

CYRILLE FAVREAU

## End-2-End Scientific Visualization Expert

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I am an end-to-end dedicated professional advancing science and technology, specializing in the design and implementation of high-performance systems for scientific visualization. Recognized as an excellent communicator, I simplify complex concepts. As an advocate for the fusion of art and science, I contribute to innovative projects, producing high-quality media that showcases the synergy between technology, creative expression, and science.

## EXPERIENCE

### Scientific visualization architect, Science communication EPFL - Blue Brain Project

📅 2014-Ongoing

📍 Geneva, Switzerland

- Responsible for the architecture, design, implementation, and comprehensive documentation of visualization systems, ensuring robust performance and scalability.
- Responsible for leading major presentations of the Blue Brain Project to the general public and VIPs.
- Introduced AI at all levels of the development process: Science understanding, code writing, code reviews, image quality enhancement, and GPT assistant to use the software.
- Creator, architect, and visionary behind Brayns, the official visualization platform for the Blue Brain Project, recognized as a strategic project.
- Developed the Blue Brain BioExplorer, an enhancement of Brayns that broadens visualization capabilities to various scientific fields, including particle physics, virology, nuclear fusion, molecular systems, and more.
- Designed and implemented high-performance algorithms on heterogeneous architectures (CPU and GPU), for visualizing large-scale models on giant screens, bringing interactive ray-tracing to computational neuroscience.
- Key figure in major exhibitions such as Centre Pompidou, EPFL, and CCCB.
- Contributed to over 20 scientific publications in the field of computational neuroscience.
- Featured in prominent publications including Harvard Brain Magazine, NVIDIA Spotlight, and Intel showcase.
- Acknowledged for exceptional science communication and popularization efforts, instrumental in making complex scientific concepts accessible.
- Played a pivotal role in collaborations with CERN and EPFL's experimental museology, driving innovative visualization projects.
- Produced an educational film on the Glucose-COVID19 hypothesis, contributing to public understanding and scientific discourse.

### Technical Architect - Vice President

#### Lombard Odier Darier Hentsch & Cie

📅 2004-2014

📍 Geneva, Switzerland

- Team lead of native libraries in the technical architecture team.
- Lecturer, effectively communicating and explaining new technical solutions.
- Ensured interoperability across various technology stacks.
- Designed low-level libraries and integrated new packages.
- Provided support for development, finding pragmatic solutions to complex problems.
- Recognized as an expert in multi-core optimization and high-performance distributed computing, particularly on heterogeneous architectures.
- Delivered solutions and support tailored to the specific needs of the client.

## MOST PROUD OF



### Achievement

Created a successful process from the ground up for producing high-quality and high-fidelity media and interactive experiences in computational neuroscience.



### Diversity of experiences

From the music industry in London to telecommunications in France, banking and finance in Geneva, and scientific visualization at EPFL.



### Health

Weekly swimming marathon of 15 to 20 km

## STRENGTHS

- Technical expertise and communication skills
- Energy and Enthusiasm
- Focus and engagement. I deliver!

## SIDE PROJECTS

### Quantum of Sol-R

#### Creator

📅 2012-2023

- A sophisticated real-time graphics engine utilizing CUDA/OpenCL, leveraging principles of quantum physics.

### Montreux Jazz Festival

#### Drummer

📅 2013

📍 Montreux

- Performed with the Canettes Blues Band.

# EXPERIENCE

Team leader and technical architect for SFR

SOPRA Group

2001-2004 Rennes, France

- As the team leader and technical architect for SFR:
- Spearheaded C++, UNIX, and WebSphere projects.
- Provided leadership and development support.
- Demonstrated strong expertise in C++ and a deep understanding of HP-UX and Solaris platforms.
- Extensively utilized Oracle databases to drive project success.

Developer Support Engineer

eXcelon Corporation

2000-2001 Theale, United-Kingdom

- Development support to distinguished clientele, including prominent African and European companies like AXA, SwissRe, Rhenus, and others.
- Demonstrated expertise across a wide spectrum of technologies, including C++, Visual Basic, Java, XML, and XSLT.
- Worked proficiently across various platforms, including Windows, Linux, and UNIX.
- Maintained a customer-oriented focus, delivering tailored solutions to precisely meet the unique needs of each client.
- Ensured projects were successful, efficient, and characterized by high client satisfaction.

Software Developer

Counterpoint Systems Limited

1998-2000 Camden Town, United-Kingdom

- Maintenance of a robust royalty management system for the music industry.
- Proficiently utilized Delphi and Oracle technologies.
- Contributed to the creation of a system that played a pivotal role in tracking and managing royalties within the dynamic and intricate landscape of the music business.

Software Developer

Thalassa Ingenierie Informatique

1996-1998 Nantes, France

- Developed and maintained an accounting system at Thalassa Ingénierie Informatique.
- Adeptly employed Delphi and Oracle technologies to ensure seamless and up-to-date software operation.

Soldier

Armée de terre Française

1995-1996 Angoulême, France

- Military service at 1er Régiment d'Infanterie de Marine

Support Engineer Trainee

Microsoft France

1995 Les Ulis, France

- Provided expert assistance and guidance to users of Microsoft Access.

# EDUCATION

Bachelor of Science

Computer Science

1993-1995 Wrexham, Wales

Diplome Universitaire Technologie

Informatique

1991-1993 Nantes, France

ITIL v3 Qualification

Service management

2012 Geneva, Switzerland

# LANGUAGES

French

English

Spanish

# REFEREES

Dr. Felix Schürmann

Director of the Computing Division and Co-Director of the EPFL Blue Brain Project, Senior HPC technologist at Google, Adjunct Professor at EPFL

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Dr. René Brun

Senior Physicist, Honorary member at CERN

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Dr. Emmanuelle Logette

Research Scientist at EPFL

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IT Team Lead/Trading and Operation

Lombard Odier Groups

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# SKILLS

Science communication

System designParallel architectures

Scientific visualizationC++CUDA

GPGPUHigh-performance algorithms

Project managementTech lead

Ray-tracingVirtual RealityUnity