

# Antolín Martínez Martínez

Location: Valencia, Spain

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## EXPERIENCE

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### PhD Student

Oct 2020 – Present

*Instituto de Ingeniería Mecánica y Biomecánica (I2MB) Universitat Politècnica de València (UPV)*

*Valencia, Spain*

- Thesis title: "Development of numerical methodologies for customized bioabsorbable implant design for reconstructive surgery".
- Collaboration in the development of the Cartesian Grid Finite Element Method (cgFEM) applied to medical images.
- Development of numerical methodologies to customize clinical treatments using optimization algorithms.
- Implementation of Machine Learning techniques to accelerate Topology Optimization processes.

### Research intern

Mar 2020 – Jul 2020

*Instituto de Ingeniería Mecánica y Biomecánica (I2MB) Universitat Politècnica de València (UPV)*

*Valencia, Spain*

- Training in the use and development of software based on FEM for prosthesis design.

## EDUCATION

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### Universitat Politècnica de València

*PhD in Production and Industrial Engineering*

Valencia, Spain

Oct 2020 – Present

### Universitat Politècnica de València

*Master's Degree in Aeronautical Engineering*

Valencia, Spain

Sep 2019 – Jul 2021

### Universitat Politècnica de València

*Bachelor's Degree in Aerospace Engineering*

Valencia, Spain

Sep 2015 – Jul 2019

## CONFERENCES

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- Martínez-Martínez, Antolín; Nadal, Enrique; Navarro-García, Héctor; C. Gutiérrez; Ródenas, Juan José; O. Allix (2022). Simulación numérica basada en imagen médica del proceso de curación de fractura ósea con el Cartesian Grid FEM. Congreso de Métodos Numéricos en Ingeniería (CMN 2022). Las Palmas de Gran Canaria, España: International Center for Numerical Methods in Engineering (CIMNE).
- Martínez-Martínez, Antolín; Nadal, Enrique; C. Gutiérrez; Ródenas, Juan José (2022). Numerical simulation tool for image-based bone healing process based on the Cartesian Grid Finite Element Method. 15th World Congress on Computational Mechanics (WCCM 2022). Online: International Center for Numerical Methods in Engineering (CIMNE).
- Navarro-García, Héctor; Navarro-Jiménez, José-Manuel; Sevilla, Rubén; Martínez-Martínez, Antolín; Ródenas, Juan José; Nadal, Enrique (2022). Open-source NURBS handling toolbox in MATLAB. 15th World Congress on Computational Mechanics (WCCM 2022). (450 - 450). Online: International Center for Numerical Methods in Engineering (CIMNE).
- Martínez-Martínez, Antolín; Nadal, Enrique; C. Gutiérrez; Ródenas, Juan José (2021). Numerical simulation of bone healing process and bioabsorbable scaffold-bone interaction with the Cartesian Grid Finite Element Method. 14th World Congress in Computational Mechanics (WCCM 2020). Online: International Centre for Numerical Methods in Engineering (CIMNE).
- Martínez-Martínez, Antolín; Nadal, Enrique; C. Gutiérrez; Ródenas, Juan José (2021). Numerical simulation of bioabsorbable implant-aided bone healing processes with the Cartesian grid Finite Element Method. 6th ECCOMAS Young Investigators Conference (YIC2021). Online: Universitat Politècnica de València.

## TECHNICAL SKILLS

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**Programming languages** : Python (Tensorflow), Matlab, Latex, Java

**Engineering softwares** : Ansys, Fusion365 Autodesk, NX, StarCCM+, ParaView, 3dSlicer

## LANGUAGES

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- Spanish - Native speaker
- English - First Certificate in English (FCE - B2 level) by Cambridge Assessment
- French - A2 level Certification
- Catalan - C1 level (Grau Mitjà) by JQCV