Benoit Vallée

Software Engineer

C, C++, Node.js, Backend Developer

Summary

I am a problem solver and software engineer. I have experience working on large scale projects in international environments (lastly at Amazon Web Services in Vancouver). I speak English and French.

I care deeply about creating fast, secure and reliable products. I generally have a good intuition allowing me to quickly identify growing issues and to drive them to resolution.

I am self-motivated and I am comfortable with learning new technology.

I am especially interested in projects having a positive social or cultural impact (music, education, social organization...).

Skills Matrix

Skill	Rating
C, C++	●●●●●
Node.js	●●●●●
Redis	●●●●○
PHP	●●●●○
SQL	●●●●●
C# .NET	●●●○○
Android	●●●○○
Go	●●○○○
Python	●●○○○
Computer Security	●●●●○
Sysadmin	●●●●○

Experience

Oct. 2013 – Nov. 2014

Software Engineer
Android, Java

[Amazon Web Services](#)
Vancouver, Canada

In a large team operating from 3 different locations (US and Canada), I've worked on Amazon Silk Web Browser. Amazon Silk is a cloud-accelerated web browser used by several millions of daily users on Amazon devices (Android-based tablets and phones). It embeds a custom version of Chromium.

- Acquired Continuous Deployment, Android development and large scale development skills.
- Acquired leadership and communication skills in a massive multi-location multi-cultural environment.
- Improved Amazon Silk's stability, reliability, security, memory usage and responsiveness.
- Used my experience and intuition to pro-actively identify growing issues and drive them to resolution.
- Worked with other teams to improve the reliability of Amazon's build system, testing infrastructure, operating systems (Kindle Fire OS) and internal tools.
- Developed a cloud-based mechanism to dynamically switch Amazon Silk's User Agent based on websites characteristics (for compatibility purpose).
- Started the Amazon Silk Quality Focus Group: a group of engineers dedicating a part of their time to improve Silk's source code quality within the wider team.
- Created data visualizations based on gigabytes of crash reports: it allowed the team to root cause and fix 87% of our reported crashes in 3 days for one of the Amazon's flagship device.
- Discovered, root caused and fixed bugs, race conditions and security issues as part of a daily routine.

March 2013 - July 2013

Software Engineer
Node.js, Redis, Backend, Memcache

[TheBroth](#)
Melbourne, Australia
Perth, Australia

I was responsible for the scalability and reliability of a heavily optimized Node.js backend for real-time gaming (200,000+ daily users).

- Solved backend scalability and high reliability problems for several thousands of concurrent users.
- Profiled and optimized Node.js backend code (Smart OS, dtrace, FlameGraph).
- Worked with deployment (Puppet), monitoring (Cacti), caching (Memcache), replicated databases (Redis, postgresql) and network security.
- Created a live interface to interact with the running Node.js backend.
- Developed a monitoring system to quickly detect server anomalies.
- Created dashboards to visually analyze financial, user and server metrics.
- Contributed back to Node.js: https://github.com/joyent/node/pull/5470

March 2011 - June 2012

Software Engineer
C++, Qt, Backend, UI

[Keyyo](#)
Paris, France

Keyyo is a telecommunication company delivering 95,000 VoIP phone lines within their own infrastructure. Annual revenue: 22,000,000 €.

I was responsible for creating a new product: a Skype-like software for businesses, capable of managing SIP calls, LDAP contacts and Cisco phones. Using C++ with Qt, I released this software on Windows, Linux and Mac OS.

- Developed "Switchboard" using C++ with Qt: a phone calls and contacts management software.
- Tested and debugged the product.
- Analyzed network traces (Wireshark) to detect failures on SIP protocols implementations.
- Worked with the Quality of Service department to get feedbacks from customers.
- Worked with the Network team to detect and fix network capacity issues.
- Load tested the product and the SIP infrastructure (servers, routers, firewalls).
- Worked with graphical designers to build a professional branded product.
- Provided live demonstrations to the board of directors.
- Wrote user and developer documentations.
- Worked with other developers to integrate the product into our deployment architecture.
- Released a stable version running on Windows, Linux and Mac OS.
- Trained final users and gathered feedbacks to improve the user experience.
- Wrote R&D reports to raise money from the government (subsidies).
- Developed PHP scripts to manage mobile numbers portability using APIs from service providers.

Sept. 2008 – Sept. 2012
Teacher Assistant
C, C++, Unix
Epitech
Paris, France

Epitech is a private institution of higher education in computer science having 12 campuses throughout France and partnerships around the world, including with the RMIT (Melbourne).

In a team of fifteen active Teacher Assistants, we were responsible to teach programming to Bachelor's degree students.

- 2008-2011 C/Unix Teacher Assistant for 1st and 2nd year students.
- 2009-2012 C++/Object-Oriented Programming Teacher Assistant for 2nd and 3rd year students.

- Taught programming languages and Unix system to Bachelor's degree students.
- Explained programming concepts to classes of ~90 students.
- Tested and evaluated individual and team students' work.
- Participated to recruitment sessions to hire new Teacher Assistants to join the team.
- Wrote an exam testing knowledge of ~1000 students each years.
- Developed a cheat detection system comparing work of ~1000 students multiple times a day.

