Bérenger Bramas

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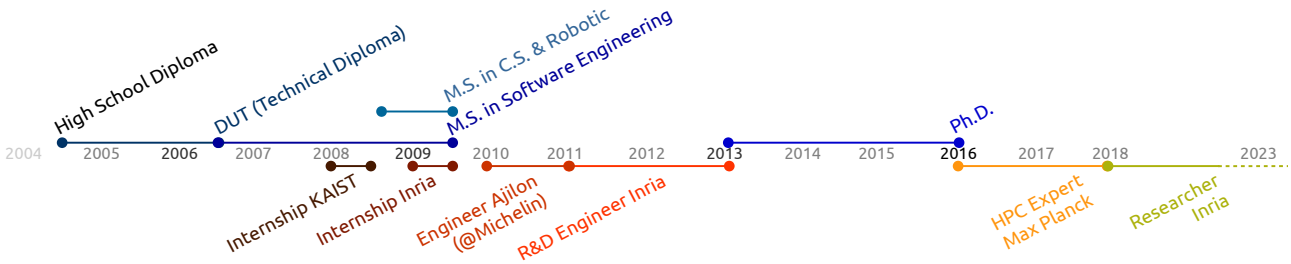
berenger.eu
Aged 38 - French citizenship
Married, three children

Research scientist and R&D engineer (HPC/C++)

Overview



[Education] [Experiences] [Languages] [Skills] [Publications] [Software] [Teaching]

Education

2016 Ph.D. in Computer Science, Bordeaux University & Inria, Bordeaux, France.

In partnership with Airbus Group. Title: Optimization and Parallelization of the Boundary Element Method for the Wave Equation in Time Domain. Committee: George Biros, Olivier Coulaud, Pascal Havé, Stephane Lanteri, Raymond Namyst, Guillaume Sylvand, Isabelle Terrasse, and Richard Vuduc.

2009 Master's Degree in Software Engineering - *Diplôme d'Ingénieur option Génie Logiciel* - ISIMA (ISIMA is a Computer Science Engineering College), Clermont-Ferrand, France, Class Rank 4/28.

2009 Master's Degree in Computer Science and Robotic (Speciality Research) - *Master Recherche en Informatique option Modèles, Systèmes, Imagerie, Robotique* - University Blaise-Pascal, Clermont-Ferrand, France.

2006 D.U.T. (Two-year Technical University Degree) in Computer Science and Embedded Systems, University Auvergne, Clermont-Ferrand, France, Class Rank 2/31.

Professional Experience

2018/now **Perment research scientist**, Inria, France
Research activitities with significant implementation work.

2016/2018 **Postdoc HPC Expert**, Max Planck Computing and data facility (MPCDF), Garching, Germany
Research and development on a protein simulation application, in partnership with the Theoretical Biophysics team from MPI Frankfort. Using : HPC (MPI,OpenMP), C++, molecular dynamics, Monte Carlo. Research and development on a turbulence simulation application, in partnership with the Theory of Turbulent Flows team from MPI Goettingen. Using : HPC (MPI,OpenMP), C++, FFTW/HDF5, particle tracing.

2011/2012 - 2 years **R&D Software Engineer**, Inria, HiePACS Team, Bordeaux, France

Research and development on ScalFMM a state-of-the-art parallel FMM library which let's customize the parallel algorithms or the underlying mathematical kernels. Design advanced parallelization strategies in shared and distributed memories, and a runtime-based FMM with accelerators (later extended during the PhD). Using HPC, parallel programming (MPI,OpenMP), GPU, C/C++, StarPU.

2010 - 9 months **Software Engineer**, Ajilon, Consulting at Michelin R&D department, Ladoux, France

Design and implementation of a GUI application to interface a tire simulation library. Using C++, Qt, Windows.

2009 - 6 months **Started a startup**

I wanted to create a startup to provide an efficient and highly optimized IA library. Finally, did not go to the end.

2009 - 6 months **Intern, machine learning and sound/image processing**, Inria, FLOWERS team, Bordeaux, France

Research and development to teach objects to a humanoid robot (sound/image associations). The sounds are processed by a spectral transform (RASTA-PLP) and the images by an extraction algorithm and local descriptors/features. Using C++, Qt, Matlab, OpenCV and OpenSURF, Windows.

2008 - 5 months **Intern, software tools for robotics**, TCL (Telerobotics and Control Laboratory), KAIST (Korea Advanced Institute of Sciences and Technology), Daejeon, South Korea

Design a sound system to increase emotional expression impact in human-robot interaction. Research and development to incorporate easily a sound system in any robot. Development of a GUI application controlled by the network to play sound remotely. Using C++, Qt, Linux, Avr.

Languages

French Native speaker

English Fluent

Skills

Languages C++, C, Matlab, Asm, Python, notions of: SQL

Methodologies Object Analysis, Parallel & High-Performance Computing, GPUs, Programming on Micro-controller, Image Processing, Deep Learning (implementation)

IDE/Tools MPI, OpenMP, VTune, DDT/GDB, CMake, Git/Gitlab, Qt, OpenCV, vectorization, BLAS/LAPACK/SCALAPACK, FFTW, LibNuma, HDF5, Docker

Publications

View the list online **berenger.eu** or Google scholar.

Software

View the list online **berenger.eu**.

Teaching

2019/ongoing Compilation and Performance, Master 2 in Scientific Computing (CSMI), Université de Strasbourg

2018/ongoing Compilation, Master 1 in Computer Science, Université de Strasbourg

2013/2015 Enseirb/IPB - Algorithms and hierarchical data structures, C programming, System programming