Rafael Galleze

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SCIENTIFIC INTERESTS

Calculus of variations

Optimization under constraints, optimal control, geodesics, eikonal equation, elasticity.

Lagrangian and hamiltonian mechanics

Hamiltonian systems, celestial mechanics.

Fluid mechanics

Euler and Navier-Stokes equations, conservation laws, entropy.

FORMATION

Master - Mathematics and interactions **Sep. 2021 – Jun. 2023**

Program Analysis, Partial Differential Equations, Probability *University of Bordeaux*

Dont notamment :

- Tools for the analysis of (non-)linear PDE
  - Applications to fluid dynamics, Leray and Kato's theorems, paradifferential calculus, anisotropic/inhomogeneous N-S.
  - Spectral theorem and applications.
- Semigroup theory and control.
- Harmonic analysis, Calderon-Zygmund operators, Paley-Littlewood theory.
- Reading seminary on an introduction to microlocal analysis, pseudo-differential operators.

Bachelor's Degree in Mathematics **Sep. 2019 – May 2021**

Program Fundamental Mathematics, Semesters 3 to 6 *University of Bordeaux*

Ingineering School **Sep. 2018 – Mar. 2019**

Professional cooperative engineering training *CESI, Angoulême, France*

CPGE (preparatory classes for engineering school contests) **Sep. 2014 – May. 2016**

Program Mathematics Physics, option Computer Science *Lycée La Martinière Monplaisir, Lyon, France*

PROFESSIONAL EXPERIENCE

Research Internship **March 1st, 2023 – June 8th, 2023**

Internship (under the supervision of Mathieu Colin) *Institut Mathématique de Bordeaux, France*

- Research Internship. Orbital stability of standing waves for a nonlinear Maxwell-Schrödinger system.
- Master's thesis : https://rafael-galleze.emi.u-bordeaux.fr/pdf/Memoire.pdf

Voluntary Initiation Internship to Research **Mar. 2021 – Jul. 2021**

Trainee *University of Bordeaux, France*

- Initiation Internship to Research. Study of shock behaviours in partial differential equations.

Short term jobs **Jan. 2017 – Jul. 2017**

Temporary worker *(Lyon, France)*

Private lessons **Feb. 2015 – Jun. 2015**

Help to homework and study, mathematics and physics, highschool and first Bachelor's Degree levels *Lyon, France*

SKILLS

Languages: french (native), english (Fluent. TOIEC score : 965).
Programming languages: Python (Intermediary. Libraries matplotlib, scipy, numpy).

OTHER INTERESTS

Sport: Vovinam Viêt Võ Đao (martial art, 12 years of practice).
Arts: Music composition for short films, painting, wood-carving.
Popular science: to adjust to any type of audience in order to convey the ideas of mathematics and physics concepts. Set aside the technicalities.