**OLIVIER BRUCHEZ**

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**Software Engineer / Scala Developer**

|  | Nationality: Swiss |  | Lausanne, Switzerland |  | +41 (0)79 783 92 39 |
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**PROFESSIONAL EXPERIENCE**

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**Software engineer / Scala developer | Cultural Heritage & Innovation Center, EPFL | May 2012 - present**

Developed and maintained a digital asset management (DAM) database for the Montreux Jazz Digital Project **(Scala, Play, Akka, Slick, S3, Lift)**. Other projects I've worked on include:

* Prototype for a distributed algorithm execution platform for musicology datasets **(Akka, Docker)**
* Preliminary work on the Verbier Festival archive (database check/import, etc.)
* Archivematica-based ingestion solution for the Claude Nicollier archive **(Akka, Slick, SQLite, S3, Google APIs)**
* REST API for iPad and web applications (metadata and audio/video streaming) **(Akka HTTP, Elasticsearch)**
* Integration of our artist/person database with Wikidata **(SPARQL, open linked data)**
* 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.)

**Software engineer / Scala developer | E-mmunizer / Groowin | Aug. 2011 - Mar. 2012**

Added features to an online commerce platform for local businesses **(Scala, Lift, Cassandra, PostgreSQL, S3)**

**Software engineer / consultant | ELCA Informatique | Sep. 2009 - Jul. 2011**

* Maintained an unforgeable code printing framework and a printer-agnostic layout editor **(Python, C#, C++)**
* Developed a web application to allow multiple teams to synchronize their activities during the deployment of a release into the production environment **(Java, GWT)**
* Partially rewrote a risk management (fraud detection) module developed by an intern **(C++, SQL)**
* Developed and maintained online/high-availability and offline electronic payment applications using Scrum, UML, and test-driven development (TDD) **(Java, C++, SQL)**

**Software engineer / consultant | Self-employed | Jul. 2008 - Aug. 2009**

* Added a REST interface to an existing web application and developed its Java client API **(Orbeon Forms, XForms, Java)**
* 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 psychology tests and analyze results **(C++, data analysis)**

**Software engineer | VisioWave / GE Security | Apr. 2002 - Jun. 2008**

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
* Designed and implemented a distributed alarm/event management system
* Developed a timeline component (GUI) for video/audio storage display/playback

**SOFTWARE SKILLS**

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| **Languages** | **Scala**, Java, JavaScript, Python, C/C++, PHP, C#, XQuery, XSLT |
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| **Frameworks** | **Play, Akka, Slick**, Elasticsearch, Archivematica, Orbeon Forms |
| **Databases** | MySQL, SQLite, PostgreSQL, Cassandra, Neo4j |
| **Dev. tools** | Git, IntelliJ, SBT, Eclipse, Maven |
| **General** | Backend/frontend development, audio/video, digital preservation, functional programming (FP), object-oriented programming (OOP), distributed/real-time programming, machine learning |

**BOOKS / COURSES**

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

**OTHER / PERSONAL PROJECTS**

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| 2000 - present | KeithJarrett.org, an unofficial website about jazz pianist Keith Jarrett |
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| 2002 - 2010 | Database for Civil Protection / Protection of Cultural Property organization |
| 2000 | Self-learning Connect Four software using neural networks and reinforcement learning |

**EDUCATION**

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| 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  **Projects**: distributed video archival and streaming system using CD/DVD jukeboxes, utility for converting between ICC profiles and XML, exploration of new types of Turing neural network, control software for an MC68331-based mobile robot, DNA sequence classification using artificial neural networks **(C/C++, Java, Lisp, assembly language, distributed computing, machine learning, evolutionary algorithms)** |
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| 1992 - 1997 | **Scientific Matura**  Collège de l'Abbaye de Saint-Maurice, Switzerland |

**LANGUAGE SKILLS**

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| French (mother tongue), English (fluent), German (basic knowledge) |
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**HOBBIES / INTERESTS**

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| Mountain hiking, running, music (jazz and more), reading, blogging, traveling, going to the museum/theater/opera, meditation, science/math, technology, astronomy, futurology, life extension/longevity, philosophy, Getting Things Done (GTD) |
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