

# Matías Bettera Marcat

I am a Physicist currently finishing a PhD. Researching in biophysics, and interested in science and technology. I have a strong background in mathematics and physics, and experience facing problems with modeling, simulations and statistical analysis. I am looking forward to a career in Data Science and Machine Learning. Linux, Open and Free software enthusiast.

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## Personal Info and links

- Date of birth: March 16, 1990
  - Residence: Córdoba, Argentina
  - Cellphone: +54 (9) 358 4834287
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## SKILLS

- **Programming Languages:** Python, Fortran, C, Shell Scripting
  - **Tools & Libraries:** pandas, Numpy, matplotlib, jupyter, Github, Docker, Gnuplot, Bash, ssh, SGE
  - **LANGUAGES**
    - English: Good redaction skills and fluency.
    - Spanish: Mother tongue. Advanced redaction skills and fluency.
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## EDUCATION

- **2020 Data Science and its applications diploma** Mathematics, Astronomy, Physics and Computer Science school, National University of Córdoba, Argentina.
  - **2016 - PhD in Physics**, research on Dynamics of microconfined swimmers. Mathematics, Astronomy, Physics and Computer Science school, National University of Córdoba, Argentina. ( *Doctorado en Física. FaMAF, UNC. Investigación: Dinámica de nadadores microconfinados, FaMAF, UNC* ).
    - **PhD Courses:** Numerical Methods in Astrophysics, Computational Physics, Fluid Mechanics, Topics in Mathematical Biology, Introduction to LAMMPS code.
  - **2010-2016 B.S. in Physics**, Final grad work: Simultaneous uptake model of water and nutrients by crop roots. Physics department, National University of Rio Cuarto, Argentina. ( *Licenciatura en Física, Trabajo Final: Modelo de toma simultánea de agua y nutrientes por raíces de cultivos. UNRC* )
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## EXPERIENCE

- **Lecturer**, Mathematics, Astronomy, Physics and Computer Science school, National University of Córdoba, Argentina. ( *Profesor Ayudante B D.S., FaMAF, UNC.* )
    - **08/2022 to -** Mechanics
    - **03/2022 to 07/2022** Admission and introductory course.
  - **Lecturer**, National University of Rio Cuarto, Argentina.
    - **08/2022 to -** General Physics III (Electricity and Magnetism)
    - **03/2022 to 07/2022** Thermodynamics and Statistical Mechanics I
    - **03/2016 to 07/2016** General Physics IV (Waves and Optics)
  - **Research fellowship**, granted by CONICET. ( *Beca Interna Doctoral de CONICET* )
    - **04/2016 to 03/2022** Research on active matter, particularly sperm dynamics in confined environments, with simulations and experimental data analysis. ( *Investigación sobre materia activa, en particular dinámica de espermatozoides en ambientes confinados, con simulaciones y análisis de datos experimentales.* )
  - **Student assistant**, Physics department, National University of Rio Cuarto, Argentina. ( *Alumno Ayudante de Segunda D.S. FCEFQyN, UNRC.* )
    - **03/2015 to 07/2015** Electromagnetism I
    - **08/2014 to 12/2014** General Physics I (Introduction to Mechanics)
    - **03/2013 to 07/2013** Mechanics
    - **08/2012 to 12/2012** Electromagnetism I
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## PUBLICATIONS

- Hitting the wall: Human sperm velocity recovery under ultra-confined conditions. Bettera Marcat M. A. *et al.* Biomicrofluidics **14**(2), 024108 (2020). [\[Link\]](#)
- Espermatozoides microconfinados: interacción con paredes. Bettera Marcat M. A. *et al.* Anales AFA **29**(4), 111-115 (2018). [\[Link\]](#)
- Validación de un modelo de toma de simultánea de agua y nutrientes. Bettera Marcat M. A. *et al.* Anales AFA **28**(2), 37-40 (2017). [\[Link\]](#)