Curriculum Vitae

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Languages: English and German (C1)

Nationalites: Australian and Swiss

Software Development Employment History and Applied Skills

Company	Business Domain	Form of Employment	Dates	Languages[1]			Platforms				Technologies			
				C++	Java	C#	Linux/Unix	Windows	OS/X	Android	Networking	DB	Web	Cloud
CaSensitive GmbH	software	own firm	04/2015-current	●	●		●			●	●	●	●	●
FileWave	software	contract	04/2015 – 04/2016	●			●	●	●		●	●		●
UBS Investment Bank (FICC)	finance	contract	12/2009 – 11/2014	●	●	●	●	●			●	●	●	
UBS Investment Bank (Equities)	finance	contract	10/2003 – 3/2009	●		●	●	●			●	●	●	
PostFinance	finance	permanent	06/2002 – 09/2003		●		●	●				●		
Lucent Technologies	telecom	contract	10/2000 – 07/2001	●	●		●	●			●	●		
AIC Software	insurance	contract	08/1999 - 06/2000	●	●		●				●	●		
IBM GSA	web	contract	02/1999 – 06/1999	●	●		●				●		●	
Open Technology	telecom	contract	02/1998 – 07/1998	●			●				●			
Open Technology	telecom	contract	10/1996 – 11/1997	●			●				●			
Westpac	finance	permanent	12/1988 – 09/1996	●			●				●	●		

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1   Other languages including Python and R have been omitted due to limited space.

Skillset Summary

Software Design and Architecture

- Modular designs that lead to:
  - reusable yet extendable code
  - reduced future product delivery times
  - reduced maintenance and testing costs
  - isolation of 3rdparty product dependencies
  - increased code consistency
- UML for more complex designs and communicating them with management & co-workers.

C++

- Experience includes C++11 and C++14.
- Primary development platforms have been Linux and Solaris, but also worked on Windows & OS/X.
- Cross-platform development experience with Qt and ACE libraries.
- Former experience with Boost libraries.

Java

- J2SE and Android platforms (but not J2EE).
- Relevant experience with Java 6, 7 and 8.
- Considerable server and distrubuted system experience.
- Some Swing and JavaFX experience.

Multi-threaded Development

- All major system development has been multi-threaded.

Network Programming and Distributed Systems

- Lower level TCP/IP network programming in numerous languages.
- Experience with various middleware products including ZeroMQ, 29West, Tibco and Reuters products.
- Experience designing protocols.

Python

- Decent language knowledge (but don't classify myself as being a true expert, since it hasn't really been one of my primary develeopment languages).
- Module design experience.

Financial Markets

- Over 10 years' experience working on systems related to financial markets.

Web Technologies

- Reasonably good knowledge of fundamentals for web development, namely HTML, CSS, Javascript, JSON etc. (i.e. for someone that does not work fulltime on web development).
- Implemented light-weight HTTP[S] (server and client).
- Experience with some of the Google services for web and Android.

Cloud Services

- Developed tiered scalibility testing platform for testing system management software with 2,000 managed nodes.
- Experience with Docker features including Compose, Machine and Swarm.
- Basic AWS product knowledge (but not seriously applied).

Android

- Solely developed a small number of applications, varying in complexity.
- Write-up over one of the applications published and related server can be found at http://casensitive.ch/en/insights/kpToggle/

C#

- Not used since end of 2014, but formerly had desktop development expierence based on .Net 4.0, networking, Excel-DNA, WPF, Linq etc. Also had earlier experence with C# Forms.

Databases

- Experience with PostgreSQL, Sybase, Oracle, SQLite and Redis.

Statistical Systems

- Some experience with different statistical systems over the years, including Matlab/Octave, R and SAS many years ago.
- Most recent Matlab/Octave experience related to Machine Learning course.

Source Control Systems

- Experience with git, Subversion and ClearCase.

Technical Lead and Mentoring

- Performed the role of technical lead on a number of projects and have provided mentoring in some situations.

Role Summary

CaSensitive GmbH (04/2015 - current)

This is my own one-man development & consulting company. I worked for a year on-site for a customer, but also took some time to work on some of my own projects.

Own Projects

- Android apps (Java) using features such as database, HTTP, location, map, instance identification etc. including publishing of "kpToggle" and "kpPrettyPatterns" on Google Play Store (see http://casensitive.ch/en/insights/kpToggle/ for insights of app & server).
- C++ infrastructure libraries including configuration, logging, networking, HTTP, timers, event dispatching, light weight views, OAuth, also integrating OpenSSL and PostgreSQL libraries.
- Web application server, based on the infrastructure libraries.
- Cloud server deployment with Docker.
- Basic reverse proxy implementation, including support for TLS SNI.
- Couple of prototypes associated with local business or former colleagues.

Customer: FileWave

FileWave primarily develops systems management and mobile device management software. Development environment is cross-platform C++ with some additional Python/Django based products.

- Identify existing major limitations affecting scalability, which resulted in redesign & implementation of networking layer. Capacity of gateways increased by over 1000%.
- Design & implement VNC relaying (for remote desktop control) with a solution covering network address translation, security and interoperability.
- Integration of ZeroMQ middleware for some minor message flows.
- Application of Docker for building test system focused on scalability testing.

UBS Investment Bank: FX/FICC (12/2009 – 11/2014)

A rather mixed role working with Java and C++, with some work on a C# API and WPF GUI, along with a bit of Python.

