



Rodrigo Andre Zelada Mancini

Ph.D. in Applied Mathematics.

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Social Network —

- [linkedin.com/in/rodrigo-andre-zelada-mancini-b15553184/](https://www.linkedin.com/in/rodrigo-andre-zelada-mancini-b15553184/)
- github.com/RodrigoZelada

Skills —

- Relationship building
- Organized
- Persistent
- Collaborator
- Compromised
- Work to achieve goals.

Education

- 2013 – 2019 **Mathematical Engineer** University of Chile
- 2016 – 2018 **Additional Specialization: Minor in Astronomy** University of Chile
- 2019 – 2020 **Master in Engineering Sciences, minor Applied Mathematics** University of Chile
- 2021 – 2025 **Ph.D. in Applied Mathematics** University of Chile (cotutelle)
- 2022 – 2025 **Ph.D. in Applied Mathematics** UPPA (cotutelle)
Université de Pau et des Pays de l'Adour

Working Experience

- 2025 **Postdoc researcher** CEA Paris-Saclay
Application of a filtering method for parameter estimation of effective transmission conditions from ultrasonic data.
- 2021-2025 **PhD Thesis** University of Chile and UPPA
Shape optimization for a heat exchanger problem, with an asymptotic analysis to avoid a thin layer between two fluids and dealing with the Laplace-Beltrami operator. Supervisors: Carlos Conca (UCH), Fabien Caubet and Marc Dambrine (UPPA).
- 2020-2021 **Supply Chain Analyst** Fork Chile
Implementation of Machine Learning algorithms and Statistical tools to predict sales (Forecasting).
- 2019–2020 **Research and Thesis** University of Chile
Hydrodynamic model of the Red Tide in Quellón Bay.
Supervisor: Carlos Conca, Co-supervisor: Jorge San Martín.
- January 2017 **Professional Internship I** DAS (Department of Astronomy)
Maximum Entropy Method for radio astronomical synthesis image. Supervision: PhD. Simón Cassasus, PhD. Pablo Román and PhD. Axel Osses.
- January 2018 **Professional Internship II** DIM (Department of Mathematical Engineering)
A computational algorithm for the Legendre-Fenchel conjugate. Supervisor: PhD. Abderrahim Hantoute.
- January 2019 **Professional Internship III** CMM (Center for Mathematical Modeling)
Validation of numerical algorithms for the Stokes and the Navier-Stokes equations. Supervisor: PhD. Raúl Gormaz.

Awards

- 2018 Highlighted Student Facultad de Ciencias Físicas y Matemáticas
- 2021 Doctoral scholarship ANID - Chili's government

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About me

I am enthusiastic about applied mathematics and programming. More than a specific area, I am interested in real life problems; modelling problems and to solve them with mathematics as a tool. I am curious as a scientist, I am not afraid about new knowledge.

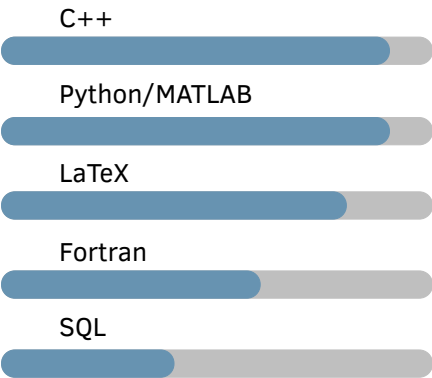
Interests

- Scientific computing
- Finite elements method
- Shape optimization
- Deep learning

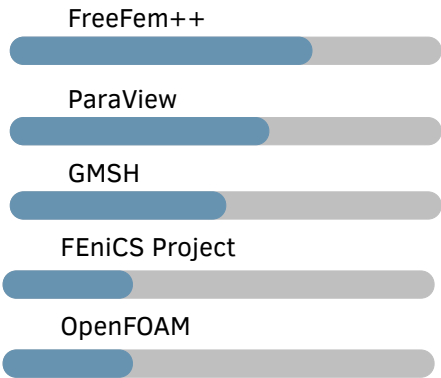
Languages

-  Spanish (Native)
-  French (DALF C1)
-  English (Cambridge B2)

Programming



Maths. and C.S. Softwares



Publications

2024 F. Caubet, C. Conca, M. Dambrine, R. Zelada (2024). **Shape optimization for a heat exchanger with a thin layer**. In Sixteenth International Conference Zaragoza-Pau on Mathematics and its Applications (Vol. 43, pp. 51-61).

2025 D. Capatina, F. Caubet, M. Dambrine, R. Zelada. **Nitsche extended finite element method of a Ventcel transmission problem with discontinuities at the interface**. ESAIM: Mathematical Modelling and Numerical Analysis, 2025. DOI: <https://doi.org/10.1051/m2an/2025014>.

2025 F. Caubet, C. Conca, M. Dambrine, R. Zelada. **How to Insulate a Pipe?**. Journal of Optimization Theory and Applications, 207(3):46, 2025. DOI: <https://doi.org/10.1007/s10957-025-02782-6>.

F. Caubet, C. Conca, M. Dambrine, and R. Zelada. How to Insulate a Pipe? J. Optim. Theory Appl., 207(3):46, 2025.

Submitted articles

2025 F. Caubet, C. Conca, M. Dambrine, R. Zelada. **Shape optimization with Ventcel transmission conditions: application to the design of a heat exchanger**. 2025. (hal-05033794).