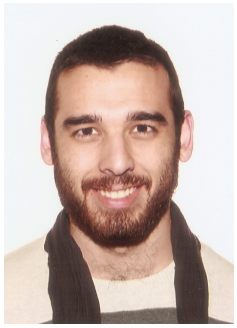

Albert Jiménez Ramos

Mathematician, PhD

Date of birth
October 5th, 1995

Residence
Barcelona, Spain

Mail
albert.jimenez.ramos@gmail.com

Webpage
albertjimenez.gitlab.io

Programming
Python ★★★★★
Julia ★★★★★
Matlab ★★★★☆
C++ ★★★☆☆
Bash ★★★☆☆
AMPL ★★☆☆☆

OS Expertise
Mac OS ★★★★☆
Linux ★★★★☆
Windows ★★★★☆

Languages
Spanish ★★★★★
Catalan ★★★★★
English ★★★★☆

Education

2018 - 2023 **PhD Student** — Barcelona Supercomputing Center (BSC), Barcelona
PhD student in the program of Applied Mathematics of the UPC. Mesh generation group. Thesis title: *Nodal distributions on the high-dimensional simplex for high-order interpolation and integration.* Advisors: Dr. Xevi Roca, and Dr. Abel Gargallo-Peiró.

2017 - 2018 **MSc - MAMME** — Faculty of Mathematics and Statistics (UPC), Barcelona
Master in Advanced Mathematics and Mathematical Engineering. I specialized in numerical mathematics, dynamical systems and their application to biology. Average grade: 9.25/10.

2013 - 2017 **BSc - Mathematics** — Faculty of Mathematics and Statistics (UPC), Barcelona
Degree in Mathematics in one of the most prestigious colleges in Catalonia. Both theoretical and applied courses are taught. Elective courses: Numerical methods for ODEs, Numerical methods for PDEs, Dynamical systems, Computational Biophysics, Control theory, Engineering optimization. Average grade: 7.27/10.

Publications

Click here to visit my Google Scholar profile.

2023 **Refining simplex points for scalable estimation of the Lebesgue constant**
SIAM International Meshing Roundtable Workshop
Peer-reviewed conference paper and conference presentation.

2022 **Interpolation of Subdivision Features for Curved Geometry Modeling**
Computer-Aided Design Journal
Peer-reviewed article.

2022 **Adaptive simplicial points to estimate the Lebesgue constant**
SIAM International Meshing Roundtable Workshop
Peer-reviewed research note and conference presentation.

2022 **Adaptive points to estimate the Lebesgue constant on the simplex**
9th BSC Doctoral Symposium 2021
Peer-reviewed research note and conference presentation.

2021 **Curved geometry modeling: interpolation of subdivision features**
8th BSC Doctoral Symposium 2021
Peer-reviewed research note and conference presentation.

2021 **Nodal interpolation of subdivision features for curved geometry modeling**
ICOSAHOM
Conference presentation.

2020 **Subdivided Linear and Curved Meshes Preserving Features of a Linear Mesh Model**
28th International Meshing Roundtable
Peer-reviewed article and conference presentation.

Course attendance

2023 **SIAM International Meshing Roundtable** Amsterdam, Low Countries

2021 **29th International Meshing Roundtable** Online

2021 **ICOSAHOM** Online

2020 **ELEMENT workshop** Online

2020 - 2022 **7th to 9th BSC Doctoral Symposium** Online

2019 **28th International Meshing Roundtable** Buffalo, NY, USA

June 2018 **JISD** Barcelona, Spain
16th School on Interactions between Dynamical Systems and Partial Differential Equations organized by the CRM.

Feb. 2018 **Metaheuristics Graduate Course - BGSMath** Barcelona, Spain

Jan. 2018 **DANCE** Logroño, Spain
15th RTNS (Recent Trends in Nonlinear Science) winter school in Dynamical Systems of the DANCE (Dinámica, Atractores y Nolinealidad: Caos y Estabilidad) Spanish network.

Projects

2018 **High-order mesh generation** Barcelona Supercomputing Center (BSC), Barcelona
Master's thesis on high-order mesh generation supervised by Dr. Abel Gargallo-Peiró and Dr. Xevi Roca. We presented a method to incorporate curvature to linear and high-order meshes when a target geometry is unavailable.

2017 **Biological model** Faculty of Mathematics and Statistics (UPC), Barcelona
Bachelor's thesis supervised by Dr. Marino Arroyo: theoretical and numerical study of a model describing the shape and motion of a cell. This model includes PDEs and is solved with a code developed by a doctoral student. I understood the model and found some interesting results.

Experience

July'23 - **Postdoctoral researcher** Barcelona Supercomputing Center (BSC), Barcelona
I am part of the dual-use technologies group. Currently, we are working on a fluid-structure problem, and I mainly focus on high-order optimization methods.

2017 - 2018 **Mathematical support and documentation** Wiris - Maths for more, Barcelona
Mathematical support and documentation for Wiris products.

2017 **Teaching support** Faculty of Mathematics and Statistics (UPC), Barcelona
Teaching support on Numerical for Linear Algebra (first course subject). Helping professors to grade exams, consultation with students and writing notes on LaTex.