- Technology research
- Technical risk mitigation
- Technical reviews and due diligences
- Agile & Lean software processes implementation and improvement
- Lean startup implementation
- Innovation management
- Training and mentoring
- Technical writing
- Technical patent drafting
- General technical problem solving

Primary clients/projects:

- RealityGate (Pty) Ltd - <http://realitygate.com/> (Since October 2011)
- Gust Pay (Pty) Ltd - <http://gustpay.com/> (Since April 2012)
- HealthQ/LifeQ - <http://www.healthq.co/>/<http://lifeq.com/> (Since June 2015)

For a longer list of previous projects see <http://actualiser.co.za/projects/>.

Aug. 2006 – October 2015, Cape Town Software Process Improvement, Cape Town, South Africa

Committee Member and Chair

<http://www.spin.org.za/>

The Cape Town Software Process Improvement Network (SPIN) gathers monthly to share their experiences in initiating and sustaining software process improvement programs. The SPIN concept was initiated by the Carnegie Mellon University's Software Engineering Institute (SEI), but each chapter operates independently.

My functions includes operational management, procuring speakers, attracting sponsors, maintaining the website and organising monthly meetings.

We have held a total of 115 monthly events.

Feb. 2007 – Sep. 2011, NioCAD (Pty) Ltd, Stellenbosch, South Africa

Program Manager & Chief Technology Officer

<http://www.niocad.co.za/>

NioCAD develops Electronic Design Automation (EDA) and Computer Aided Design (CAD) software for emerging technologies and has a strong focus on integration, automation and collaboration. NioCAD's first product, NioPulse, focuses on low temperature superconductive analogue and digital electronics.

The product has its roots from research at the university of Stellenbosch. The founders procured funding from the Innovation Fund to develop NioPulse. I joined as the program manager at the inception of the project. We build a R&D team that developed the product from scratch. In 2009 we procured additional funding from the IDC of South Africa. NioCAD (Pty) Ltd was formed to commercialise the product internationally.

My responsibilities at the company includes the following:

- Operational (member of the EXCO).
- Product management / Product Owner.
- Project management and overseeing the development team.
- Manage development processes.
- Strategy – technical, marketing and sales.
- Marketing - website, documentation, brochures, exhibits and workshops.
- Client liaison.
- Product architecture.
- Software development, especially IP protection frameworks, interfacing with EDA standards, graphical editors and maintaining legacy third party tools.
- Quality assurance.
- User experience.
- IT infrastructure.
- Accounting and office management during the project phase.

Jan. 2001 - Jan. 2007, Stone Three Signal Processing (Pty) Ltd, Somerset West, South Africa

Project Engineer and Engineering Project Manager

<http://www.stonethree.com/>

Stone Three is a specialised engineering and development company. The company focuses on projects and products that require specialised signal processing, pattern recognition and software development skills.

My involvement at the company included the following:

- Minority shareholder.
- Form part of the operational management team.
- Crafting the company's vision and strategy.
- Client liaison.
- Project management.
- Software development and processes.
- People development and growth through mentoring and coaching.

- Managing software licenses and drove the building of a technical library.

Project I have been involved with:

