Juan Zaragoza Chichell
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Curriculum Vitae

Education

- **PhD in Computational Mathematics (Severo Ochoa Fellow)**
  BCAM - Basque Center for Applied Mathematics (Supervisor: Dr. Michael Bartoň)
  2022–present (final year)
- **MSc in Mathematical Research**
  Universitat Politècnica de València
  2022
- **BSc in Mathematics**
  Universidad de Salamanca
  2021

Funding

My PhD is funded by the Severo Ochoa Fellowship (PRE2021-099981) from the Spanish Ministry of Science and Innovation, a nationwide competitive grant of €100,860 over four years.

I was also awarded the Mitacs Globalink Research Award (CAD 6,000) to support a research stay at Concordia University (Montreal, Canada) in Spring 2025.

Awards

- **Mitacs Globalink Research Award (2025)**
  Awarded to carry out a research stay at Concordia University (Montreal, Canada) during the Spring of 2025.
- **ACM Europe Summer School on HPC and AI Fellowship (2024)**
  Fellowship to attend the ACM Summer School on High-Performance Computing and AI (2024).
- **Best Paper Award at SPM 2024 (2024)**
  Awarded for the paper "Collision-free Tool Motion Planning for 5-Axis CNC Machining with Toroidal Cutters" presented at the Symposium on Solid and Physical Modeling (SPM 2024), held at Concordia University (Montreal, Canada).

Publications

- **Evolution-based tool path and motion planning optimization for 5-axis CNC machining of free-form surfaces**
  J. Zaragoza Chichell, M. Bizzarri, J. Echevarrieta Ibarra, A. Pérez, M. Bartoň
  Computer-Aided Design, Vol. 190. 2025

- **On tool wear optimized motion planning for 5-axis CNC machining of free-form surfaces using toroidal cutting tools**
  K. Kruppa, J. Zaragoza Chichell, M. Bizzarri, M. Bartoň
  Computer-Aided Design, Vol. 189. 2025

- **Collision-free Tool Motion Planning for 5-Axis CNC Machining with Toroidal Cutters**
  J. Zaragoza Chichell, A. Rečková, M. Bizzarri, M. Bartoň
  Computer-Aided Design, Vol. 173. 2024

Code Repositories

- **PathOLogicalOptimist**: repository corresponding to the paper "Evolution-based tool path and motion planning optimization for 5-axis CNC machining of free-form surfaces."
  `https://github.com/juanZaragozaChichell/PathOLogicalOptimist`
- **MillingAround**: repository corresponding to the paper "Collision-free Tool Motion Planning for 5-Axis CNC Machining with Toroidal Cutters."
  `https://github.com/juanZaragozaChichell/MillingAround`

Talks & Conferences

- **Evolution-based tool path and motion planning optimization for 5-axis CNC machining of free-form surfaces**
  Symposium on Solid and Physical Modeling (SPM 2025), Hangzhou, Zhejiang, P.R. China.
  Oct 29–Nov 2, 2025
- **Collision-free Tool Motion Planning for 5-Axis CNC Machining with Toroidal Cutters**
  Symposium on Solid and Physical Modeling (SPM 2024), Concordia University, Montreal, QC, Canada.
  Best Paper Award (SPM 2024).
  Jul 8–10, 2024
- **An optimal and error-free method for collision detection**
  Perspectivas de la investigación en matemáticas, Pamplona, Spain.
  Nov 15–16, 2023

Outreach

- **Museum guide**
  Museo Universitario Didáctico e Interactivo de Ciencias (MUDIC), Orihuela, Spain.
  (University Didactic Interactive Science Museum)
  Developed and led interactive science communication activities for public audiences.
  2021

Research Stay

- **Concordia University**
  Montreal, QC, Canada
  Supervised by Dr. Tsz Ho Kwok; funded by Mitacs Globalink Research Award; focus on nonplanar 3D printing; manuscript in preparation.
  Mar 15–Jun 15, 2025