

# Fabrice Mayran de Chamisso

## Scientist & Software engineer

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A.I. PhD with engineering and physics background and 10 years C++ programming experience  
*looking for a challenging position leveraging interdisciplinary methods and interactions between physical and virtual reality*

### Core domain experience, education and achievements

- 2013 - **PhD in Artificial Intelligence, university of Paris-Saclay & CEA LIST** – Developed (C/C++) a software architecture to integrate Planning, Navigation, Localization and Mapping (SLAM) for mobile robots with resource constraints safely performing complex missions in environments of arbitrary complexity.
  - Experience of a large research organization (CEA).
- 2016 - **Implemented the approach on a Pioneer robot running on ROS with a Kinect 1 camera and MEMS compass.** Work notably published at the IJCAI 15 conference, patent filed.
- 2010 - **Master of Engineering, Ecole Centrale Paris (now CentraleSupélec)** – obtained with highest level of distinction. Emphasis on fundamental and applied physics as well as cross-functional abilities.
  - Including 6 months in TU Darmstadt, Germany, studying Quantum Field Theory and programming evolutionary processes on multi-GPU architectures in a multicultural team.
- 2013 - **Including long research internship simulating femtosecond light modulation in a micrometric photonic crystal with the aim of obtaining an all-optical switch operating well above 10 GHz.**
- 2005 - **Advanced knowledge of C & C++** – Including high-performance low-level optimized scientific programming, (massively) parallel architectures (GPU/CUDA), metaprogramming, design patterns, modern C++, middlewares including ROS and real-time 3D (OpenGL 3+). Developing mainly with Visual Studio.
  - Created a massively parallel Finite Differences Time Domain (FDTD) code to simulate ultrafast optics
  - Created a game engine from scratch (ongoing development, 30'000 lines of code)
- Advanced knowledge of computer architectures** – From ASICs to User Interfaces, Windows and Linux.
- Mastery of CAD, graphics design and scientific software** – Matlab, Comsol Multiphysics, ability to produce models for 3D printing (SpaceClaim, ...), as well as 2D (The Gimp) and 3D (Blender) visuals and movies or websites (HTML5/CSS).

### Transdisciplinary experience, education and achievements

- 2010 - **M.Sci in nanotechnologies, Ecole Centrale Paris / Paris XI** – Extensive knowledge of Mathematics and Physics for well-founded transdisciplinary approaches.
  - **Knowledge of a large number of other scientific fields** – Including automation, genomics, ...
  - **Management experience** – directed two multi-day artistic events. Coordinated up to 25 people.
  - **Knowledge of economics** – treasurer of an association. Theoretical knowledge acquired at Centrale Paris.
  - **Hands-on experience and theoretical knowledge of intellectual property law** – holding a patent on methods developed during the PhD. Theoretical knowledge acquired at Centrale Paris.
  - **Experience of science popularization** – given multiple conferences on technology and arts.
  - **Experience of teaching** – including 128 hours teaching software & optics to graduates and postgraduates.
  - **Experience of prototyping technological products** – notably built a RC FPV quadcopter.
  - **Speaking French as mother tongue, fluent (scientific) English** (TOEFL 623/677, several peer-reviewed papers as well as PhD thesis written in English) **and good German** (6 months in the country).