

## CONTACT

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 LinkedIn  HAL  orcid

## RESEARCH INTERESTS

# Finite Element Method

# Numerical Linear Algebra

# High-Performance Computing

# Mesh Adaptivity

# Goal-Oriented Adaptivity

# Domain Decomposition


# Structural Mechanics

# Wave Propagation # Geophysics

## ACADEMIC ACHIEVEMENTS

 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  L<sup>A</sup>T<sub>E</sub>X  HTML, CSS

 scikit-learn  TensorFlow

## OPERATING SYSTEMS



## LANGUAGES

 French: Mother tongue

 English: C1 certification

 Spanish: C1 certification

## HOBBIES



# VINCENT DARRIGRAND



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

## ➤➤ Status

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

## ➤➤ Experience

2020 - 2022

IRIT-ENSEEIH-CNRS, Toulouse, France

### Post-Doctoral Researcher

- Consulting on sparse direct solvers for the european project EOCOIEII,
- 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 mechanics,
- 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 hierarchical finite elements,
- Implementation of the hierarchical data-structure and adaptative strategy
- Maintainer of the in-house finite elements library *pFEM* (Fortran).

2013 - 2017

University of the Basque Country & University of Pau

### Predocctoral 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