Pablo Rodríguez-Sánchez

Applied mathematician. Research software engineer. Science communicator

• Birth: October 13th 1984 • Nationality: Spanish • Currently based in the Netherlands

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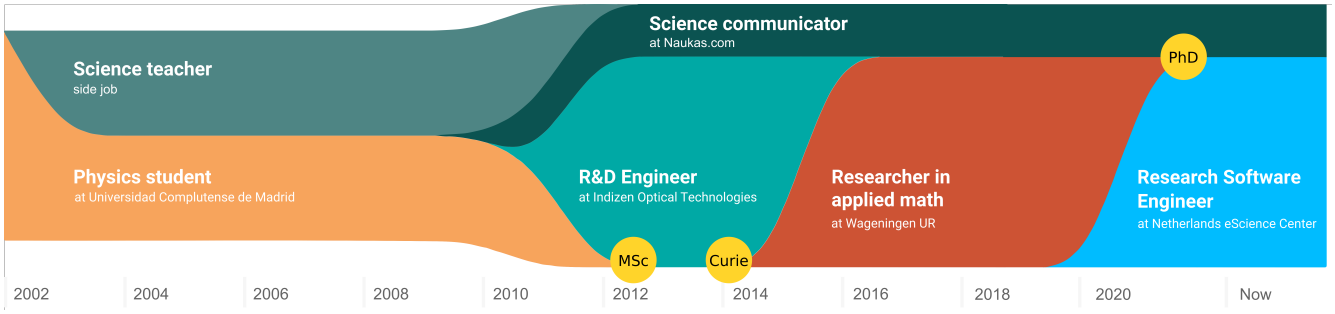
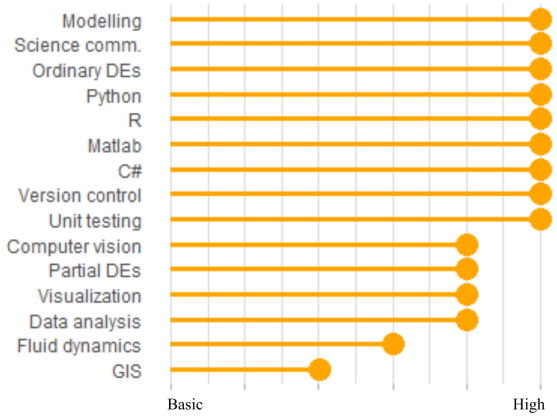
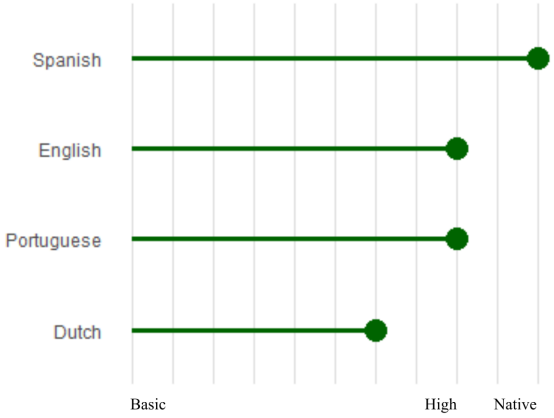
Visual CV

My timeline



Relevant skills





Work experience

Research Software Engineer. Netherlands eScience Center, Amsterdam
October 2019 – Now

Designer and developer of software solutions for diverse research problems, ranging from the analysis of forest fires with satellite data to the implementation of optimal algorithms for fluid dynamics simulation and quantum computing applications to radioastronomy. Additionally, I am deeply involved in teaching and science communication.