- Project manager, chief architect and lead developer for a discrete trouble shooting application in the process control industry. We managed the project using an agile development process (Scrum). The product was built using C++, MFC and various third party libraries. The product makes extensive use of visualisation, data mining and modelling (neural networks, principal component analysis, partial least squares and decision trees) techniques.
- Short research project in the suitability of using sound to determine if a crucible is faulty. The crucibles in question are used in an automated ore analysis laboratory. Faulty crucibles can leak, causing molten ore to be spilled on expensive equipment.
- Design and implemented a control system for an on-line (real-time) viscosity controller. The application controls a number of solenoid valves and sensors, acquire data, analyse the data and visually present the results to users on a remote system. Users can also remotely configure the system. The system was deployed on a National Instruments (NI) Compact FieldPoint PAC embedded controller, while NI's LabView graphical programming language was used to implement the application. Additionally, the controller was build into an IP66 panel with an LCD to provide feedback to operators on the plant floor.
- Short feasibility study for the construction of an on-line spectroscopy meter to analyse the chemical composition of samples.
- Ported a distributed image processing application, with a remote attachable GUI, from Linux to Windows. In the process a number of algorithmic optimisations were made with the aim of reducing the number of required processors. A GUI, using wxPython, was constructed to make configuration and execution of the system easier.
- Design and implemented an application that enables users to navigate and display video from a remote video archiving system designed by Stone Three. The application made extensive use of Qt and IOPlot.
- Manage, design and implemented an application that collects, stores, analyse and present data from various OPC sources in a plant. The application was later extended to monitor the performance of control loops. HTML reports were generated and emailed to users. A scheduler was implemented to generate reports for each shift, as well as daily and weekly summary reports. Reports are stored in a database for later retrieval or additional analysis. The Python interpreter was integrated into the application to allow users to extend the capabilities of the program.
- Part of a small team that designed and implemented an extensible distributed computing platform. Organisations are provided with the ability to utilise unused computer resources to solve parallelisable computing problems. The platform provided a web-based management interface, an SDK to help end-users implement their own distributed applications and back-end management tools. The system is built on Linux using the BOINC platform, PHP, Python and C++.
- Design and implemented a cross-platform (Linux and Windows) machine vision application that monitors flotation cells. The application extracts various parameters of the flotation process, such as bubble speed, direction in which bubbles move, size of bubbles, colour of bubbles, stability of froth and froth texture classification. The results are displayed on a GUI, logged locally and made available to the plant via OPC. The application also serves as a research platform for process engineers at UCT and Stone

Three.

- Part of a team that designed a product to detect fraud at cash registers. The project made use of machine vision and expert systems.
- Specified and designed a remote video monitor application.
- Architect and developed a pluggable data flow based machine vision framework. The aim of the framework is to make it easier to develop and test machine vision algorithms and applications. It also takes full advantage of multi-processor systems. The framework is used in a number of projects.
- Part of a larger research effort to investigate the use of various image processing techniques to enhance video surveillance in real-time. A flexible image processing framework was developed, along with a demonstration program.
- Part of a larger research effort to produce intelligent surveillance capabilities. This included image and pattern recognition to track people using stereo vision. A demonstration program was developed that displays a room in 3D (using OpenGL) with targets being tracked.
- Involved with the development of a cross-platform (Linux and Windows) machine vision library. The library is used to capture, distribute and process image and video data. The library is used as the base of many of the products.
- Involved with the development of an internally used cross-platform (Linux and Windows) C++ library that provides basic services such as threading, queues, messaging systems, file access, logging, etc. The library is used as the base of many of the products.
- Software asset protection. Developed two libraries to protect various software assets for internal and external products. One solution made use of hardware dongles, while the other uses the more familiar software licensing method. A number of cryptographic tools were used to construct the software solution.
- Created an internally used custom CD label generating tool using PostScript and Perl.
- Assisted in the automation of Stone Three's deliverable process.

1999-2000, University of Stellenbosch, Stellenbosch

- One of the Linux system administrators for the Digital Signal Processing (DSP) lab.
- Maintained website for the DSP lab.
- Holiday work: Speaker recognition experiments of speech transmitted over high frequency (HF) radio channels.

Other Experience

Other professional experience:

- External examiner for M.Sc.Eng candidates at the University of Stellenbosch.
- Maintaining several of domains and websites.
- Managed small business IT infrastructure, including networks, backups and computer systems.
- Small business accounting.
- Android and iOS mobile development.
- Co-developer for an online text-based multiplayer game called Kingdoms

during post-graduate years.

- Programming Atmel AVR range of embedded controllers.
- Rudimentary experience developing software for the Nokia S60 platform on Symbian OS.
- Developed SOAP interfaces using Python to extract custom reports from XPlanner.
- Robotics and Artificial Intelligence.

