

# Curriculum Vitae

## Personal Details

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## Profile

Java architect specializing in framework design, programming and modeling language tools, domain specific languages, UML modeling and systems engineering.

## Key Qualifications

- Sun Certified Enterprise Architect for Java Platform Enterprise Edition
- Sun Certified Programmer for the Java 2 Platform
- Expert knowledge of the Java programming language and execution environment
- Extensive experience designing and implementing domain specific languages in both Java and UML
- Twenty years experience in education and finance: Zürich University of Applied Sciences (ZHAW), Swiss Federal Institute of Technology (ETH), UBS, Credit Suisse, Zürich Cantonal Bank, Swisslife and SBB (Swiss Federal Railways)
- Bilingual: fluent in German and English
- Highly self-motivated, perform well under pressure, thrive on challenges, excel at finding creative and elegant solutions to difficult problems

## Accomplishments

- Started several open source projects as part of the Liquid Mind initiative<sup>1</sup>.
- Presentation<sup>2</sup> for Comerge ([www.comerge.net](http://www.comerge.net)) on Inflection (June 2016).
- Guest lecture for students of Thomas Keller at the School of Management and Law of the Zürich University of Applied Sciences entitled: “Requirements Engineering in Project ExpAct” (June 2015).
- Completed course<sup>3</sup> by the Zürich School of Management and Law (ZHAW) on Entrepreneurship and Business Creation (October 2013).
- Guest lecture for PhD students of Thomas Gross at the Laboratory for Software Technology, ETH, Zürich, entitled: “A Programming Model for Long-Running Business Processes” (October 2012).
- Talk for the Java User Group Switzerland (JUGS) entitled: “SUN Certifications: Experience Report” (August 2003)
- Talk for Java User Group Switzerland, entitled: “Experience report: Developing with VMware and Java” (September 2001)

## Online Resources

<sup>1</sup>The Inflection API. [www.youtube.com/watch?v=CFK4l2JBCVI](https://www.youtube.com/watch?v=CFK4l2JBCVI)

<sup>2</sup>An Object Oriented Business Process Engine for Java. [www.youtube.com/watch?v=S82a2b2FPBg](https://www.youtube.com/watch?v=S82a2b2FPBg)

<sup>3</sup>Liquid Mind landing page. [www.liquidmind.ch](http://www.liquidmind.ch)

<sup>4</sup>Liquid Mind on GitHub. [github.com/liquid-mind](https://github.com/liquid-mind)

<sup>5</sup>Example UML Architecture. [www.liquidmind.ch/doc/ripples.zip](http://www.liquidmind.ch/doc/ripples.zip)

Curriculum Vitae Full (this document). [www.liquidmind.ch/doc/johnbrush-cv-full.pdf](http://www.liquidmind.ch/doc/johnbrush-cv-full.pdf)

Curriculum Vitae Short. [www.liquidmind.ch/doc/johnbrush-cv-short.pdf](http://www.liquidmind.ch/doc/johnbrush-cv-short.pdf)

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<b>Open Source Projects</b>	<b>Lead Developer, Founder</b> Ripples ( <a href="https://github.com/liquid-mind/ripples">github.com/liquid-mind/ripples</a> )	September 2016 to present
Alternative to Java reflection that addresses some of its legacy issues while introducing a number of UML-inspired, higher-level concepts and allowing meta-data to be extracted from both binary and source code:		
	<ul style="list-style-type: none"> <li>• Elimination of redundancies due to historic developments, such as <code>java.lang.Method</code>'s <code>getReturnType()</code> and <code>getGenericReturnType()</code>.</li> <li>• Built-in support for JavaBean properties; these are now part of the alternative reflection model itself.</li> <li>• Support for associations including ideas such as aggregation, multiplicity, navigability, subsetting and redefinition.</li> <li>• Collections and maps are treated specially, allowing users to easily find out the type of the class at the opposing end of a given association.</li> <li>• Built-in dependency analysis between classes, packages, jar files, etc.</li> <li>• Ability to link classes lazily which allows, e.g., for classes with unresolvable dependencies to be loaded.</li> <li>• Notion of a classifier as a means of disambiguating the term “class”, which in Java is used either in the sense of any type that inherits from <code>java.lang.Object</code> or any non-generic type (i.e., any type that is an instance of <code>java.lang.Class</code>).</li> </ul>	
<b>Lead Developer, Founder</b> Inflection ( <a href="https://github.com/liquid-mind/inflection">github.com/liquid-mind/inflection</a> )		
		December 2014 to July 2015
Introduces the notion of class views to Java as a way of adapting class models to specific use cases. Highlights of the implementation include:		
	<ul style="list-style-type: none"> <li>• Domain specific language for declaring views of classes, written in ANTLR (Another Tool for Language Recognition).</li> <li>• Introduction of taxonomies as a set of related views. System supports reuse by allowing more specific taxonomies to inherit from more general taxonomies.</li> <li>• Loading and linking mechanism that allows for compiled taxonomies from multiple jar files to be used in a single application (analogous to class loading).</li> <li>• Seamless integration of class views into the Java type system by allowing objects to be cast from classes to views and back again.</li> </ul>	
<b>Lead Developer, Founder</b> Warp ( <a href="https://github.com/liquid-mind/warp">github.com/liquid-mind/warp</a> )		
		March 2012 to January 2015
Provides persistent threads in Java as a way of seamlessly integrating slow agents (usually humans) into an orchestrating process. Concept was developed at the ETH in conjunction with Thomas Gross from the Laboratory for Software Technology. Highlights of the system include:		
	<ul style="list-style-type: none"> <li>• Novel implementation of continuations in Java using byte code instrumentation to extract the normally inaccessible call stack state.</li> <li>• Introduction of coroutines to Java by allowing users to define special “long-running” methods that automatically suspend the execution state of a thread to persistent storage while waiting for some external event to occur.</li> <li>• Ability to restart a virtual machine without loosing the state of the running threads.</li> <li>• Load balancing of persistent threads across multiple nodes.</li> <li>• Recovery of long-running processes in cases of system failure.</li> </ul>	
<b>Lead Developer, Founder</b> Deflector ( <a href="https://github.com/liquid-mind/deflector">github.com/liquid-mind/deflector</a> )		
		July 2014 to December 2014
Transforms Java checked exceptions into Java runtime exceptions by generating wrapper classes for arbitrary APIs in Java. The wrapper classes use static methods to delegate calls from and to the target API, wrapping exceptions as necessary. Checked exceptions, such as <code>java.lang.IOException</code> , for which there is no useful way to recover, may be handled by a small number of top-level handlers. This drastically reduces the amount of handlers spread throughout the code and makes wrapping exceptions by hand superfluous. It also makes bad programming practices, such as printing the exception and continuing, far less likely. Anders Hejlsberg, lead C# architect, sheds light on the problems with checked exceptions here: <a href="http://www.artima.com/intv/handcuffs.html">http://www.artima.com/intv/handcuffs.html</a> .		

## Experience

### Application Architect

February 2014 to present

Zürich University of Applied Sciences

- Lead architect and developer on several projects jointly undertaken with the EU and the Swiss Commission for Technology and Innovation ([www.kti.admin.ch](http://www.kti.admin.ch)), including Faircare (social services for seniors, [www.aal-europe.eu/projects/faircare/](http://www.aal-europe.eu/projects/faircare/)), ExpAct (job portal for seniors, [www.aal-europe.eu/projects/expact](http://www.aal-europe.eu/projects/expact)), Pink Elephant (creative workshop tool) and CleanTech (directory of clean technology companies).
- Helped to form a cohesive working group out of a heterogeneous set of part-time assistants, students and full-time staff. Introduced formal design and development processes, formal specifications in UML, version control (git), code reviews and coding standards.
- Defined a formal introductory program for interns that included the design and implementation of a fictitious web shop using a self-written JSON serializer. Topics included lexing and parsing, working with servlet technologies, defining domain models, writing reusable frameworks, addressing non-functional requirements (i.e., security, scalability, etc.) and working with build and version control tools.
- Initiated the open source projects Deflector and Inflection (see section on open source projects) that were used as supporting frameworks in several applications.