- Major design role for a new market data engine supporting realtime and historical data for around 30,000 instruments. Server side was Java, with client APIs provided in C++, Java and C#. Modular design resulted in extremely high levels of re-use being achieved across the various server processes and the Java API.
- Main concepts included:
  - Subscription management based on business dependency models.
  - Task dispatching and update coalescing, so as to provide general data consistency.
  - Reusable infrastructure libraries that were also adopted by 4 other systems.
  - Process visibility including statistics and embedded web servers.
  - File feed framework in Java to handle migration of over 100 feeds from another system. Framework managed scheduling, data retrieval, thread dispatching, error recovery and result persistence and distribution over many interfaces, including SCP, email and HTTP.
- Reuters RFA subscription and publication (Market Feed and OMM/RDM).
- Develop automated regression test system with web front-end.
- Develop a number of desktop tools using Swing and later JavaFX, to assist in tasks such as

analysing data dependencies that affected data consistency for persistence and feeds, as well as comparing yield curves derived from different inputs.
- Develop grammar and parser for defining set and matcher expressions, that were then used to define subsets of market data to be persisted at scheduled market times.
- Manage technical aspects of initial release and develop scripts to handle over a dozen environments that were operated in different modes, including a rather complex configuration generator in Python to manage all these variations.
- Lead numerous technical interviews for other teams.

UBS Investment Bank: Equities (10/2003 – 03/2009)

In UBS's Equities IT department I was primarily developing performance critical systems with C++ on Linux.

- Develop new gateways to the Swiss exchanges for handling high capacity market making and strategy flows.
- Develop a server for managing quotes to a number of exchanges, based on market makers' contributions to internal Reuters services. The server implementation included flow control, cross detection and auto-hit functionality used for arbitrage, along with support for panic scenarios.
- Design an internal market for handling non-listed products, including limit minding features from various sources. I was also the technical lead for the implementation team consisting of 5 developers.
- Develop a series of bridges between quote engines and market gateways (or internal markets), handling quotes, market data and reference data.
- Develop a quoting GUI application in C# for manual testing and analysis.
- Abstraction of various libraries from systems I developed for reuse in other systems.

PostFinance (06/2002 – 09/2003)

PostFinance was primarily a Java development environment with servers running on Solaris and GUIs on Windows. The system was a payment processing system. By the time I joined the team, a lot of the system had already been developed but they had a number of problems with the initial design/implementation.

- Profiling and performance tuning of the main payment processing batch processes.
- Design and implement a new messaging framework, which roughly quadrupled the throughput, using fewer system resources.
- Swing UI tasks.
- Develop a small framework for automated test result comparison using R.

Lucent Technologies (10/2000 – 07/2001)

The division of Lucent Technologies I worked for maintained a telecommunication billing system, which had several large international providers as clients. The environment was C++ and Java on Solaris and Windows NT, with VisiBroker (CORBA).

- Design a scalable CORBA system, providing a new interface to the existing order management system.
- Develop meta-data infrastructure. This included writing a parser/generator in Perl to generate code to populate the meta model from the order management system's headers.
- Develop a scripting language and parser, supporting stateful interaction with CORBA servers. This allowed less technical staff to develop and run test cases.

- Infrastructure development.
- Advise on the redesign of other systems, primarily related to interprocess communication (namely sockets and CORBA) and multithreading.
- Hold a series of training sessions with a selected group of developers on multithreading and CORBA design.

AIC Software (08/1999 – 06/2000)

AIC Software was aiming to develop generic health insurance software for health insurance providers. The project was a three tier client/server architecture with the client code written in Java and the server code written in C++. The BEA WLE/M3 ORB was used for CORBA functionality and XA transaction management.

IBM Global Services Australia (02/1999 – 06/1999)

IBM GSA was managing the web server development for Australia's largest telecommunication provider including the development of applications which would be run within their retail outlets. They were using Netscape Enterprise Server (NES) running on Solaris, using Orbix as the primary ORB, along with VisiBroker, which was linked into NES.

Open Technology (10/1996 – 11/1997 and 02/1998 – 07/1998)

Open Technology was a developer of intelligent network software used by telecommunication providers and hardware manufacturers, which I had two contracts with. C++ was still evolving with the availability of STL but Java was also starting to get some interest. Here I really built the foundations of concepts related to multi-threaded event dispatching, along with network programming & distributed systems using TCP, UDP and CORBA.

Westpac Banking Corporation (12/1988 – 09/1996)

My first fulltime job was working in retail branches, before I got a break to get into IT. Development roles included C and C++, but before that, I also spent a few years as a network communications analyst, which not only provided a good background for networking fundamentals, but it also helped in developing good analytic skills.

Education History

- Not actually a course, but invested a serious amount of time studying algorithms in the first half of 2017.
- MOOCs/Coursera:
  - Machine Learning given by Andrew Ng from Stanford University (2016)
  - Pattern Oriented Software Architecture given by Doug Schmidt, inventor of ACE (2013)
- Language courses:
  - Schweizerdeutsch (2013)
  - German courses (2008-2012) passing Goethe Zertifikat C1 exam in 2010
- Bachelor of Science (completed 1998)
  - no specific major, rather a mixture of science, mathematics and computing
  - awards for 2nd year statistics and 3rd year computer science