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ERIC NEIVA

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PROFESSIONAL EXPERIENCE

- ***Postdoctoral researcher*** – Dr. Hervé Turlier laboratory — 01/11/21 – Present
  Centre Interdisciplinaire de Recherche en Biologie, Collège de France, CNRS — Paris, France
- ***Postdoctoral researcher*** – Prof. Santiago Badia laboratory — 08/10/20 – 31/10/21
  International Centre for Numerical Methods in Engineering, CIMNE — Barcelona, Spain
- ***Predoctoral researcher*** – Profs. Santiago Badia and Michele Chiumenti laboratories — 16/04/16 – 07/10/20
  International Centre for Numerical Methods in Engineering, CIMNE — Castelldefels, Spain

EDUCATION

- ***Ph.D. in civil engineering*** — 07/10/20
  Universitat Politècnica de Catalunya — Barcelona, Spain
  Large-scale tree-based unfitted finite elements for metal additive manufacturing
- ***M.Sc. in numerical methods in engineering*** — 21/10/16
  School of civil engineering, Universitat Politècnica de Catalunya — Barcelona, Spain
- ***B.Sc. and M.Sc. in civil engineering*** — 16/06/15
  School of civil engineering, Universitat Politècnica de Catalunya — Barcelona, Spain
- ***B.Sc. and M.Sc. in mathematics*** — 23/07/14
  School of mathematics and statistics, Universitat Politècnica de Catalunya — Barcelona, Spain

PUBLICATIONS

8. S. Badia, EN, and F. Verdugo, Robust high-order unfitted finite elements by interpolation-based discrete extension, *Computers & Mathematics with Applications*, vol. 127, p. 105-126, 2022.
7. S. Badia, EN, and F. Verdugo, Linking ghost penalty and aggregated unfitted methods, *Computer Methods in Applied Mechanics and Engineering*, vol. 388, p. 114232, 2022.
6. S. Badia, A. F. Martín, EN, and F. Verdugo, The aggregated unfitted finite element method on parallel tree-based adaptive meshes, *SIAM Journal on Scientific Computing*, vol. 43, no. 3, pp. C203–C234, 2021.
5. EN and S. Badia, Robust and scalable h-adaptive aggregated unfitted finite elements for interface elliptic problems, *Computer Methods in Applied Mechanics and Engineering*, vol. 380, p. 113 769, 2021.
4. S. Badia, A. F. Martín, EN, and F. Verdugo, A generic finite element framework on parallel tree-based adaptive meshes, *SIAM Journal on Scientific Computing*, vol. 42, no. 6, pp. C436–C468, 2020.
3. EN, M. Chiumenti, M. Cervera, E. Salsi, G. Piscopo, S. Badia, A. F. Martín, Z. Chen, C. Lee, and C. Davies, Numerical modelling of heat transfer and experimental validation in powder-bed fusion with the virtual domain approximation, *Finite Elements in Analysis and Design*, vol. 168, p. 103 343, 2020.
2. EN, S. Badia, A. F. Martín, and M. Chiumenti, A scalable parallel finite element framework for growing geometries. Application to metal additive manufacturing, *International Journal for Numerical Methods in Engineering*, vol. 119, no. 11, pp. 1098–1125, 2019.
1. M. Chiumenti, EN, E. Salsi, M. Cervera, S. Badia, J. Moya, Z. Chen, C. Lee, and C. Davies, Numerical modelling and experimental validation in selective laser melting, Additive manufacturing, vol. 18, pp. 171–185, 2017.

ORGANISATION OF SCIENTIFIC EVENTS

2. **1st workshop on Finite Elements for Cell and Tissue Morphogenesis 2024** Fréjus, France, 9-13/09/24
1. **Minisymposium: Recent Advances in Numerical Methods for Mixed-dimensional PDEs** Vancouver, 22/06/24

SCIENTIFIC PRESENTATIONS

Invited talks at conferences.

5. **IX Biennal European Cell Mechanics Meeting** Marseille, France, 27/09/23
4. **XXII IACM Computational Fluids Conference** Cannes, France, 25/04/23
3. **IX International Conference on Computational Methods for Coupled Problems in Science and Engineering, COUPLED PROBLEMS 2021** Online event, 13/06/21
2. **XIV World Congress on Computational Mechanics and ECCOMAS Congress** Online event, 11/01/21
1. **II International Conference on Simulation for Additive Manufacturing** Pavia, Italy, 11/09/19

Selected talks at conferences.