#### Key Skills and Technologies

- Java, JAX-RS, Servlet, EJB, JAAS
- JPA, JTA/JTS, Hibernate, EclipseLink, Derby, MySQL
- UML, SysML, UML Profiling, DSL, OOA/OOD
- Magicdraw UML

### Enterprise Architect

February 2013 to November 2013

Belsoft AG, Zürich

- Designed a UML profile that allows customers to specify systems and processes at both the business and technical levels.
- Implemented SNMP synchronization software for automatically creating UML elements based on existing network infrastructure.
- Created plugin for MagicDraw UML that streamlines creating and maintaining allocations between business and technical infrastructure.
- Designed and implemented reporting front-end that combines live network data with service level requirements for the UML model to obtain high-level management reports of key performance indicators.

#### Key Skills and Technologies

- Java, Swing, MagicDraw Open API, SNMP4J
- UML, SysML, UML Profiling
- Magicdraw UML, What's Up

### Application Architect

March 2009 to August 2012

ETH (Swiss Federal Institute of Technology), Zürich

- Designed and implemented a general purpose order management engine for applications that require configurable, order-based workflows. Features include registering, validating, authorizing, archiving, tracking and auditing orders. Standard modules address many common problems, such as ORM (JPA) integration, selection and synchronization of data, and front-end integration (JSF).
- Led the project "Kick-Start Java" whose goal was to establish the Java programming language and a Java-based development platform as standard. Introduced critical development practices, including design and code reviews, multi-level (unit / integration / system, etc.) testing and formal release and configuration management. Also provided extensive coaching for novice and intermediate Java developers.
- Co-lead of ETH's project DOI (Digital Object Identifier) which served as flagship for the order management engine.
- Analyzed the business objects and processes underlying ETH's current identity management system and created a target model based on identity management best practices. Special challenges included handling the fairly high semi-annual fluctuations of students, allowing for multiple isolated security domains and integration with a number of input and output systems.

#### Key Skills and Technologies

- Java, JEE, JPA, JPQL, JMS, EJB, MVC
- Glassfish, Tomcat, Oracle, MySQL
- UML, SysML, OOA / OOD
- Magicdraw UML

**Sabbatical in India**  
Brahmani Yoga, Goa

August 2008 to February 2009

Completed the five hundred hour Yoga Alliance certified teacher training in Ashtanga Vinyasa yoga with Julie Martin at Brahmani Yoga ([www.brahmaniyoga.com](http://www.brahmaniyoga.com)) in Anjuna, Goa.

**Architectural Planer**  
Zürcher Kantonalbank, Zürich (Contract)

April 2007 to June 2008

In preparation for the merger of the logistics divisions of ZKB and BCV (Banque Cantonale Vaudoise), was assigned conceptual lead for defining a new domain-based architectural structure and methodology.

**Key Skills and Technologies**

- Sparx Enterprise Architect
- UML, SysML, SOA
- Visio, Powerpoint

Specific outputs included:

- An enterprise-wide, UML/SysML-based architectural model, capable of representing all relevant aspects - from requirements and business process models to the physical IT infrastructure, from IT-supported to organizational processes.
- A comprehensive technical integration architecture model, capable of representing any maturity level - from manual integration to full-blown service oriented architecture.
- Pilot application of architectural concepts to one of the top 20 ZKB projects, Reporting Services Investments, with subsequent fine-tuning and recognition of consequences for organizational processes and structure.
- A number of presentations on topics, including: UML & SysML, Unified Enterprise Model, Integration Architecture, Modeling Methodology and Organizational Structure.
- Coaching of key individuals, structuring of educational planning.

**Application Architect**  
Zürcher Kantonalbank, Zürich (Contract)

November 2006 to March 2007

- Responsible for architecture of and activities surrounding two key integration platforms: Websphere Process Server and proprietary external connection integration platform.
- Established and maintained comprehensive architectural models, including business process and system views.
- Worked closely with project managers to assure smooth coordination between projects.
- Primary contact point from and to developers: established and oversaw the execution of concise quality standards regarding requirements management, development and testing.

**Key Skills and Technologies**

- Sparx Enterprise Architect
- UML, SOA
- Visio, Powerpoint

**Architectural Analyst**  
Credit Suisse, Zürich (Contract)

November 2005 to September 2006

- Documentation and analysis of all key systems within payments department, including applications written in Java, C/C++ and PL/1 and running in both PC and mainframe environments. The resulting UML diagrams proved to be highly useful tools for communication and planning.
- Developed a cost model to identify key cost drivers and estimate potential savings of various architectural options. This model demonstrated the cost advantages of moving to a more modern, Java-centric architecture.
- Constructed a comprehensive plan to iteratively migrate the existing legacy system-based application landscape to a more business-oriented, integrated and flexible architecture.
- Held presentation for key stakeholders highlighting the main points.

**Key Skills and Technologies**

- Java, JDBC, CORBA, EJB, JMS
- Weblogic, MQSeries, DB2, Oracle
- TCP/IP, IIOP(S), HTTP(S), SQLNET
- UML, OOA/OOD
- Visio, Subversion

**Configuration and Release Manager**  
Credit Suisse, Zürich (Contract)

February 2005 to September 2005

- Established a set of guidelines and processes to improve coordination with offshore partners. These were adopted by other projects within the same department (payments) as a baseline for organizing offshore collaboration. Topics covered include version control, change control, deployment and bug management.
- Created and maintained a UML overview of the project artifact dependencies as well as application, system and deployment architectures.
- Introduced a set of tools and processes for managing project documentation. Wrote several server-side scripts to validate files and associated meta-data. Configured document repository with WEBDAV/Delta-V to ensure smooth integration into existing environment.
- Developed a small application to analyze class dependencies and identify redundancies within jar files. This tool was used extensively to disentangle existing code before handing off for offshore development.
- Set up a system monitoring environment based on XML, XSLT and Subversion. The associated web pages were used by key stakeholders to quickly track down problems and coordinate testing within a highly dispersed development team.

**Key Skills and Technologies**

- UML, OOA/OOD, Design Patterns, MVC
- XML, XSL, XSLT, HTML, CSS
- Apache, Subversion, WEBDAV, TortoiseSVN
- Java, CORBA, EJB
- Visio, Perl, CVS

**Architectural Planner**  
SBB, Bern (Contract)

April 2004 to August 2004

- Advised project and department leads on the implications of the new DMZ architecture with a special focus on security and networking aspects.
- Assisted projects in determining suitable migration paths. Helped teams solve critical application porting issues while minimizing development overhead.
- Consolidated the new DMZ architecture based on project feedback and evolving requirements. Designed high level architecture blueprints documenting both present and target operating environments.
- Analyzed the application architecture landscape, paying special attention to all services communicating through internet and extranet channels. Devised a set of criteria for determining DMZ relevance and assisted teams in deciding if and how they would be effected.
- Helped to coordinate efforts across many teams and departments, including the architecture, networking and security departments of SBB, the infrastructure provider (TSystems), a number of external specialists and consultants (Nortel and others), as well as large array of software development teams, both internal and external. Helped to secure the timely flow of key data - crucial in such large projects - between all participants.
- Supplied vital impulses, including recognizing the need for a full-time, fully integrated service organization. Helped to define its goals, structure and processes.

**Key Skills and Technologies**

- CORBA, EJB, JMS, Servlets, JDBC, RMI
- Websphere, JBoss, Apache, Lotus Domino, MQSeries, SAP, Oracle
- TCP/IP, HTTP(S), IIOP(S), LDAP(S), JRMP, NRPC, SQLNET, GPRS, WAP, RIP, OSPF, BGP, WebDAV/Delta-V
- NAT, DNS, SMTP, POP3, SNMP
- Load balancing, Tunneling, Routing, Clustering, Proxy/Reverse Proxy
- DMZ, WES, VPN, SSL/TLS, SSH, SCP, WTLS, Radius, MetaDir, RSA SecurID
- Subversion, TortoiseSVN

**Developer/Architect**  
UBS, Zürich (Contract)

July 2003 to November 2003

- Designed and implemented a Web Services portal for a world-wide intranet software integration project. The portal was designed using the Apache AXIS framework running on Websphere 4 application server, using HTTPS. Key concerns were in the areas of security, performance and

**Key Skills and Technologies**

- Java, POI-HSSF, RMI, Log4J, Dynamic Proxy, Reflection
- Struts, Tiles, JSP, Servlets, JSTL, JNDI, JTA/JTS, EJB, HTML, Javascript
- SOAP, Axis, WSDL, XML, XML-RPC
- Websphere, iPlanet, Tomcat, JBoss
- PKI, SSO, HTTPS, SSL
- Eclipse, Ant, JUnit, Toad, CVS

maintainability. A solution was provided that enables developers without Web Services knowledge to maintain and extend the functionality.

