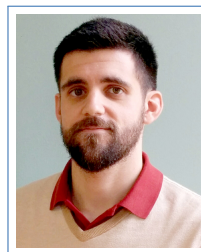


# Adrien Cassagne

*Ph.D. student in High Performance Computing*

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30 years old



## Technical skills

Langages C/C++ (OpenMP, MPI, CUDA, OpenCL, Pthreads, AVX/NEON), Fortran.  
English Fluent in a professional environment.

TOEIC : 765

## Experience

October 2017 **Ph.D. student**, *University of Bordeaux, Inria, IMS (Bordeaux)*.

- to present
- Research area on the improvement of the software implementations of error correcting codes.
  - Provision of an Open-source software: <https://aff3ct.github.io>.

March 2015 **CDD**, *University of Bordeaux, Inria, IMS (Bordeaux)*.

- to September 2017
- Participation in the research activities at the Inria and IMS laboratories on the optimization of digital signal correction algorithms.
  - Development of a generic, efficient and parallel simulation chain for error-correcting codes.

February 2014 **Mission**, *CINES (Montpellier)*.

- to February 2015
- Involvement into the PRACE project (Partnership for Advanced Computing in Europe). Implementation of an hybrid OpenMP/MPI approach on a CFD code (**JAGUAR**).
  - Participation to ISC'14 (Leipzig, Germany) and SC'14 (New Orleans, United States) as an attendee.

April 2013 **Internship period and mission**, *CERFACS (Toulouse)*.

- to january 2014
- Implementation and optimization of an high-order CFD method (code **JAGUAR**):
- CPU solver rewriting: 30% overall performance improvement.
  - Use of GPU accelerators (Nvidia Tesla K20c, Tesla M2090): porting of the solver in CUDA, achieve a speed-up of 30 compared to a single CPU core.
  - Multi GPU code implementation (with MPI): achieve a speed-up of 50 with 64 GPUs.

## Education

2010 – 2013 **Master's degree in Computer Science with honours**, *University of Bordeaux*, **High Performance Computing** speciality.

## Communications and publications

December 2014 **Training**, *Optimization of computational codes*, 4 days.

- to december 2017
- Realization of the *Optimization* training at CINES (training given in English).
  - Training carried out four times (in 2014, 2015, 2016 and 2017).

January 2018 **Courses**, *ENSEIRB-MATMECA engineering school*, 35 hours.

- to may 2018
- Introduction to networks (17h30), 1st year of engineering school.
  - TCP/IP applications (17h30), 2nd year of engineering school.

## Major Publications:

- A. Cassagne, O. Aumage, D. Barthou, C. Leroux, and C. Jégo. MIPP: a portable C++ SIMD wrapper and its use for error correction coding in 5G standard. In *WPMVP*, Vösendorf/Wien, Austria, 2018. ACM
- A. Cassagne, O. Aumage, C. Leroux, D. Barthou, and B. Le Gal. Energy consumption analysis of software polar decoders on low power processors. In *EUSIPCO*, Budapest, Hungary, 2016. IEEE
- A. Cassagne, T. Tonnellier, C. Leroux, B. Le Gal, O. Aumage, and D. Barthou. Beyond Gbps turbo decoder on multi-core CPUs. In *ISTC*, Brest, France, 2016. IEEE
- A. Cassagne, B. Le Gal, C. Leroux, O. Aumage, and D. Barthou. An efficient, portable and generic library for successive cancellation decoding of polar codes. In *LCPC*, Raleigh, USA, 2015. Springer
- A. Cassagne et al. JAGUAR: a new CFD code dedicated to massively parallel high-order LES computations on complex geometry. In *AERO*, Toulouse, France, 2015