

# 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, microservices, and machine learning. 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 company.

## 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 Eleaf Sarl

### 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

Fourier 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 networks

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

### ORIGINAL SCORE | FOUNDER

March 2019 - Now | Lens, CH

Create a game to 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 | 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 backend development

- 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

- 3D infographics and game 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 real-time Fourier transform on GPU to better react to instabilities in the LHC beam using the ADT damper. It was on display at the **IBIC 2013** conference in Oxford, UK.

### HEPIA | UNDERGRADUATE RESEARCH

Jan 2013 - Apr 2013 | Geneva, CH

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