- Migrated reporting engine to application's new business and data model. This involved major redesign of several key areas, including the interface to the RDB (Oracle), the user interface (Struts) and the spreadsheet output module (Jakarta POI).

#### Developer/Architect

Credit-Suisse, Zürich (Contract)

Assisted in the migration of the eCommerce Platform (formerly Youtrade) from Weblogic 5.x to Weblogic 6.x. The focus here was on ensuring that the application security components would still run correctly under Weblogic 6.x. Tasks included re-engineering workarounds that were originally introduced to deal with shortcomings in Weblogic 5.x and also extensive testing in a clustered environment.

February 2003 to April 2003

#### Key Skills and Technologies

- Java, JAAS, RMI, Concurrency, Reflection
- EJB, JNDI, LDAP, XML
- Weblogic, Clustering, JUnit

#### Developer/Architect

Profitline, Dietikon (Ideartis Consulting)

February 2002 to August 2002

#### Key Skills and Technologies

- Java, Java Web Start, RMI, JDBC, Log4J, Concurrency
- EJB, JNDI, JavaMail, JTA/JTS, XML
- Silverstream, JBoss, Tomcat, Apache, VMware
- HTTPS, SSL/TLS, Load balancing, Clustering, DMZ
- OOD, UML, Design Patterns, J2EE Patterns, Java Blueprints
- Eclipse, TogetherJ, Karmira Bugseeker, XDoclet, Toad, Ant, JAD, JUnit, CVS

- Analysis and review of key technical infrastructure aspects: class loading in Silverstream, session handling, connection pooling and transaction management.
- Developed a multi-threaded Java client to test Silverstream's load and performance capabilities by simulating both internet and intranet users. Features included client and server side (via server proxy) performance measurements, statistics gathering capabilities and hooks for plugging in arbitrary tests that could be written by other developers.
- Reverse engineering of Silverstream using JAD (Java Decomplier) and use of several advanced debugging techniques, including modifying and recompiling parts of Silverstream and modifying and compiling parts of the JDK (for example to clarify class loading and resource management issues). Found sporadic and extremely hard to locate error in Silverstream's transaction management engine when handling multiple threads from the same client (race condition). Issue raised with Silverstream, who recommended upgrading to V4.0.
- Wrote an XDoclet extension to automatically generate the EJB interfaces and implementation classes from the existing application specific component model.
- Developed a platform for performing zero administration application deployment using Java Web Start.

#### Developer/Architect

Credit-Suisse, Zürich (Ideartis Consulting)

January 2001 to January 2002

#### Key Skills and Technologies

- Java, JAAS, RSA SecurID, BCEL, RMI, Log4J, Concurrency, Dynamic Proxy, Reflection
- EJB, CORBA, JSP, Servlets, JNDI, LDAP
- XML, XSL, XSLT, XPath, DOM, Xerces, Xalan
- Weblogic, Tomcat, Apache, VMware, HTML
- SSO, DMZ, HTTPS, IIOPS, LDAPS
- Load balancing, Clustering
- OOA/OOD, UML, Design Patterns, Extreme Programming
- TogetherJ, NetBeans, Ant, Karmira Bugseeker, JUnit, Jindent, JAD, CVS

- Proposed an extended application security architecture based on the EJB 1.1 specification to solve Credit-Suisse specific security requirements. Client- and server-side proxies/ interceptors were at the heart of this architecture, allowing the extended security mechanisms to be plugged in transparently. Other features were the ability to plug in arbitrary - even multiple simultaneous - security domains and an XML based permission request/response format.
- Deliverables included a white paper describing the architecture in detail, an implementation of the software for the Weblogic platform with Junit tests and API (javadoc) documentation and extensive Ant scripts providing automatic deployment

in clustered and non-clustered environments.

- The software was tested extensively - in both clustered and non-clustered configurations - for functionality and performance. These tests were conducted on the Intel platform using VMware virtual machines, before deploying and re-testing on the target platform, Solaris.

### Developer

Zürcher Kantonalbank (Ideartis Consulting)

Designed and implemented a solution for integrating Entrust PKI/Smartcards with Websphere application server. Solution consisted of a reverse proxy that enabled tunneling of RMI (EJB calls) through HTTPS to ensure highly secure B2B connectivity for elite customers. Client-side remote object wrappers, in conjunction with the reverse proxy, ensured that this additional infrastructure remained completely transparent for EJB developers.

August 2000 to January 2001

#### Key Skills and Technologies

- Java, JCDK, RMI, Concurrency
- EJB, JNDI, LDAPS, MetaDir, HTTP(S), XML
- VPN, SSL/TLS, Tunneling, Reverse Proxy
- Entrust, Smartcards, Biometrics, PKI, SSO, OpenSSL
- Websphere, VMware, Ant, NetBeans, JUnit, Jindent, CVS
- OOA/OOD, UML, Design Patterns

### Developer

AWK Engineering, Zürich (Ideartis Consulting)

April 2000 to July 2000

Designed and implemented a web front end for a project management system using JSP and Tomcat. This project was delivered to the customer and put in production as a “stateless” VMware virtual machine. In this configuration, state is not written to the virtual hard disk directly, but instead goes into a log file. Should problems arise, the system administrator can simply reboot the virtual machine and the state is precisely restored. Also, since the virtual hard disk is just another file on the host OS, this file can be backed up to protect against worst case scenarios. The result was that the customer was able to view the deliverable as a pure black box, drastically reducing the need for training and coordination.

#### Key Skills and Technologies

- Java, Concurrency, JDBC
- Servlets, JSP, JNDI, JTA/JTS, HTTP, XML
- Tomcat, Apache, VMware
- ODBC, MS Access
- OOA/OOD, UML, Design Patterns
- NetBeans, Ant, JUnit, Jindent

### Developer

Rentenanstalt (Swisslife), Zürich

November 1998 to March 2000

#### Key Skills and Technologies

- Java, Swing, Applet, JDBC, RMI, JNI
- EJB, CORBA, JNDI, HTML, CSS
- Oracle, MS Access, ODBC, Apache, VMware
- HTTP(S), IIOP(S), JRMP, RIP, SSL
- ClearCase, CVS
- TogetherJ, Rational Rose, Frontpage
- OOA/OOD, RUP, UML, Design Patterns
- C++, STL, Visual C++, MFC, Win32 API, Rogue Wave

- Designed and implemented a reporting component for a Customer Relationship Management (CRM) solution written in C++, using Visual C++ and Microsoft Foundation Classes (MFC).
- Introduced a widget library that extended the MFC by adding Model/View/Controller (MVC) classes and Java-like listeners and events. This library, entitled ExtremeMFC, offered a much greater level of abstraction than Microsoft's own API. It was initially designed to support the development of the CRM reporting component, and was later widely adopted throughout the rest of the application.
- Assisted in the analysis, design and implementation of a prototype for an EJB-centric Customer Relationship Management (CRM) solution.

### Developer

Warburg Dillon Read, Zürich (Perot Systems)

April 1997 to October 1998

Designed and implemented several tools in C++ to assist in data migration and a Windows NT4.0 rollout, including:

- An application to scan the network for workstations and extract the informa-

#### Key Skills and Technologies

- HTML, CSS, Frontpage, IIS
- ODBC, MS SQL Server
- C++, STL, Visual C++, MFC, Win32 API, Perl
- OOA/OOD, UML, Design Patterns

- tion defining each user's private mappings.
- An application to replace and overcome some of the shortcomings of Windows NT's own user manager a replacement for login scripts based on a central SQL database.

