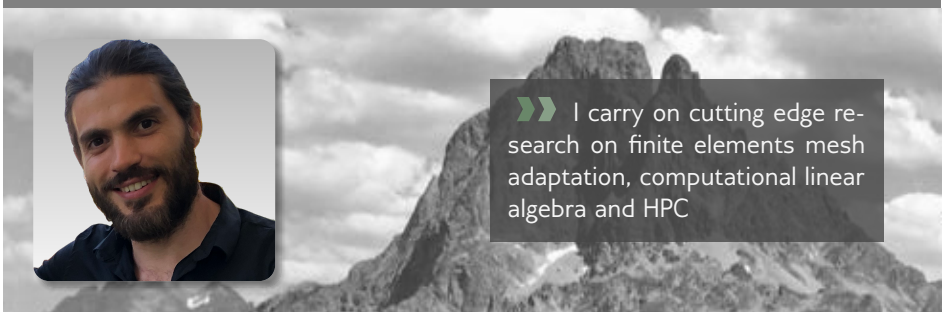
VINCENT DARRIGRAND



I carry on cutting edge research on finite elements mesh adaptation, computational linear algebra and HPC

CONTACT

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RESEARCH INTERESTS

Finite Element Method
Numerical Linear Algebra
High-Performance Computing
Mesh Adaptivity
Goal-Oriented Adaptivity
Domain Decomposition
Structural Mechanics
Wave Propagation # Geophysics

ACADEMIC ACHEIVEMENTS

10 Scientific publications

17 international congress

1 Mini-symposium

TRANSVERSAL SKILLS

Research and Development

Scientific writing

Scientific presentations

Team Work

Fast Learner

TECHNOLOGIES

`Python, C/C++, Fortran`

`PETSc, MUMPS` `MPI-OpenMP`

`Git` LaTeX

`scikit-learn` `TensorFlow`

`HTML, CSS`

OPERATING SYSTEMS

LANGUAGES

French: Mother tongue

English: C1 certification

Spanish: C1 certification

Status

Ph.D. in Applied Mathematics, specialized in Finite Elements Methods, Mesh Adaptivity and High Performance Computing.

Experience

2020 - 2022 — IRIT-ENSEEIHT-CNRS, Toulouse, France
Post-Doctoral Researcher

- Consulting on sparse direct solvers for the european project `EOCOEII`,
- Performance improvement of Domain Decomposition methods using recent features of sparse direct solver.
- Experimentation on large supercomputers coupling `MUMPS`, `HPDDM`, and `PETSc`

2019 - 2020 — Cerfacs,Toulouse, France
Post-Doctoral Researcher

- Collaboration with EDF R&D on iterative linear solvers for saddle-point problems applied to structural mecanics,
- Design of an inexact inner-outer strategy for Golub-Kahan Bidiagonalization.
- Prototyping in Python and implementation in `PETSc` (`C`).

2017 - 2019 — University of the Basque Country & Basque Center for Applied Mathematics, Bilbao
Post-Doctoral Researcher

- Design of a novel hp-mesh adaptive method for hierachical finite elements,
- Implementation of the hierachical data-structure and adaptative strategy
- Maintainer of the in-house finite elements library p`FEM` (`Fortran`).

2013 - 2017 — University of the Basque Country & University of Pau
Predoctoral Researcher

- Novel Goal-Oriented p-mesh adaptive method for Helmholtz equation applied to Geophysics.

2014 - 2015 — University of Pau, France
Temporary Assistant Teacher and Researcher

- Teaching statistics for undergraduate students.

Education

2013 - 2017 — University of the Basque Country, Spain & University of Pau, France
Ph.D in Applied Mathematics

- Dissertation: *Goal-Oriented Adaptivity using Unconventional Error Representation*
- Supervisors: Prof. David Pardo (Bilbao, Spain) and Prof. Hélène Barucq (Pau, France)

2010 - 2011 — University of Toulouse, France
Master degree in Mathematics

- Applied Analysis, Modelisation, Scientific Computing

2010 — France
"Agrégation de Mathématiques"