 **Olivier BRUCHEZ, Software Engineer / Scala Developer**

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# Professional Experience

May 2012 -

present

**Software engineer / Scala developer at Metamedia Center, EPFL**

Developed and maintained a digital asset management (DAM) database for the Montreux Jazz Digital Project **(Scala, Play, Akka, Slick, Elasticsearch, Lift)**. Some sub-projects I've worked on include:

* Ingestion solution based on Archivematica **(Akka, Slick, S3, Google APIs)**
* REST API for iPad and web applications **(Akka, Elasticsearch, JSON)**
* Artist contracts / music rights management and search
* Photo import tool using fuzzy string searching
* Integration with a smart playlist generator
* Various import/export and integrity check tools
* Various audio/video compression/processing tools (ffmpeg, custom algorithms, etc.)
* Integration of various algorithms (perceptual hashes, affinity propagation clustering, etc.)

Aug. 2011 -

Mar. 2012

**Software engineer / Scala developer at E-mmunizer / Groowin**

* Developed a highly scalable web platform based on cutting-edge technology **(Scala, Lift, Cassandra, PostgreSQL, S3, jQuery)**

Sep. 2009 -

Jul. 2011

**Software engineer / consultant at ELCA Informatique**

*Mar. 2011 - Jul. 2011*

* Maintained and tested an unforgeable code printing framework (embedded part), as well as a layout editor for different printers **(Python, C#, C++)**

*Sept. 2009 - Feb. 2011 (SIX Card Solutions)*

* Developed a web application to allow multiple teams to synchronize their activities during the deployment of a release into the production environment **(Java, Google Web Toolkit / GWT)**
* Debugged and partially rewrote a risk management (fraud detection) module previously developed by an intern **(C++, SQL, large databases)**
* Developed and maintained various online/high-availability and offline electronic payment applications using Scrum (agile method), UML, and test-driven development (TDD) **(Java, C++, SQL, large databases)**

Jul. 2008 -

Aug. 2009

**Software engineer / consultant (self-employed)**

* Added a REST interface to an already existing web application and developed the corresponding Java client API **(REST, Java, Orbeon Forms, XForms)**
* Added features to an XForms-based web application for network audit reports management

**(Orbeon Forms, XForms, XQuery, XSLT, eXist)**

* Developed a desktop application to launch E-Prime psychological tests/games for children with test results analysis/upload **(C++, data analysis)**

Apr. 2002 -

Jun. 2008

**Software engineer at VisioWave / GE Security**

Developed and maintained the company cross-platform software (core services and SDK) for real-time acquisition, transmission, storage, and retrieval of digital audio/video streams for security applications. Worked on more than 30 releases, service packs, and hotfixes. Fixed hundreds of customer/QA-reported bugs.

* Designed and implemented a hardware-agnostic XML-based health monitoring framework
* Tested and maintained an H.264 codec (rate control and entropy coding modules)
* Developed a video/audio rendering component, using pixel shaders for deinterlacing and color conversion, including MPEG-2 PS parsing (DirectX, HLSL, assembly language)
* Designed and implemented a distributed alarm/event management system
* Developed a timeline component for video/audio storage display/playback (GUI)
* Maintained a web-based configuration tool (PHP, SQL)

**Software Skills**

**Languages Scala, Java, JavaScript**, C++, Python, PHP, C#, XQuery, XSLT **Frameworks Play, Akka, Slick**, Elasticsearch, Archivematica, Lift, Orbeon Forms **Databases** MySQL, SQLite, PostgreSQL, Cassandra, Neo4j

**Dev. tools** Git, IntelliJ, SBT, Eclipse, Maven

**General** Web development, audio/video, archiving, digital preservation, functional programming (FP), object-oriented programming (OOP), distributed/real-time programming, machine learning

**Academic Projects**

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| 2001 - 2002 | Distributed video archival and streaming system using CD/DVD jukeboxes **(C++, parallel computing,** |
|  | **video streaming, 3D, drivers)** |
| 2001 | Utility for converting between ICC profiles and XML **(Java, XML, color management)** |
| 2000 - 2001 | Exploration of new types of Turing neural networks **(C++, ANN, evolutionary algorithms)** |
| 2000 - 2001 | Control software for an MC68331-based mobile robot **(C, assembly language)** |
| 2000 | DNA sequence classification using artificial neural networks **(Lisp, bioinformatics, ANN)** |

**Other Projects / Personal Projects**

2000 - present KeithJarrett.org, an unofficial website about jazz pianist Keith Jarrett

2002 - 2010 Database for Civil Protection / Protection of Cultural Property organization

2000 Self-learning Connect Four software using neural networks and reinforcement learning

**Education**

1997 - 2002 **Master of Science in Computer Science (MS/CS)**

EPFL, Swiss Federal Institute of Technology, Lausanne, Switzerland

Optional courses: artificial intelligence (AI), artificial neural networks (ANN), bioinformatics, computer graphics, document engineering, natural language processing, pattern recognition, virtual environments

1992 - 1997 **Scientific Matura**

Collège de l'Abbaye de Saint-Maurice, Switzerland

**MOOCs / Reads**

Mar. 2017 “Big Data Analysis with Scala and Spark”, by Heather Miller #mooc

Oct. 2016 “Parallel programming” (Scala), by Viktor Kuncak & Aleksandar Prokopec #mooc Dec. 2015 “Functional Programming in Scala”, by Paul Chiusano and Rúnar Bjarnason #book

May 2014

Feb. 2014

“Machine Learning”, by Andrew Ng #mooc

“Play for Scala”, by Peter Hilton, Erik Bakker & Francisco Canedo #book

Dec. 2013 “Principles of Reactive Programming”, by Erik Meijer, Martin Odersky & Roland Kuhn #mooc Dec. 2013 “Scala in Depth”, by Joshua D. Suereth #book

# Language Skills

French (mother tongue), English (fluent), German (basic knowledge)

# Hobbies / Interests

Mountain hiking, music (jazz and more), reading, blogging, traveling, going to the theater/opera, meditation, science/maths, technology, astronomy, futurology, philosophy, Getting Things Done (GTD)