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Frédéric Dubouchet

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RESUME OBJECTIVE

As a **senior software engineer** and **team manager** in the computer engineering sector for over 20 years, I have accumulated extensive experience working with some of the biggest companies in the industry, including **Nagra**, **CERN**, **Google**, and **Logitech**. My experience in embedded systems, big data, microservices, and machine learning has equipped me with the skills necessary to provide effective solutions to complex problems.

In addition to my technical expertise, I have also been teaching **C++** at both the bachelor and master level for nearly two years. I find teaching to be a rewarding experience and enjoy sharing my knowledge to help students develop their skills.

With my extensive experience and industry contacts, I believe that I can be a valuable addition to your company.

EDUCATION

HES-SO // MASTER

Master of Science and Engineering | Information and Communication Technologies

2011 - 2013 | Lausanne, CH

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

HES-SO // BACHELOR

Bachelor of Science | Computer Science

2002 - 2005 | Geneva, CH

Thesis : (5.5 / 6) - 3D stereoscopy

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

LOGITECH | Principal real-time graphic Engineer

May 2022 - April 2023 | Lausanne, CH

Produce a 3D stereoscopic view of a person from 3D point cloud (using OpenGL/Vulkan)

- Advice on 3D GPU and visualization (CUDA/OpenGL/Vulkan)
- Implementation of a software (C++/OpenGL/Vulkan)

CONTRACT WORK | Senior Software Engineer

March 2019 - February 2021 | Various locations

Work in the domain of (AI/ML), 3D graphics, and networks, In various companies including Proton, InVision, Original Score, ...

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

GOOGLE | Software Engineer

October 2015 - February 2019 | Zürich, CH

Working on Google Shopping from anti-spam to database

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

IDIAP RESEARCH INSTITUTE | Software Engineer

August 2014 - August 2015 | Martigny, CH

Developerforresearch projects

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

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 (leadership, C++)
- LHC RF Beam control: implementation (C++)
- ADT damper: architecture, 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 (C/C++)
- Multiplexer driver for digital television (C)

SKILLS

LANGUAGE | Natural

- French C2 Mother Tongue
- English B2 Fluent
- German B1 Rusted
- Japanese A1 Beginner

TECHNICAL | Languages

- Very good knowledge
  - C++
  - C
- Good knowledge
  - C#
  - Java
  - JavaScript
  - Json
- Can also use
  - Assembly
  - Latex
  - Lua
  - Python

TECHNICAL | Frameworks

- CMake / git
- Conan / VCPKG
- CUDA
- DirectX
- gRPC / Protocol Buffers
- OpenAI GPT
- OpenCV
- OpenCL / OpenGL / Vulkan
- PostgreSQL
- Unreal Engine 4 / 5

TEACHING

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

- Beginner Lecture (C++)
- Game Engine technologies (C++/Socket/...)
- Handling of Unreal 4 (C++/Blueprint)
- How to implement a basic physic engine (C++)
- Computer Graphics (OpenGL/C++)
- Optimization (C++/OpenCL/CUDA/Assembly)

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 Hepia. Implementation of various algorithms using OpenCL, available on GitHub.

AWARDS & PROJECTS

• 2001	Ping	32k game	C++	6th at Mekka and Symposium
• 2002	El Loco Megabus	32k game	C++,OpenGL	1st at Mekka and Symposium
• 2005	Panoptriptikum	intro 4k	8 Bit-Script	2nd at Breakpoint
• 2006	Biolite	96k game	C++,DirectX	6th at Breakpoint
• 2009	miniDHT	network	C++,protobuf	Distributed Hash Table (P2P)
• 2010	Biolite Reloaded	game	C++,Irrlicht	1st 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	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	Isotopes	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, Deferred)
• 2022	Unreal Minesweeper	demo	C++	Minesweeper as a plugin for Unreal 4.