Marie Curie Early Stage Researcher. Aquatic ecology department, Wageningen UR.
October 2015 – October 2019

PhD student in mathematical modelling, simulation and analysis of biological systems; with a focus on the forecast of regime shifts using experimental time series. This project is part of the CRITICS (CRItical Transitions In Complex Systems) Intensive Training Network, coordinated by Imperial College London

R&D Engineer and IT security manager. Indizen Optical Technologies, Madrid.
July 2012 – September 2015

IOT is an ophthalmic lens design company. My work focused on the numerical simulations, optimization of lens surfaces' shapes, ray tracing, design of clinical trials, software development and maintenance and the research of new technologies and methods. I also developed tailored software for internal use, and provided training for employees and partners

Science tutor. Academia Oxford, Guadalajara. 2003–2011

Physics, chemistry and mathematics tutor. Student levels from high school to first university years

Side jobs

Science communicator. Naukas.com. April 2011 – Now

Frequent collaborations in media, theaters and universities in the form of short essays, live talks, interactive applets and even stand-up comedy. The full list can be found in my personal webpage

Activities and Promotion Coordinator. Marie Curie Alumni Association. April 2016 – April 2017

Teaching assistant. Faculty of physics, Complutense University of Madrid. 2007–2009

In charge of Single Variable Calculus, introduction to Electromagnetism and introduction to Thermodynamics

Education

- **PhD in applied mathematics, *Wageningen UR*. October 2015 – October 2019**
- **MSc in Physics, *Universidad Complutense de Madrid*. September 2002 – September 2012**

Relevant postgraduate courses

- **From working code to software package**, *Complexity Lab Utrecht*. 2019
- **Mathematics and industry**, *Imperial College. London*. 2018
- **Advanced High Performance Cluster course**, *Wageningen UR*. 2017
- **Modelling environmental resilience**, *École Normale Supérieure. Paris*. 2016
- **Orientation on mathematical modelling in biology**, *Wageningen UR*. 2016

Technical skills

- **Python**: professional use since 2014
- **R**: professional use since 2012
- **Matlab** : professional use since 2005
- **Julia**: professional use since 2022
- **C#**: 3 years of professional use
- **SQL**: 3 years of professional use
- **GeoGebra**: personal use since 2005
- **LaTeX:** personal use since 2005
- **C++**
- **Java**
- **Mathematica**
- **Maple**

Relevant teaching experience

- **R packaging**, *Software Carpentry course*. 2022
- **Introduction to parallel computing with Python**, *Software Carpentry course*. 2020
- **Make Your Tools, Scripts and Analyses Open and more FAIR**, *Software Carpentry course*. 2020
- **Continuous integration with Travis CI**, *Workshop for PhDs at WUR*. 2019
- **Introduction to Unit Testing with pytest**, *Workshop for PhDs at WUR*. 2018
- **Practical introduction to partial differential equations**, *Workshop for PhDs at WUR*. 2018

Selected publications

- Effects of the antidepressant fluoxetine on the swimming behaviour of the amphipod Gammarus pulex: Comparison of short-term and long-term toxicity in the laboratory and the semi-field. Schuijt L.M., et al. 2023. DOI: 10.1016/j.scitotenv.2023.162173
- Among-individual variation in the swimming behaviour of the amphipod Gammarus pulex under dark and light conditions. Van den Berg S., Rodríguez-Sánchez P, et al. 2023. DOI: 10.1016/j.scitotenv.2023.162177
- Evaluating recovery metrics derived from optical time series over tropical forest ecosystems. De Keersmaecker W., Rodríguez-Sánchez P, et al. 2023. DOI: 10.1016/j.rse.2022.112991
- Early warning signals for desynchronization in periodically forced systems. Rodríguez-Sánchez P, van Nes EH, Scheffer M. 2020. ArXiv ID: 2003.11595
- Neutral competition boosts chaos in food webs. Rodríguez-Sánchez P, van Nes EH, Scheffer M. 2020. DOI: 10.1098/rsos.1915
- Horizontal and vertical diversity jointly shape food web stability against small and large perturbations. Zhao et al. 2019. Ecology letters. DOI: 10.1111/ele.13282

Personal webpage

For expanded information, please click or type:

pabrod.github.io

or catch this QR code:

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