**Developer**  
Consida AG, Zürich

February 1996 to March 1997

Assisted in the migration of C-System - a contract and project management solution - from a proprietary legacy programming environment to Powerbuilder.

**Key Skills and Technologies**

- Powerbuilder, Sybase, ODBC

**IT-Technician**  
Studerus Telecom AG, Nänikon

September 1992 to September 1994

Responsible for the testing and repair of telecommunications devices.

**Junior Programmer**  
ORGA Project Management AG, Uster

November 1990 to September 1991

Designed and implemented modules for a customer information system and a time/project tracking system in DBase and Clipper.

**Key Skills and Technologies**

- DBase, Clipper

**Education**

1987-1991	School for Mathematics and Natural Sciences, Rämibühl, Zürich
1985-1987	Secondary School, Zürich
1983-1985	Primary School, Zürich
1978-1982	Primary School, TN, USA

**Other Interests**

Photography, Coffee & Wine, Trekking & Camping, Jogging, Bicycling, Philosophy, Yoga

# Skills and Technical Experience

Skills are rated on a scale from 1 to 5 as follows:

Expert	5
Advanced understanding of skill area	4
Thorough understanding of skill area	3
Some experience, good working knowledge	2
Limited understanding, little actual experience	1

Web Service Description Language	2	6
XML-RPC	2	6

## Middleware

Skill	Level	Months
Apache Web Server	3	54
Tomcat Servlet Engine	3	36
Jetty Servlet Engine	4	48
Oracle Glassfish Application Server	3	42
JBoss	2	12
BEA Weblogic Application Server	2	24
IBM Websphere Application Server	2	12
IBM MQSeries	2	6
VMware	3	48
Oracle VirtualBox	3	48

## Database / ORM

Skill	Level	Months
SQL General Knowledge	4	84
JPQL General Knowledge	4	30
Oracle	3	66
DB2	2	6
MS SQL Server	2	24
MS Access	2	6
Sybase	2	18
PostgreSQL	2	6
MySQL	3	6
Apache Derby	4	48
Open Database Connectivity	2	54
EclipseLink	3	6
Hibernate	4	78

## XML

Skill	Level	Months
Extensible Markup Language	3	60
XML Schema	2	42
Document Type Definition	2	42
XML Namespaces	2	42
Extensilbe Stylesheet Language	2	24
XSL Transformation	3	24
XPath - XML Selection Language	3	18
Document Object Model	3	24

## Web Front-End

Skill	Level	Months
Hypertext Markup Language	3	132
Cascading Style Sheets	3	102
Javascript	2	12

## Networking Protocols

Skill	Level	Months
TCP/IP Protocol Suite	4	96
Domain Name System	3	78
Dynamic Host Configuration Protocol	4	78
Network Address Translation	4	54
Simple Network Management Protocol	4	18

## Networking Architecture

Skill	Level	Months
Routing	4	54
Bridging	4	48
Tunnelling	3	12
Clustering	3	30
Firewalls	3	48

## Core Java

Skill	Level	Months
Java General Knowledge	5	138
Java Generics	5	84
Java Annotations	5	84
Lambda Expressions / Closures	4	12
Java Concurrency	5	120
Another Tool for Language Recognition (ANTLR)	5	24
JavaBeans	5	114
Java Collections	5	138
Java Database Connectivity	4	102
Java Authentication and Authorization Service	4	24
Internationalization Features	3	36
Java Security Features - General Knowledge	3	60
AWT & Swing	3	36

## Java Enterprise

Skill	Level	Months
J2EE General Knowledge	4	150
Enterprise JavaBeans	4	60
Java Message Service	3	6
Java Servlets	4	96
Java Persistency API	4	78
Java Transaction API	3	30
Java Transaction Service	3	30
JavaMail	2	12
Java Naming and Directory Interface	5	60
Lightweight Directory Access Protocol	3	24
J2EE Deployment	5	120
Java API for XML Processing	3	6
JavaServer Faces	3	12
JavaServer Pages	3	24
JSP Standard Tag Library	2	6
Spring Framework	2	12

## Modeling

Skill	Level	Months
Modeling General Knowledge	5	186
Unified Modeling Language	5	180
Systems Modeling Language	4	36
Meta-Object Facility	4	102
UML Profiling	5	102
Domain Specific Languages	5	126
Object Oriented Analysis/Design	5	192
Design Patterns	5	162
MagicDraw UML	5	84
MagicDraw Plugin Architecture	4	12
MagicDraw Domain Specific Language Features	4	12
Eclipse Modeling Framework	4	6
Sparx Enterprise Architect	3	18

## Web Services

Skill	Level	Months
Web Services General Knowledge	4	42
JavaScript Object Notation (JSON)	5	36
Java API for RESTful Web Services (JAX-RS)	3	36
Simple Object Access Protocol	2	6

Load balancing	4	30
Proxy/Reverse Proxy	4	12

## Networking Security

Skill	Level	Months
Secure Sockets Layer	3	42
Transport Layer Security	3	18
Virtual Private Network	4	12
Demilitarized Zone	4	30

## Security

Skill	Level	Months
Cryptography General Knowledge	3	30
Authentication	4	84
Authorization	4	78
Single Sign On	4	48
Public Key Infrastructure	3	12
Shibboleth	3	6
Pretty Good Privacy	3	48
Biometrics	3	6
RSA SecurID	3	18
Smartcards	2	6

## Version Control

Skill	Level	Months
Git	4	12
Github	4	12
Subversion	4	72
Concurrent Versions System	2	54
Rational ClearCase	1	6

## Development Tools

Skill	Level	Months
Eclipse	5	96
NetBeans	2	24
Maven	2	6
Ant	5	90
Ivy	3	6
Gradle	3	12
Javadoc	3	60
Java Doclet	3	18
JUnit	5	114

## Operating Systems

Skill	Level	Months
Mac OS	5	90
Linux	4	48
Windows	2	132
Solaris	1	60
DOS	1	12

## Other Languages

Skill	Level	Months
C / C++	3	36
DBase	1	12
Clipper	1	12
Powerbuilder	1	0
Perl	1	30

## Letters of Recommendation

Herr  
John Brush  
Karl Stauffer-Str. 3  
8008 Zürich

Zürich, 1. Dezember 2013

**SCHLUSS-ZEUGNIS** (Dieses Zeugnis ist uncodiert abgefasst)

John Brush arbeitete vom 1. Februar 2013 bis Ende November 2013 als „Software-Architect“ in unserem Betrieb.

Herr Brush führte für unsere Kunden technische und konzeptionelle Arbeiten in den Bereichen UML-Design und Consulting in den Bereichen Enterprise-Architekturen durch.

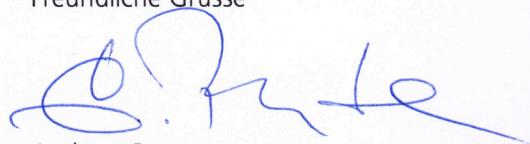
Herr Brush verfügt über sehr gute fachliche Qualifikationen, arbeitete äusserst konzentriert und vermochte ein grosses Pensum zu bewältigen.

Mit den erbrachten Leistungen von Herr Brush waren wir äusserst zufrieden. Sein Verhalten gegenüber Vorgesetzten, Mitarbeitern, Lieferanten und Kunden war jederzeit sehr angenehm, korrekt und zuvorkommend.

Aufgrund einer Reorganisation bei einem unserer Kunden, wurde das Projekt für das wir Herrn Brush eingestellt hatten, ohne unsere Schuld und ohne Rücksicht auf die erreichten sehr guten Resultate gestoppt. Da wir auch innerhalb der Belsoft AG keine andere, geeignete Stelle anbieten konnten, haben wir uns leider entschliessen müssen, das Arbeitsverhältnis aufzulösen.

Wir möchten uns für die erbrachte Arbeit und das geleistete Engagement herzlich bedanken und hoffen sehr, dass Herr Brush bald eine geeignete Stelle finden wird. Wir wünschen ihm beruflich und privat alles Gute.

Freundliche Grüsse

A handwritten signature in blue ink, appearing to read "A. Ponte".