Education

1999-2001 University of Stellenbosch Stellenbosch

- M.Sc.Eng (Electronic)
- Thesis topic: “Robust Speaker Recognition”. Investigated various robust speaker recognition techniques. Focused mostly on feature extraction. Developed a noise reduction algorithm that employs higher order hidden Markov models.
- Specialised in software development, pattern recognition, signal processing and speech processing.
- Graduated *cum laude*.
- Programming in C++ (extensively), Perl, PHP and Matlab.
- HTML and CSS experience.
- Worked primarily on Redhat Linux systems.

1995-1998 University of Stellenbosch Stellenbosch

- B.Eng (Electric/Electronic)
- Programmed in Assembler, C, C++, Modula-2 and Matlab.
- Final year project: Real-time speaker recognition demonstrator.

1990-1994 Garies High School Garies

- English (HG, second language), Afrikaans (HG), Biology (HG), Mathematics (HG), Accounting (HG), Natural Science (HG).
- Prefect (School and Residence) and Deputy Head Boy.
- Programming using various BASIC variants. I wrote some small programs for the school and a cash register program for a take away shop.
- Regional chess champion.
- Sports: athletics, rugby, cricket and squash.

1983-1989 Gaffie Maree Primary School Alexander Bay

- Prefect and Deputy Head Boy.
- Programming in Atari LOGO.
- Sports: athletics, rugby, cricket and squash.

Interests

Small business management and strategy, lean start-up methodologies, agile and lean software processes and practices, software engineering, data analysis and visualisation, crypto-currencies, astronomy, robotics, artificial intelligence, genetic algorithms, game theory, reading, photography, aircraft, science and technology, mentoring, coaching and leadership.

Technologies

List of technologies I've used:

- Programming languages: Objective-C, Swift, Java, C, C++, Python,

JavaScript, LabView, Perl, Bash, Matlab/Octave, 80x86 Assembler, AVR Assembler, Modula-2, Oberon, Logo, Basic and PostScript (printer language). Played around with various Lisp dialects.

- Operating Systems: Mac OS X, Windows, Linux (Redhat/Fedora, Ubuntu, OpenSUSE), DOS, iOS and Android
- Web technologies: JavaScript, HTML, CSS, Wordpress and Django.
- Basic system administration in Mac OS X, Linux and Windows.
- Integrated development environments: XCode, Android Studio (IntelliJ), Eclipse, Visual Studio and XEmacs.
- Build tools: Gradle, Ant, Make, Autoconf, SCons.
- GUI frameworks: Apple Cocoa, Java SWING, Qt, MFC, FLTK and wxWindows/wxPython.
- Mobile Frameworks: iOS and Android.
- SQL Databases: MySQL, Microsoft SQL Server and SQLite.
- 3D graphics: OpenGL.
- Source control: Git, Mercurial, Subversion, CVS.
- Installation tools: Install4J, InstallShield, InnoSetup/ISTool.
- Low level networking in TCP/IP and UDP.
- COM/DCOM, ActiveX.
- Superconductive electronics.
- Electronic design automation.
- Computer aided design (CAD).
- Basic cryptography.
- Crypto-currencies, primarily Bitcoin.
- Lean product development.
- Agile software development and project management, specifically Scrum and Kanban.
- XPlanner, PivitolTracker, MantisBT, ZenDesk, OpenCollab, CruiseControl
- ZenDesk for user support.
- UML, Design Patterns, Test Driven Development and Refactoring.
- Unit testing using XUnit family of frameworks.
- Graphical testing using Squish.
- Typesetting using Tex/Latex.
- OPC – Communication protocol used in industrial plants and factories.
- National Instruments: LabView and Compact FieldPoint Programmable Automated Controller (PAC).
- BOINC distributed system platform.
- CSense – Rapid process trouble shooting tools.
- IOPlot and TChart ActiveX components, used for respectively real-time plotting and charts.
- Photoshop and GIMP graphics editors.
- OmniGraffle diagram editor.
- Lightroom, Aperture and Intensify.

- Google tools, Microsoft Office, Open Office and iWork office suites.
- MindNode and Freemind – Mind mapping tools.
- Mikrotik RouterOS.
- CLIPS expert system shell and library.