

# Frédéric Dubouchet

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## RESUME OBJECTIVE

**Senior software engineer** in the **computer engineering** sector for more than 20 years, including at some of the biggest companies (**Nagra, CERN, Google**), the experience I have accumulated can provide solutions in embedded, big data, and machine learning to my future employer. I have been teaching **C++** at the bachelor and master level for about two years and find it enjoyable. With my experience and contacts, I can be a valuable addition to the school.

## EDUCATION

### HES-SO // MASTER

**MSE IN INFORMATION AND COMMUNICATION TECHNOLOGIES**

2011 - 2013 | Lausanne, CH

Thesis : (6 / 6) - Betatron tune measurement with the LHC damper using a GPU

### HES-SO // HEPIA

**BS IN COMPUTER SCIENCE**

2002 - 2005 | Geneva, CH

Thesis : (5.5 / 6) - 3D stereoscopy

### EPFL

**COMPUTER SCIENCE**

1997 - 1999 | Lausanne, CH

Unfinished - Founded of a company

### MATURITÉ

**TYPE S, SCIENTIFIQUE**

1997 | Geneva, CH

Grad. (74 / 90) - Swiss secondary school degree

## LINKS

Github:// [anirul](#)

LinkedIn:// [Frédéric Dubouchet](#)

## COURSEWORK

### MASTER

Artificial Intelligence + Practicum

Cryptography

Software Security

Optimizations

Fourrier and Wavelets

Web Data Mining

GPU computing

Cloud computing

### BASHELOR

Digital Signal Processing

Compilers + Practicum

Theory of Computation

Operating Systems

Databases

Virtual Machine + Practicum

Computer Graphics + Practicum

## EXPERIENCE

### CONTRACT WORK | CONTRACTOR

July 2020 - Now | Sion, CH

Work in the domain of (AI/ML), 3D graphics and Network.

- Toolset for Unreal Engine 4 (C++)
- Implementation of network protocol (C#/nat-pmp)
- Distributed computing and capturing hardware (C++/gRPC)

### ORIGINAL SCORE | FOUNDER, CEO

March 2019 - Now | Lens, CH

Realization of a game to be release on Steam

- Organizing with Editors and financial sector
- Managing a team of graphists and game designers

### GOOGLE | SOFTWARE ENGINEER

October 2015 - February 2019 | Zurich, CH

Working on Google Shopping from anti-spam to database

- Database writing for the Google Shopping group (C++/OpenCV/gRPC)
- Reviewing process for online automatic purchase (C++/Javascript/Java)
- Version checking system from online automatic purchase (C++/git/gRPC)

### IDIAP RESEARCH INSTITUT | SOFTWARE ENGINEER

August 2014 - August 2015 | Martigny, CH

Developer for research projects

- Teaching computer vision to researchers (C++/OpenCL/OpenCV)
- Robotic and computer vision projects (C++/OpenCL/CUDA/OpenCV)
- Automatic Speech Recognition (Python)

### EPFL - MOKASTUDIO | SENIOR SOFTWARE ENGINEER

February 2014 - July 2014 | Lausanne, CH

CTI project for a 3D animation and inverse kinematic application

- Writing a full forward scene graph (C++)

### CERN | SOFTWARE ENGINEER

May 2006 - December 2013 | Geneva, CH

Software and drivers for controlling custom hardware board in a realtime environment, on LynxOS and then Linux

- Leader for the Linac4 RF control system (C++)
- LHC RF Beam control: architecture, coordination, implementation (C++)
- ADT damper: architecture, coordination, implementation (C++/OpenCL)

### NAGRAVISION - KUDELSKI | SOFTWARE DEVELOPER

2000 - 2002 | Lausanne, CH

Content management and encryptions for digital television

- Porting the software from Win32 to Linux and TRU64 UNIX (C/C++)
- Multiplexer driver for digital television (C)

### ELEAF SARL | FOUNDER, SOFTWARE DEVELOPER

1999 - 2000 | Geneva, CH

Web development mostly backend

- COM objects for Web/ASP FTP, POP3, IMAP interfaces (C++)
- Multimedia Java Applets (Java)