Andreas Ponte  
Leitung Belsoft Applications



Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich

Informatikdienste  
ID Software Services

ETH Zürich  
CH-8092 Zürich

Matteo Corti  
WEC E 13  
Weinbergstrasse 11  
Tel. +41 44 632 79 44  
matteo.corti@id.ethz.ch  
www.id.ethz.ch

## Employment reference letter

John Brush, born August 8, 1972, was employed as a senior software engineer, software architect and project manager by the Software Services division of ETH Zurich's IT Services from March 2009 to August 2012.

John was the project manager and lead engineer of two important projects: *Kickstart Java* (reorganization of the group development tools and processes) and *nethz 3.0* (ETHZ in-house identity management tool).

*Kickstart Java:* John redesigned all the processes governing software development, testing and deployment of a group of five Java developers. He designed and implemented a framework, built upon modern and standard technologies, to serve as a solid base for all our new Java projects. The framework was then used for two large in-house products and is now distributed as open source (*Lakshmi* on JEE).

*nethz 3.0:* John performed an extensive and detailed analysis of our 10-years old identity management system highlighting several shortcomings. He then redesigned the system by defining a novel architecture. He lead the technical design and implementation of the core system which is now used to integrate several resource management modules.

John is highly reliable, focused and hard working and has excellent technical and design knowledge. We are impressed by John's overall job performance and quality. He works as a team member and he was able to manage both projects with limited resources while keeping the defined deadlines.

As both projects are phasing-out we very much regret that we are not in the position to extend his contract.

We thank John for his valuable contributions and excellent work and we highly recommend him as a candidate for employment.

This certificate of employment is meant to be interpreted as written.

ETH Zurich

Matteo Corti  
Head of ID Identity/Access Management & eServices

Zurich, September 2012

Ideartis AG  
contact Technoparkstrasse 1 8005 Zurich  
mail Hegibachstrasse 76 8032 Zurich  
phone 01 420 16 94  
fax 01 420 16 93  
mobile 079 437 40 76

Zürich, 19.09.2002

## Arbeitszeugnis

John Brush, geboren am 8. August 1972, war bei Ideartis als Java- und J2EE-Entwickler von April 2000 bis August 2002 beschäftigt. Im August musste Ideartis aus wirtschaftlichen Gründen die meisten Mitarbeiter entlassen.

Herr Brush war Lead Architect und Senior Developer in vier J2EE Projekten bei verschiedenen Kunden.

- Das erste Projekt war für die Engineering-Firma AWK Group. Es ging um die Realisierung eines Web-Frontend für ein Project Management System mit JSP und Tomcat. Dabei wurde auch ein allgemeines JDBC Connection Pooling Module realisiert.
- Das zweite Projekt war das Security-Konzept und -Realisierung in einer EJB-Architektur für die Custody-Application bei der ZKB (Zürcher Kantonalbank). Die verwendeten Technologien waren das PKI von Entrust, IBM WebSphere, Smartcards und digitale Signatur.
- Das dritte Projekt war die Security-Architecture der Credit-Suisse e-Commerce-Plattform. In diesem –für Credit-Suisse strategisch wichtigen Projekt war die Herausforderung, die Limitierung der EJB-Security zu erweitern und gleichzeitig die Erweiterungen für den Entwickler transparent zu halten. Die Lösung mit Client- und Server-Interceptors war nicht nur elegant, sondern auch sehr effizient in der komplexen clustered Umgebung der e-Commerce-Plattform.
- Das letzte Projekt war für den Integrator Steria. Die Aufgabe war die Unterstützung bei schwierigen Problemen im Einsatz von J2EE mit Silverstream im Customer Relationship Management System der Profitline (Swisslife). Die verwendeten Technologien und Methodiken waren XDoclets, Java 1.4 dynamic proxies, Load-Balancer, Network-Analyse, low-level Debugging und Reverse-Engineering.

Herr Brush zeigte stets hohe Motivation und eine exakte und rationelle Arbeitsweise. Er hat die ihm übertragenen Aufgaben stets zu unserer vollen Zufriedenheit gelöst. Während den Projekten und bei unseren informellen Diskussionen freitags konnte er seine Meinung klar und basierend auf technische Gegenbenheiten und logische Schriftfolgerung überzeugend kommunizieren. Er ist fähig, schwierige Probleme zu lösen, in dem er sich in technische Details vertieft, ohne den Überblick zu verlieren.

Herr Brush ist ein umgänglicher und zuverlässiger Mensch. Er hat gezeigt, dass er sich im Team schnell integriert und seine Leistung bei klarer Arbeitsteilung im Team bestens entfaltet. Er kann einen essentiellen Beitrag innerhalb einer Entwicklungsgruppe leisten. Ich würde ihn jederzeit wieder einstellen. Ich freue mich, Herrn Brush wärmstens an alle IT-Gruppen empfehlen zu können und wünsche ihm für die Zukunft alles Gute, viel Erfolg und Zufriedenheit in seiner beruflichen Laufbahn.

Dr. Alain Hsiung  
CEO  
Ideartis Inc.



**Direktion**

General Guisan-Quai 40  
Postfach 2831, 8022 Zürich  
Telefon 01/284 33 11  
Fax 01/284 45 00

Zürich, 15. Oktober 2002

**ZEUGNIS**

Herr John Brush, geboren am 8. August 1972, amerikanischer Staatsbürger, war vom 1. November 1998 bis am 30. April 2000 für unsere Gesellschaft tätig. Für die Zeit bis zum 28. Februar 1999 verweisen wir auf das Zwischenzeugnis gleichen Datums.

In der Organisationseinheit "Informatik Vertrieb" des Konzernbereichs Schweiz arbeitete Herr Brush als Applikationsentwickler und war für folgende Hauptaufgaben verantwortlich:

- Mitarbeit bei der Evaluation zum Thema CRM (Customer Relation Management), insbesondere bei der vertieften Analyse der technischen Aspekte und Abhängigkeiten
- Massgebliche Mitarbeit bei der Analyse, dem Design und der Implementation eines der Prototypen in der Evaluation (dieser Ansatz verfolgte ein EJB-zentriertes Design)

Ausserdem hatte Herr Brush folgende Spezialaufgaben inne:

- Einführung und Betrieb von VMware, einer Anwendung zur Simulation diverser Betriebssysteme parallel auf einem Rechner (Unix, NT usw.), welche sowohl bei der Entwicklung als auch beim Testen von verteilten Applikationen (Unix, NT) verwendet werden kann (diese wurde ebenfalls zur kostengünstigen Simulation eines Netzwerkes mit Firewall verwendet)
- Einführung und Konfiguration von Doxygen zur automatischen Generierung von java-doc-ähnlichen Dokumenten aus den Programmtexten

Wir haben Herrn Brush als äusserst belastbaren, ausdauernden und selbstständigen Mitarbeiter kennen gelernt. Er ging seine Aufgaben mit einem überdurchschnittlichen Engagement an, entwickelte mit guter Vorstellungskraft eigene Ideen und setzte diese praxisorientiert um. Speziell erwähnen möchten wir seine exakte und sorgfältige Arbeitsweise sowie seine rasche Auffassungsgabe. Herr Brush erledigte die ihm übertragenen Aufgaben zuverlässig und gewissenhaft sowohl qualitativ wie quantitativ stets zu unserer vollen Zufriedenheit.

Wir schätzten Herrn Brush als eine aufrichtige, kritikfähige und kompromissbereite Persönlichkeit mit ausgezeichneten Fachkenntnissen und einem hohen Spezialwissen. Er vertiefte sein Knowhow im EJB-zentrierten Design im Selbststudium und führte mit den beigezogenen Experten Diskussionen auf hohem Niveau. Sein Verhalten gegenüber Vorgesetzten und Mitarbeitenden war jederzeit freundlich und korrekt.

Herr Brush verliess unsere Gesellschaft am 30. April 2000 auf eigenen Wunsch, was wir sehr bedauern. Wir danken ihm für die geleisteten wertvollen Dienste und wünschen ihm für die berufliche und private Zukunft alles Gute.

