Last Updated on 24th March 2022

Frédéric Dubouchet

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RESUME OBJECTIVE

Senior software engineer and team manager 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. In addition, 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 your 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](https://github.com/anirul)

LinkedIn:// [Frédéric Dubouchet](https://www.linkedin.com/in/fr%C3%A9d%C3%A9ric-dubouchet-b885621/)

# 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** | Senior Software Engineer

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 | Sion, CH

Create a game to release on Steam

* Negotiation with editors, contractors and financial sector
* Managing a team of contractors, graphists and game designers

**GOOGLE** | Software Engineer

October 2015 - February 2019 | Zürich, 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, management of a team (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](http://cds.cern.ch/record/1545785?ln=en) with [Prof. Paul](http://ch.linkedin.com/pub/paul-albuquerque/12/366/809) [Albuquerque](http://ch.linkedin.com/pub/paul-albuquerque/12/366/809) 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](http://www.ibic2013.org/) 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](https://www.hesge.ch/hepia/). Implementation of various algorithms using OpenCL, available on [GitHub](https://github.com/anirul/OpenCL_PA_2012).

# SKILLS

### **LANGUAGE** | Natural French C2 Mother tongue English B2 Fluent German B1 Rusted Japanese A1 Beginner

**TECHNICAL** | Languages

### Over 100’000 lines

* + C
  + C++
* Over 10’000 lines
  + C#
  + Java
  + JavaScript
  + Json
* Over 1’000 lines
  + Assembly
  + LATEX
  + Lua
  + Python
  + XML/XSD

**TECHNICAL** | Frameworks

### cmake

* FreeBSD
* git
* gRPC
* Linux
* macOS
* PostgreSQL
* Protocol Buffers
* Unreal Engine 4 / 5
* VCPKG
* Windows

AWARDS AND PROJECTS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2001 | [Ping](http://www.pouet.net/prod.php?which=5691) | 32k game | C++,RayTracing | 6th at Mekka and Symposium |
| 2002 | [El Loco Megabus](http://www.pouet.net/prod.php?which=5652) | 32k game | C++,OpenGL | 1st at Mekka and Symposium |
| 2005 | [panoptriptikum](http://www.pouet.net/prod.php?which=16393) | intro 4k | 8Bit-Script | 2nd at Breakpoint |
| 2006 | [Biolite](http://www.pouet.net/prod.php?which=24578) | 96k game | C++,DirectX | 6th at Breakpoint |
| 2009 | [miniDHT](https://github.com/anirul/miniDHT) | network | C++,protobuf | Distributed Hash Table (P2P) |
| 2010 | [Biolite Reloaded](http://www.pouet.net/prod.php?which=55711) | game | C++,Irrlicht | 1st at Buenzli |
| 2012 | [MOLA Parser](https://github.com/anirul/MOLA_parser) | research | C++ | Parsing of NASA Mars Orbital Laser Altimetry |
| 2014 | [See Mark](https://www.epicgamejam.com/games/sea-mark) | game | C++,Irrlicht | Epic Game Jam |
| 2015 | [CPPS UE4](https://github.com/anirul/CppsTest) | research | Blueprint | Multiscreen setup for use in an earthquake simulator |
| 2015 | [Mirages](https://globalgamejam.org/2015/games/mirages) | game | Blueprint | Global Game Jam |
| 2015 | [Meow Zedong,...](https://www.epicgamejam.com/games/meow-zedong-great-helmsman-future-chairman-urinal-leap-forward) | game | Blueprint | Epic Game Jam |
| 2016 | [Green Revenge](https://www.epicgamejam.com/games/greens-revenge) | game | Blueprint | Epic Game Jam |
| 2017 | [Maneki Neko,...](https://www.epicgamejam.com/games/meow-zedongs-battle-royale-maneki-neko-wool-party-ocean-deathmatch) | game | Blueprint | Epic Game Jam |
| 2018 | [Isotops](https://anirul.itch.io/isotops) | game | C++,Blueprint | Nordic Game Jam |
| 2018 | [Meow Zedong 2,...](https://www.epicgamejam.com/games/meow-zedong-great-helmsman-future-chairman-urinal-leap-forward) | game | C++,Blueprint | Epic Game Jam |
| 2019 | [Mini Epic City Builder](https://www.epicgamejam.com/games/mini-epic-city-builder) | game | C++ | Epic Game Jam |
| 2020 | [Frame](https://www.github.com/anirul/Frame) | engine | C++,OpenGL | 3D Engine (Bloom, PBR, SSAO, Deferred Rendering,...) |
| 2022 | [Unreal Mine Sweeper Plugin](https://github.com/anirul/UnrealMineSweeperTool) | demo | C++ | Mine sweeper as a plugin for Unreal 4. |