## TEACHING

### SAE | CREATIVE MEDIA EDUCATION

September 2020 - August 2021 | Geneva, CH

- Beginner lecture (C++)
- How to implement a basic physic engine (C++)
- Computer Graphics (OpenGL/C++)
- Optimization (C++/OpenCL/CUDA/Assembly)

### EPAC | ÉCOLE PROFESSIONNELLE DES ARTS CONTEMPORAINS

September 2019 - July 2020 | Saxon, CH

- Game Engine technologies (C++/OpenGL/gRPC/Socket/...)
- Handling of Unreal 4 (C++/Blueprint)

### SAE | CREATIVE MEDIA EDUCATION

February 2019 - Now | once per month | Geneva, CH

- Game Engine technologies (C++/Socket/...)
- Handling of Unreal 4 (C++/Blueprint)

### SGA | SWISS GAME ACADEMY

August 2016 | July 2019 | Fribourg, CH

- Handling of Unreal 4 (Blueprint)

## RESEARCH

### CERN | GRADUATE RESEARCH

July 2013 - December 2013 | Geneva, CH

**Betatron tune measurement with the LHC damper using a GPU** with Prof. Paul Albuquerque and Dr. Wolfgang Höfle during my master thesis. A system to make realtime fourrier transform on GPU to be able to better react to instabilities in the LHC beam using the ADT damper. It was presented at the **IBIC 2013** conference in Oxford, UK.

### HEPIA | UNDERGRADUATE RESEARCH

Jan 2013 - Apr 2013 | Geneva, CH

A simple study of OpenCL and comparaisn with CUDA made for the Hepia. Implemetation of various algorithms using OpenCL, available on [github](#).

## SKILLS

### LANGUAGE | NATURAL

French	Mother tongue
English	Fluent
German	Rusted
Japanese	Beginner

### TECHNICAL | LANGUAGES & OS

- Over 100'000 lines
  - C
  - C++
- Over 10'000 lines
  - Assembly
  - C#
  - Java
  - JavaScript
  - Json
  - Protocol Buffers
- Over 1'000 lines
  - gRPC
  - $\text{\LaTeX}$
  - Lua
  - Python
  - XML/XSD
- Familiar
  - cmake
  - git
  - PostgreSQL
  - Unreal Blueprint
  - VCPKG
- OS
  - FreeBSD
  - Linux
  - macOS
  - Windows

## AWARDS AND PROJECTS

2001	Ping	32k game	C++,RayTracing	6 <sup>th</sup> at Mekka and Symposium
2002	El Loco Megabus	32k game	C++,OpenGL	1 <sup>st</sup> at Mekka and Symposium
2005	panoptriktikum	intro 4k	8Bit-Script	2 <sup>nd</sup> at Breakpoint
2006	Biolite	96k game	C++,DirectX	6 <sup>th</sup> at Breakpoint
2009	miniDHT	network	C++,protobuf	Distributed Hash Table (P2P)
2010	Biolite Reloaded	game	C++,Irrlicht	1 <sup>st</sup> at Buenzli
2012	MOLA Parser	research	C++	Parsing of NASA Mars Orbital Laser Altimetry
2014	See Mark	game	C++,Irrlicht	Epic Game Jam
2015	CPPS UE4	research	Blueprint	Multiscreen setup for use in an earthquake simulator
2015	Mirages	game	Blueprint	Global Game Jam
2015	Meow Zedong,...	game	Blueprint	Epic Game Jam
2016	Green Revenge	game	Blueprint	Epic Game Jam
2017	Maneki Neko,...	game	Blueprint	Epic Game Jam
2018	Isotops	game	C++,Blueprint	Nordic Game Jam
2018	Meow Zedong 2,...	game	C++,Blueprint	Epic Game Jam
2019	Mini Epic City Builder	game	C++	Epic Game Jam
2020	Frame	engine	C++,OpenGL	3D Engine (Bloom, PBR, SSAO, Deffered Rendering,...)
2022	Unreal Mine Sweeper Plugin	demo	C++	Mine sweeper as a plugin for Unreal 4.