Rentenanstalt/Swiss Life



Thomas Vetterli  
Vizedirektor  
Leiter Informatik Privatkunden



Christine Staub  
Bereichspersonalverantwortliche

Perot Systems Corp.  
GDIP, Switzerland

Roger Kirby  
Europastrasse 1  
8152 Opfikon  
Tel. - 01 23 92619  
roger.kirby@wds.com

04 August 1998

As a member of the GDIP Infrastructure team in Switzerland, John Brush worked as a C++ programmer developing tools essential to the successful deployment of Windows NT. The team's role was to construct the NT server infrastructure in several Swiss cities, migrate data from non-NT platforms, and establish basic support procedures for the Swiss environment. The Swiss NT infrastructure is part of Warburg Dillon Read's global NT network.

In support of data migrations from OS/2 to NT, Mr. Brush designed and developed tools in C++ including:

- An auditor of private mappings on NT workstations.
- A set of classes that wrap NT API functions to access the SAM. Information about users, groups, server and workstation accounts is retrieved and output as an SQL database.

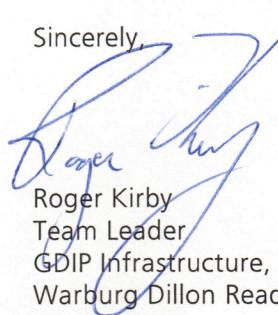
As a solution for login script maintenance problems in this large NT environment, Mr. Brush developed a C++ program that eliminates scripts and replaces their functionality with a relational database. This prototype is under consideration for global use.

Mr. Brush contributed his excellent programming and design practices to solve problems critical to the bank. He took the initiative to recommend solutions and implemented them within a reasonable time. His creativity and skills improved our ability to construct a large and reliable NT environment.

He works well under pressure, has an excellent sense of humour and has applied solid design principles in all his endeavours.

I strongly recommend Mr. Brush for any development project that requires imagination and initiative as well as programming skills.

Sincerely,



Roger Kirby  
Team Leader  
GDIP Infrastructure, Switzerland  
Warburg Dillon Read Account  
Perot Systems

# **STUDERUS TELECOM**

STUDERUS TELECOM AG  
Grabenstrasse 8  
8606 Nänikon  
Switzerland  
Telefon 01 905 50 00  
Telefax 01 905 50 01

## **ARBEITSZEUGNIS**

Wir bestätigen hiermit, dass Herr John Brush, geb. am 8.8.72, von USA, vom 1.9.92 bis zum 30.9.94 in unserem Unternehmen tätig war.

Herr Brush arbeitete in unserer Firma halbtags als EDV-Techniker. Zu seinen Aufgaben gehörten insbesondere:

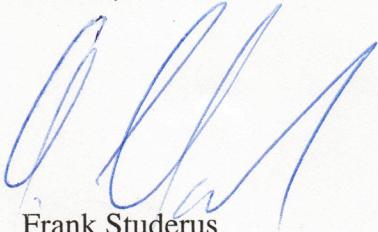
- Überprüfen von Telekommunikationsgeräten und allg. Reparaturen
- Kontrolle des gesamten Ablaufes der Reparaturen und Austauschgeräten
- Bearbeiten von Eprom-Bestellungen

Wir haben Herrn John Brush als pflichtbewussten und einsatzfreudigen Mitarbeiter kennen- und schätzen gelernt. Er arbeitete speditiv und zuverlässig. Herr Brush ist ein vertrauenswürdiger und loyaler Arbeitnehmer, der die Interessen der Firma stets zu unserer vollsten Zufriedenheit wahrgenommen hat.

Er zeichnete sich durch eine ausserordentlich grosse Leistungsbereitschaft aus und war, sofern dies die Umstände erforderten, auch bereit, Überzeit zu leisten. Alle ihm übertragenen Arbeiten wurden ordnungsgemäss erledigt.

Durch eine interne Umstrukturierung sind wir leider gezwungen das Arbeitsverhältnis mit Herrn Brush aufzulösen. Wir danken Herr Brush für die gute Zusammenarbeit in unserem Unternehmen und wünschen ihm für seine berufliche Zukunft viel Erfolg.

Meilen, 14.10.94



Frank Studerus

# ORG A

Project Management AG

Leubergstrasse 15, CH-8615 Wermatswil/Uster

Telefon 01 / 941 58 00 Fax 01 / 941 58 06

## Arbeitszeugnis

Wermatswil/Uster, 30.9.1991

\*\*\*\*\*

Gerne bestätigen wir, dass Herr

**John Brush, geb. 8.8.72 vom 1.11.90 bis 30.9.91 als Junior Programmierer**

bei uns angestellt war.

Herr Brush hat seine bereits vorhandenen Personal Computer- und Programmierkenntnisse bei uns erheblich vertieft und professionalisiert.

So konnte er an theoretischen Kursen sein Fachwissen über **MS-DOS, UNIX , Clipper** erweitern und im praktischen Einsatz das neu Gelernte anwenden.

Dabei hat er auch die für die professionelle Anwendung wichtigen Punkte wie **modulare Programmierung, Dokumentation, Funktionstest** praktisch kennengelernt.

Auf Grund entsprechender Vorgaben hat Herr Brush Anwendungen für ein **Kundeninformationssystem, Arbeitszeiterfassung/Projektüberwachung und verschiedene Spezialmodule** programmiert.

Wir haben Herrn Brush als **sehr korrekten, sauberer und ehrlichen Mitarbeiter** kennengelernt. Sowohl Vorgesetzter, wie auch seine Arbeitskollegen schätzten sein **ruhiges, freundliches Auftreten**.

Herr Brush hat die im übertratenen Arbeiten, trotz seines jugendlichen Alters, **sehr selbständig, gewissenhaft, sorgfältig und mit ganzem Einsatz speditiv** erledigt.

Herr Brush verlässt uns auf eigenen Wunsch, frei von allen Verpflichtungen. Wir bedauern den Weggang dieses vielversprechenden Mitarbeiters und wünschen ihm alles Gute.

Orgaprojekt Management AG



H.E. Osswald

## Certificates



**John Brush**

geboren am 8. August 1972, aus den USA, hat den

**Weiterbildungskurs  
CTI Entrepreneurship Business  
Creation**

an der ZHAW School of Management and Law in Zusammenarbeit mit  
Technopark<sup>®</sup> Academy erfolgreich absolviert.

Anzahl Credits nach ECTS: 3

Zürich, 13. September 2013

Leiter Abteilung General  
Management

A blue ink signature of the name Stephan Loretan.

Stephan Loretan

Der Kursleiter

A blue ink signature of the name Jacques Hefti.

Jacques Hefti

# Sun Certification



John Brush

HAS FULFILLED ALL REQUIREMENTS AS A  
**SUN CERTIFIED ENTERPRISE ARCHITECT**  
FOR JAVA™ PLATFORM ENTERPRISE EDITION TECHNOLOGY

On May 30, 2003

---

Scott McNealy, President, Chairman, and CEO of Sun Microsystems, Inc.

---

Terry Erdle, Vice President, Sun Educational Services

Expiration Date: May 30, 2005



DO NOT LOSE THIS REPORT

## Sun Certified Enterprise Architect for Java™ 2 Platform, Enterprise Edition Technology Exam Examination Score Report

CANDIDATE: JOHN BRUSH

CANDIDATE ID: SP1907534

DATE: February 13, 2003

REGISTRATION NUMBER: IB6DUS5161

SITE NUMBER: SZ18

EXAM: Sun Certified Enterprise Architect for Java™ 2 Platform, Enterprise Edition Technology Exam

SERIES: 051

### Exam Results

Your percentage score was determined by taking the overall number of correct answers divided by the total number of questions.

There are 48 questions in this exam. You answered 44 questions correctly which gives you a score of 91%.

**PASSING SCORE:** 68%    **YOUR SCORE:** 91%    **TEST STATUS:** Pass

### Assessment Section

This report shows the percentage of items in each section you answered correctly for the Sun Certified Enterprise Architect for Java™ 2 Platform, Enterprise Edition Technology Exam exam. The following information is provided to give you feedback on your relative strengths on a per section basis.

