VINCENT DARRIGRAND

CONTACT

Toulouse, France

+33 6 63 48 84 25

vincent.darrigrand@gmail.com

vincentdarrigrand.github.io

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 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 `HTML, CSS`

`scikit-learn` `TensorFlow`

OPERATING SYSTEMS

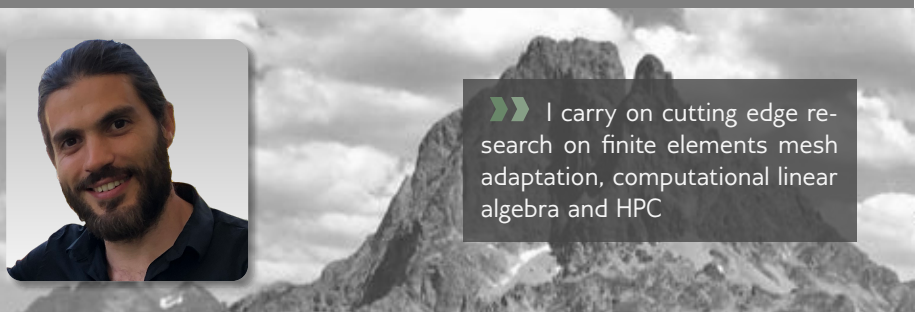
LANGUAGES

French: Mother tongue

English: C1 certification

Spanish: C1 certification

HOBBIES



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-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"