



# Rodrigo Andre Zelada Mancini

Ph.D. candidate 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](https://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 – 2024 (expected) **Ph.D. student in Applied Mathematics** University of Chile (cotutelle)
- 2022 – 2024 (expected) **Ph.D. student in Applied Mathematics** UPPA (cotutelle)  
Université de Pau et des Pays de l'Adour

## Working Experience

- February 2022 - Now **PhD Thesis** University of Chile and UPPA  
Shape optimization for a heat exchanger problem, with a asymptotic analysis to avoid a thin layer between two fluids and dealing with the Laplace-Beltrami operator. Supervisors: Carlos Conca (UCH) and Marc Dambrine (UPPA). Co-supervisor: Fabien Caubet (UPPA).
- June 2020 - March 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)  
Maximumum 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.

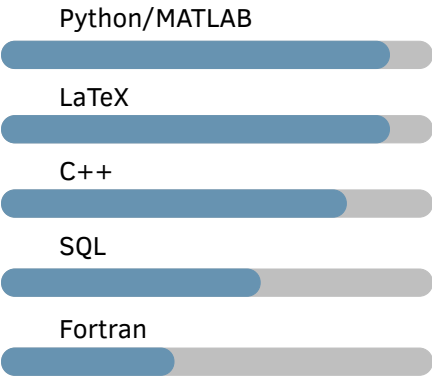
## Interests

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

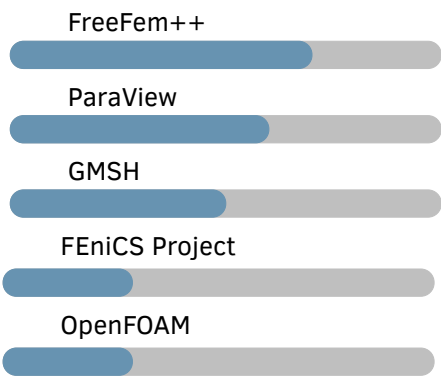
## Languages

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

## Programming



## Maths. and C.S. Softwares



## Publications

2024      Caubet, F., Conca, C., Dambrine, M., Zelada, R. (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).

## Submitted articles

2024      Daniela Capatina, Fabien Caubet, Marc Dambrine, Rodrigo Zelada. **Nitsche extended finite element method of a Ventcel transmission problem with discontinuities at the interface**. 2024. (hal-04587596).

2024      Fabien Caubet, Carlos Conca, Marc Dambrine, Rodrigo Zelada. **How to insulate a pipe?**, joint work with Fabien Caubet, Carlos Conca and Marc Dambrine. 2024. (hal-04772321)

## Articles in working process

2024      **Shape optimization for a heat exchanger with discontinuities at the interface**, joint work with Fabien Caubet, Carlos Conca and Marc Dambrine.