Section Analysis	Score %
Concepts.....	.100. %
Common Architectures.....	.66. %
Legacy Connectivity.....	.80. %
EJB.....	.88. %
EJB container Model.....	.100 %
Protocols.....	.100 %
Applicability of J2EE.....	.100 %
Design Patterns.....	.100 %
Messaging.....	.100 %
Internationalization.....	.100 %
Security.....	.100. %

Certification testing is a means of measuring your knowledge and skill level. It can also be used to identify areas that need improvement and areas of strength. It can be used as a tool for further learning and future achievement.

Sun Educational Services offers a variety of tools to help you in your career. By logging on to our certification database, you can find scores for examinations you have taken, confirm or update your address, track your certification progress, and submit questions to the Sun Educational Services' Certification Department.

This assistance is available online at [www.galton.com/~sun](http://www.galton.com/~sun).

To help you further your growth and achievement in the area of Data Management, Sun Educational Services offers a wide variety of instructor-led training (ILT), web-based training, and media-based training that can help you prepare for future certification examinations. You can find information on these offerings, as well as further information on certification examinations online at the Sun Educational Services Web site at: <http://suned.sun.com/certification/>



# SUN CERTIFICATION

John Brush

HAS FULFILLED ALL REQUIREMENTS AS A  
**SUN CERTIFIED PROGRAMMER**  
FOR THE JAVA™ 2 PLATFORM

On May 18, 2000

A handwritten signature of Scott McNealy.

---

Scott McNealy, President, Chairman, and CEO of Sun Microsystems, Inc.

A handwritten signature of Bill Richardson.

---

Bill Richardson, Vice President and General Manager of Sun Educational Services

The JAVA logo, featuring the word "JAVA" in a bold, sans-serif font with a registered trademark symbol, and a stylized sun icon composed of concentric arcs to the left.

DO NOT LOSE THIS REPORT



**Sun Certified Programmer for the Java™ 2 Platform  
Examination Score Report**

**CANDIDATE:** JOHN BRUSH

**CANDIDATE ID:** SP2770246

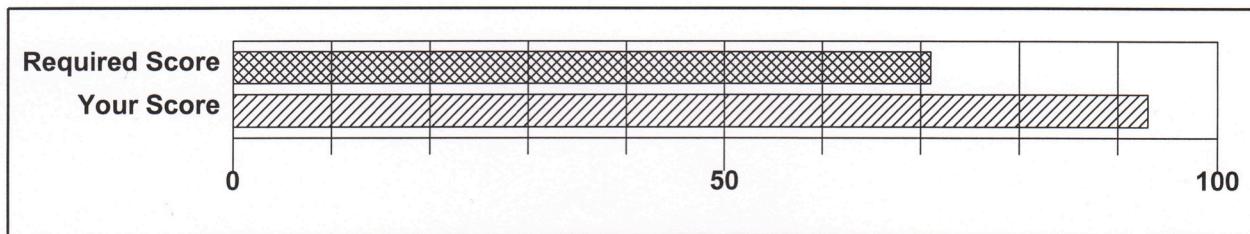
**DATE:** May 18, 2000

**REGISTRATION NUMBER:** ECBDUS0552

**SITE NUMBER:** SZ18

**EXAM:** Sun Certified Programmer for the Java™ 2 Platform

**SERIES:** 025



**PASSING SCORE:** 71% **YOUR SCORE:** 93% **GRADE:** Pass

This report shows the percentage of items in each section you answered correctly for the Sun Certified Programmer for the Java™ 2 Platform test.

**Section Analysis**

	<b>Score %</b>
Declarations and Access Control	100 %
Flow Control and Exception Handling	83 %
Garbage Collection	100 %
Language Fundamentals	92 %
Operators and Assignments	100 %
Overloading, etc.	75 %
Threads	100 %
The java.awt package-Layout	100 %
The java.lang package	100 %
The java.util package	100 %

Certification examinations are a means of measuring a candidate's knowledge and skill level. However, by identifying areas for further improvement and/or areas of strength, a certification exam can also be a tool for further learning and future achievement.

In order to help further your growth and achievement in the Java programming language, Sun Educational Services provides a detailed list of objectives grouped by the section titles by which you have been scored. This list is of objectives is available on-line at the Sun Educational Services Web site at <http://suned.sun.com/usa.html>.

# Translations

This section provides English translations of a number of German documents from the Sections “Certificates” and “Letters of Recommendation”. Rather than have these documents translated by a human, I decided to use google translate. My rationale is that machine algorithms are (arguably) the most impartial of arbiters, and frankly, the results are actually quite good. Nevertheless, there were a few places where google got it wrong, and I have used the footnotes to offer my corrections. The translations were retrieved from google on the 10. November, 2016—please feel free to compare these results with your own.

## Belsoft Reference Letter (1/2)

Belsoft IT Solutions

[Mr]<sup>1</sup>

John Brush  
Karl Stauffer-Str. 3  
8008 Zürich

Zürich, 1 December 2013

### FINAL CERTIFICATE (This [certificate]<sup>2</sup> is [uncoded]<sup>3</sup>)

John Brush worked as a “software architect” in our company from 1 February 2013 until the end of November 2013.

Mr. Brush carried out technical and conceptual work for our customers in the fields of UML design and consulting in the areas of enterprise architectures.

Mr. Brush has very good professional qualifications, worked extremely concentrated and was able to cope with a great [workload]<sup>4</sup>.

We were extremely satisfied with the achievements of Mr. Brush. His attitude to superiors, employees, suppliers and customers was always very pleasant, [respectful]<sup>5</sup> and responsive.

Due to a reorganization at one of our customers, the project for which we had hired Mr. Brush was stopped without our guilt and without regard for the very good results achieved. Since we could not offer any other, suitable job within Belsoft AG, we have unfortunately decided to dissolve the employment relationship.

Belsoft AG | IT Solutions  
Russenweg 26 | CH-8008 Zürich | Telephone 044 388 13 31 | Fax 044 381 16 11  
info@belsoft.ch | www.belsoft.ch

---

1 *Lord* [sic]

2 *testimony* [sic]

3 *uncodulated* [sic]

4 *pensum* [sic]

5 *correct* [sic]

## Belsoft Reference Letter (2/2)

We would like to sincerely thank Mr. Brush for his work and commitment, and we hope that Mr. Brush will soon find a suitable position. We wish him all the best for his professional and private life.

With kind regards

Andreas Ponte  
Head of Belsoft Applications

www.belsoft.ch

Ideartis AG  
contact Technoparkstrasse 1 8005 Zürich  
[mail] Hegibachstrasse 76 8032 Zürich  
phone 01 420 16 94  
fax 01 420 16 93  
mobile 079 437 40 76

Zürich, 19.09.2002

**Certificate of Employment**

John Brush, born August 8, 1972, was employed by ideartis as a Java and J2EE developer from April 2000 to August 2002. In August, ideartis had to dismiss most employees for economic reasons.

Mr. Brush was Lead Architect and Senior Developer in four J2EE projects at various clients.

- The first project was for the engineering company AWK Group. It was about the realization of a web front end for a project management system with JSP and Tomcat. A general JDBC connection pooling module was implemented.
- The second project was the security concept and implementation in an EJB architecture for the custody application at ZKB (Zürcher Kantonalbank). The technologies used were Entrust PKI, IBM WebSphere, smartcards and digital signature.
- The third project was the security architecture of the Credit Suisse e-commerce platform. In this project, which was strategically important for Credit Suisse, the challenge was to extend the limitation of the EJB security while keeping the extensions for the developer transparent. The solution with client and server interceptors was not only elegant but also very efficient in the complex clustered environment of the e-commerce platform.
- The last project was for the integrator Steria. The task was to support difficult problems in the use of J2EE with Silverstream in Profitline's customer relationship management system (SwissLife). The technologies and methodologies used were XDoclets, Java 1.4 dynamic proxies, load balancers, network analysis, low-level debugging and reverse engineering.

Mr. Brush always showed high motivation and an exact and rational way of working. He has always solved the tasks entrusted to him to our fullest satisfaction. During the projects and during our informal discussions on Fridays, he was able to convincingly communicate his opinion clearly and based on technical conditions and logical steps. He is able to solve difficult problems by [delving]<sup>1</sup> into technical details without [losing the overview]<sup>2</sup>.

