

CURRICULUM VITAE  
**Erick MARTINS RATAMERO**

I enjoy analyzing systems with interesting dynamics, breaking them into their component parts and modelling their behaviour mathematically. I have worked across multiple disciplines, cultures and conditions and have always shown the ability to adapt and deliver results under a variety of environments.

**ACADEMIC INTERESTS**

- Mathematical Modelling, Biophysics, Bioimage Analysis, Statistical Mechanics, Molecular Biology, Game Theory, Agent-based modelling

**ACADEMIC QUALIFICATION**

- Marie Curie CAS-IDP Ph.D. In Analytical Science, University of Warwick/United Kingdom (2013-2017) - “Bacterial inner membrane remodelling by force generation of FtsZ fibres”
  - I wrote (mostly C) code to simulate bacterial division using Metropolis algorithms and high-dimensional geometry.
  - Completed a Postgraduate Certificate in Transferable Skills – Doctoral Skills, Science Communication, Teamworking and Business and Innovation
- Erasmus Mundus Master in Complex Systems Science – École Polytechnique/France and Chalmers University of Technology/Sweden (2011-2013).
  - During my Masters, I developed two mini-dissertations on Evolutionary Game Theory and Innovation Theory. The teaching focus of the program was on statistical simulation and dynamical systems.
- B.Sc. Telecommunications Engineering – Universidade Federal Fluminense/Brazil (2004 – 2009).
- Scholarships and Awards: Marie Curie Initial Training Network Fellowship, Erasmus Mundus M.Sc. Scholarship, 3 “Student of the Year” Awards during B.Sc.

**PROFESSIONAL EXPERIENCE**

- University of Warwick, England (2017-present): Research Fellow – responsible for all image analysis and data management needs for the Division of Biomedical Sciences, Warwick Medical School. Work mainly with ImageJ/Fiji, Python, Java, OMERO
- University of Warwick, England (2017-2017): INTEGRATE AMR Early Career Fellow – developed new code for protein rigidity analysis simulations and virtual reality visualisation of results, using Python and Unity3D.
- Chemtech Ltda, Brazil (2008-11): Junior Engineer – delivered detailed project design for telecommunications infrastructure in two oil refineries.

- Harman/Becker GmbH, Germany (2008): Trainee - developed a new suite of testing tools and data for speech recognition systems.

**ACADEMIC PRODUCTION SUMMARY: 5 published papers (2 first author, 1 preprint), 37 citations – work on theoretical biophysics, data visualisation, agent-based modelling of competitive cycling pelotons**

**COMPUTATIONAL SKILLS: extensive experience with C and Python. Knowledge of MATLAB, Java, ImageJ/Fiji, OMERO, Mathematica, R, FORTRAN.**

#### **DETAILED ACADEMIC PRODUCTION**

- Ratamero, E. M., & Royle, S. J. (2019). Calculating the maximum capacity of intracellular transport vesicles. *BioRxiv*, 555813.
- Ratamero, E. M., Bellini, D., Dowson, C. G., & Römer, R. A. (2018). Touching proteins with virtual bare hands. *Journal of computer-aided molecular design*, 32(6), 703-709.
- Trenchard, H., Ratamero, E., Richardson, A., & Perc, M. (2015). A deceleration model for bicycle peloton dynamics and group sorting. *Applied Mathematics and Computation*, 251, 24-34.
- Trenchard, H., Richardson, A., Ratamero, E., & Perc, M. (2014). Collective behavior and the identification of phases in bicycle pelotons. *Physica A: Statistical Mechanics and its Applications*, 405, 92-103.
- Ratamero, E. M. (2013). Modelling Peloton Dynamics in Competitive Cycling: A Quantitative Approach. In *Sports Science Research and Technology Support* (pp. 42-56). Springer International Publishing.

#### **LANGUAGES**

- English: Fluent (TOEFL IBT 117/120)
- Portuguese: Fluent (Native)
- French: Fluent (TCF C1)
- Spanish: Basic
- German: Basic
- Italian: Basic