7. **XVI World Congress on Computational Mechanics and PANACM Congress** — Vancouver, Canada, 22/07/24
6. **The 8th annual JuliaCon 2021** — Online event, 30/06/21
5. **I Monash workshop on Numerical Differential Equations and Applications** — Melbourne, Australia, 12/02/20
4. **IX International Congress on Industrial and Applied Mathematics** — Valencia, Spain, 16/07/19
3. **Additive Manufacturing Benchmarks 2018** — Washington, USA, 18/06/18
2. **I International Conference on Simulation for Additive Manufacturing** — Munich, Germany, 12/10/17
1. **XIV International Conference on Computational Plasticity** — Barcelona, Spain, 07/10/15

Invited talks at seminars.

4. **Department of Fluid Mechanics Seminar @ EEBE UPC** — Barcelona, Spain, 28/10/24
3. **COMMEDIA Seminar @ INRIA Paris** — Paris, France, 13/05/24
2. **InvBlastula ANR Meeting @ Institut de la Mer de Villefranche** — Villefranche-sur-Mer, France, 14/11/23
1. **Warwick Applied Mathematics Seminar @ Warwick University** — Coventry, UK, 25/11/22

AWARDS AND FELLOWSHIPS

- **Junior fellowship at the *Institut Mittag-Leffler*** — 27/08/25 – 12/12/25
  To attend the IML Fall Program 2025 in *Interfaces and Unfitted Discretization Methods*
- ***MSCA Postdoctoral Fellowship 2022. FEM4Embryo (Grant Id. 101105565)*** — 01/05/23 – 30/04/25
- ***2022 special doctoral award*** of the Universitat Politècnica de Catalunya (UPC) — 23/06/22
- ***Ajuts Joan Oró (FI-AGAUR) predoctoral fellowship*** — 01/04/17 – 31/03/20

PARTICIPATION IN INTERNATIONAL RESEARCH PROJECTS

- ***Computer Aided Technologies for Additive Manufacturing (CAxMan)*** — 01/09/15 – 31/08/18
  Funded under the programme H2020-EU.2.1.1. (Grant Id. 680448)
- ***Efficient Manufacturing for Aerospace Components USing Additive Manufacturing, Net Shape HIP and Investment Casting (EMUSIC)*** — 01/04/16 – 31/03/19
  Funded under the programme H2020-EU.3.4. (Grant Id. 690725)

SOFTWARE PROJECTS

- `Gridap.jl` ***contributor*** – github.com/gridap — Since 2020
- `FEMPAR` ***contributor*** – github.com/fempar — 2016 – 2020

TRAINING, SUPERVISION AND MENTORSHIP

- ***Martina Gatti*** – MSc student in Mathematical Engineering at Politecnico di Milano — Since 01/04/24
  Supervising her master thesis entitled *Modelling surface-bulk flows in migrating animal cells*.
- ***Journée Gridap.jl*** – Training session @ *INRIA Saclay* — Palaiseau, France, 01/12/22
- ***Pau Riera i Portillo*** – *Google Summer of Code 2021* student developer — 17/05/21 – 31/08/21
  I mentored his GSoC project Visualizing PDE approximations in Julia with Gridap.jl and Makie.jl.
- ***Balaje Kalyanamaran*** – *Google Summer of Code 2021* student developer — 17/05/21 – 31/08/21
  I mentored his GSoC project A fast finite element interpolator in Gridap.jl.
- ***Joan Josep Moya*** – Research intern at CIMNE — 16/04/16 – 22/09/17

SCIENTIFIC OUTREACH

- **Stand at *Fête de la Science: Science Fair*** – Collège de France. — Paris, France, 05/11/24
- ***Els Grans Interrogants de la Ciència: Conference series*** – Olot Cultura. — Olot, Spain, 19/04/24
- ***Déclics: Speed meetings with high-school students*** – Lycée Claude Monet. — Paris, 11/12/23
- ***Cartas com Ciência: Letter exchanges*** — São Tomé e Príncipe & Paris, 2022-23
- ***Skype a Scientist*** – Fisher Middle School. Ewing, New Jersey, USA. — Online event, 12/12/22
- ***Déclics: Speed meetings with high-school students*** – Lycée Gabriel Fauré. — Paris, 07/12/22
- ***Skype a Scientist*** – Pragati School. Ahmedabad, India. — Online event, 23/08/22
- ***V Interdisciplinary Meeting of Predoctoral Reasearchers, JIPI 2017*** — Barcelona, 09/02/17

REVIEW ACTIVITY

Additive Manufacturing, Computer-Aided Design and The Journal of Open Source Software (JOSS)