Dec. 2009 - July 2010
Software Engineer
C# .NET, SQL, Backend
Eureka Technology
Paris, France

Eureka Technology develops software solutions dedicated to the delivery industry.

In a team of 5 developers we worked on Dispatch, a C# .NET business software used in the delivery industry. Soon I was responsible for building a new product: an SQL Server real-time geospatial service to track deliveries.

- Added features to a C# .NET real-time solution dedicated to the delivery industry.
- Built a prototype, developed, tested, debugged and released a scalable real-time geospatial service.

The geospatial service worked as a standalone MSSQL Server instance processing inputs concurrently. It was accessible through web service interfaces written in C# .NET.

| May 2009 - Oct. 2009 | **Software Engineer Intern**
C, C++, Embedded | int13
Paris, France |

int13 is a gaming company developing its own augmented reality middleware and targeting iPhone, Android, Symbian, Bada, WP8 and Nintendo 3DS.

I was responsible for bringing the company libraries and games developed in C and C++ on the Symbian OS platform.

- Developed a C++ Hardware Abstraction Library for Symbian OS devices.
- Ported and debugged low-level C gaming libraries to Symbian OS devices.
- Tested performance and optimized C/C++ gaming libraries.
- Enabled early detection of programming mistakes on compilation (gcc).
- Automated the company building system to automatically target multiple platforms and dependencies.

| Sept. 2008 - Sept. 2009 | **Teacher Assistant in**
Game Development
C, C++, Nintendo DS | Epitech
Game Dev Lab
Paris, France |

The Epitech Game Development Laboratory receives 50 to 80 students each year, who develop games on PC, XBox360, PSP and Nintendo DS platforms.

I was responsible for providing tools and teaching C/C++ Nintendo DS programming to 2nd year students.

- Added features and fixed bugs on a C graphical library for Nintendo DS (µLibrary).
- Provided a C/C++ SDK for developing Nintendo DS homebrew games.
- Created a C++ multiplayer shoot'em up game on Nintendo DS (Keris: trailer, github).

| July 2007 - Dec. 2007 | **Software/Web Developer intern**
PHP, MySQL, JavaScript, Java | Violet (Nabaztag)
Paris, France |

Violet was an innovative company that launched Nabaztag in 2005, a Wi-Fi enabled ambient electronic device capable of reading emails, weather forecasts, music, books, etc.

With a senior web developer, we worked on a new version of a PHP/jQuery e-commerce web site. Soon, I was responsible for developing a new version of the PHP/MySQL administration panel while interacting with other departments to understand their needs. I also provided expertise in managing MySQL databases.

- Built a new front-end for a PHP e-commerce web site using CSS and jQuery.
- Communicated with other departments to understand their needs.
- Created a new administration panel with PHP, jQuery, MySQL, Flash.

- Added features to monitor and manage thousands of Nabaztags and services.
- Wrote scripts to automatically detect and fix issues on multi-gigabytes replicated MySQL databases.
- Restructured and optimized MySQL databases' schema.
- Wrote migration scripts for MySQL databases.
- Improved RFID support of the PHP framework OpenNab for TV demonstrations.
- Developed a Java program simulating the behavior of multiple Nabaztags.
- Load tested and tweaked settings of ejabberd servers.

Since 1998   **Technology Enthusiast**   Hobby
                                   C, C++, C#, Node.js, PHP, Python, Go, …

I build projects since 1998.

- 2011 Developed a multi-currency bank account manager in Excel/VBA.
- 2010 Audited and improved security of PHP web sites.
- 2009 Written a multithreaded HTTP web server in C++ (RFC-compliant).
- 2008 Developed Keris: a shoot'em up video game for Nintendo DS.
- 2008 Participated in the Project Hoshimi contest with an IA bot written in C# (Microsoft Imagine Cup).
- 2006 Launched an indie music platform allowing artists to freely distribute their music.
- 2005 Created a C# music playlist manager to synchronize songs between multiple devices.
- 2005 Hosting Linux servers for personal purposes (web hosting, email server, backups).
- 2003 Reverse-engineered a serial port protocol from my old NEC phone to backup SMS.
- 2002 Managed an IRC channel to help others to learn programming.
- 2001 Developed mIRC scripts and bots for simplifying communication and channel management.
- 1999 Launched a freeware repository web site with 1000+ monthly unique visitors.

Education

Master of Information Technology in Software Engineering   Epitech
September 2009 - September 2011   Paris, France
Graduated: October 2011

Bachelor of Computer Science   Epitech
September 2006 - September 2009   Paris, France
Graduated: October 2009

Epitech is a private institution of higher education in computer science having 12 campuses throughout France and partnerships with universities around the world (UC Berkeley, RMIT, …).

The first 3 years (Bachelor degree) are focused on an immersive programming environment using C, ASM, PHP and C++. Involving concurrent projects, individual and team working, time management and strict deadlines.

The last 2 years (Master degree) are focused on professional experience, advanced technical concepts and business skills.