Mr. Brush is an easygoing and reliable person. He has shown that he integrates himself quickly into the team and unfolds his performance with a clear [division of labor]<sup>3</sup> in the team. [He]<sup>4</sup> can make an essential contribution within a development group. I would hire him [again]<sup>5</sup> at any time. I am delighted to be able to recommend Mr. Brush to all IT groups and I wish him all the best for the future, success and satisfaction in his professional career.

Dr. Alain Hsiung, CEO  
Ideartis Inc.

1 *deepening* [sic]

2 *the overview to lose* [sic]

3 *workspace* [sic]

4 *It* [sic]

5 Omitted by google.

Swiss Life  
Insurance and Pension  
Company

[Head Office]<sup>1</sup>  
General Guisan [Quai]<sup>2</sup> 40  
Postfach 2831, 8022 Zürich  
Telephone 01/284 33 11  
Fax 01/284 45 00

Zürich, 15 October 2002

**[LETTER OF REFERENCE]<sup>3</sup>**

Mr John Brush, born on 8 August 1972, citizen of the United States[, worked]<sup>4</sup> for our company from 1 November 1998 to 30 April 2000. For the period up to 28 February 1999, we refer to the interim report of the same date.

Mr. Brush worked as an application developer in the organization unit ["IT Sales"]<sup>5</sup> of the Corporate Division Switzerland and was responsible for the following main tasks:

- \* Collaboration in the evaluation of CRM (Customer Relation Management), in particular in the in-depth analysis of the technical aspects and dependencies
- \* Significant co-operation in the analysis, design and implementation of one of the prototypes in the evaluation (this approach followed an EJB-centered design)

Mr Brush also had the following special tasks:

- \* Introduction and operation of VMware, an application for simulating various operating systems in parallel on a computer (Unix, NT, etc.), which can be used both in the development and testing of distributed applications (Unix, NT [; this was also used for the cost effective simulation of a network with firewall]<sup>6</sup>)
- \* Introduction and configuration of Doxygen for the automatic generation of java-doc-like documents from [source code]<sup>7</sup>

We have [come to know]<sup>8</sup> Mr. Brush as a very [resilient, persevering and self-reliant]<sup>9</sup> employee. He undertook his tasks with an above-average commitment, developed his own ideas with good imagination and implemented them in a practice-oriented manner. We would like to emphasize his exact and careful workings as well as his quick perception. Mr. Brush always carried out the assignments assigned to him reliably and conscientiously, both qualitatively and quantitatively, to our full satisfaction.

1 *Directorate* [sic]

2 *torture* [sic]

3 *TESTIMONY* [sic]

4 The original German is *war ... tätig* which, in this context, means *was employed*, however google seems to have thought that the *was* related to *citizen of the United States*; I thus removed it for clarity. Also, google made two sentences out of one, which I corrected with the comma here.

5 *Informatik Vertrieb* [sic] (google simply didn't translate this term)

6 *Cost - effective simulation of a network with Firewall used* [sic]

7 *program texts* [sic]

8 *met* [sic]

9 *solid, persistent and independent* [sic]

## Swiss Life Reference Letter (2/2)

We appreciated Mr. Brush as a sincere, [open to criticism]<sup>1</sup> and [willing to compromise]<sup>2</sup> personality with excellent professional knowledge and a high level of specialist knowledge. He deepened his know-how in the EJB-centered design [through]<sup>3</sup> self-study and [carried on discussions with consulting experts]<sup>4</sup> at a high level. His behavior towards superiors and employees was always friendly and [respectful]<sup>5</sup>.

Mr. Brush left our company on April 30, 2000 at his own request, which we regret very much. We thank him for his valuable services and wish him all the best for his professional and private future.

Rentenanstalt / Swiss Life

Thomas Vetterli  
Senior Vice President  
Head of IT Retail

Christine Staub  
[Human Resource]<sup>6</sup>

1 critical [sic]

2 *compromising* [sic]

3 in [sic]

4 led the expert discussions [sic]

## 5 correct [sic]

<sup>6</sup> Google omitted this, probably confused by the layout.

STUDERUS TELECOM AG  
[Grabenstrasse 8]<sup>1</sup>  
8606 Nänikon  
[Switzerland]<sup>2</sup>  
Phone 01 905 50 00  
Fax 01 905 50 01

**CERTIFICATE OF EMPLOYMENT**

We hereby certify that Mr. John Brush, born on 8.8.72, from USA, from 1.9.92 until 30.9.94 in our company was active.

Mr. Brush worked in our company half a day as a computer technician. His duties included:

- Checking of telecommunication equipment and repairs
- Check the entire sequence of repairs and replacements
- Edit Eprom orders

We have got to know and appreciate Mr. John Brush as a duty-conscious and enthusiastic employee. He worked [quickly]<sup>3</sup> and reliably. Mr. Brush is a trustworthy and loyal employee who has always taken full advantage of the company's interests to our fullest satisfaction.

He distinguished himself by an exceedingly great willingness to serve, and was, as far as circumstances required, willing to [work overtime]<sup>4</sup>. All work transferred to him was completed properly.

Due to an internal restructuring we are unfortunately forced to dissolve the employment relationship with Mr. Brush. We would like to thank Mr. Brush for the good cooperation in our company and wish him all the best for his future career.

[Meilen]<sup>5</sup>, 14.10.94

Frank Studerus

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1 *Edit Business Information* [sic] (no idea how google came up with that).

2 *United States* [sic] (again, no idea how "Switzerland" became "United States").

3 *speditively* [sic]

4 *spend time* [sic]

5 *Miles* [sic] (*Meilen* is German for *Miles*, however, here *Meilen* refers to the town of that name in Canton Zürich).

O R G A  
Project Management AG  
Leubergstrasse 75, CH-8615 Wermatswil/Uster  
Phone 01/941 58 00 Fax 01/941 58 06

Work certificate  
Wermatswil / Uster, 30.9.1991  
\*\*\*\*\*

We are pleased to confirm that Mr. John Brush, born 8.8.72 from 1.11.90 until 30.9.91 was employed as a junior programmer.

Mr. Brush has considerably deepened and professionalized his existing personal computer and programming skills.

He was able to expand his knowledge of **MS-DOS, UNIX, Clipper** on theoretical courses and to apply the newly learned [skills]<sup>1</sup> in practice.

He has also become familiar with the important points for professional application such as **modular programming, documentation, functional tests**.

On the basis of corresponding specifications, Mr. Brush has programmed applications for a **customer information system, working time recording / project monitoring and various special modules**.

We [came to know]<sup>2</sup> Mr. Brush as a very **[respectful]<sup>3</sup>, clean and honest employee**. Both his superiors, as well as his work colleagues, appreciated his **calm, friendly attitude**.

In spite of his youthful age, Mr. Brush has carried out the work, which [was given to him]<sup>4</sup>, very **[self-reliantly]<sup>5</sup>, conscientiously, carefully, and with all his efforts**.

Mr. Brush leaves us at [his]<sup>6</sup> own request, free from all obligations. We regret the departure of this promising employee and wish him all the best.

Orgaprojekt Management AG

H.E. Osswald

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1 The German word *Gelernte* means literally *learned* and can be used as a noun; in English, you would say something like *learned skills*.

2 *met* [sic]

3 *correct* [sic]

4 *he had transgressed* [sic]

5 *spontaneously* [sic]

6 *our* [sic]

**John Brush**

born August 8, 1972, in the USA, has [successfully completed]<sup>1</sup> the

**Further education course**  
**CTI Entrepreneurship Business**  
**Creation**

at the ZHAW School of Management and Law in cooperation with Technopark© Academy.

Number of credits according to ECTS: 3

Zürich, 13 September 2013

Head of Division General Management      The [Instructor]<sup>2</sup>

Stephan Loretan      Jacques Hefti

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1 Omitted: in the original document, *successfully completed* (German: *erfolgreich abgeschlossen*) follows the words *Technopark Academy*, but I presume that google got confused because the sentence is split across multiple paragraphs.

2 Headmaster [sic].