# Matias Bettera Marcat
## Physicist

Last update: January 17, 2024

Up-to-date version of CV is available at
 https://mbetteram.github.io/online-resume

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|---|---|
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Physicist, currently finishing a PhD. Researching in biophysics, and interested in science and technology. With a strong background in mathematics and physics, and experience facing problems with modeling, simulations a statistic analysis. Linux, Open and Free software enthusiast.

Skills: Fortran, C, Bash/Shell scripting, ssh, gnuplot, Python, numpy, matplotlib, seaborn, jupyter, Git/Github, scikit-learn, tensorflow, SQL

# Professional Experience

Mar 2023 - Present
## Proffessor

Universidad Empresarial Siglo 21 is a bussiness oriented private university. I am proffessor of theoretical and poblem clases of many mathematics courses, statcis and physics.

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- __Distance courses__ _(two months period)_: Physics, Statics, Mathematical Analisys, Algebra.
- __Presential intensive courses__ _(two months period)_: Mathematical Analisys, Statistics II.
- __Presential courses__ _(four months period)_: Mathematical Analisys.
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May 2023 - Sep 2023
## Monitoring teacher

My role at Data science diploma, at FAMAF-UNC consisted in the monitoring, advising and evaluation of assignments, of four groups of four people each.

Python jupyter numpy pandas matplotlib seaborn SQL scikit-learn tensorflow Git

Mar 2022 – Present, Mar 2016 - Jul 2016
## Lecturer (Profesor Ayudante de Primera.)

Lecturer for problem classes. Evaluation of midterm and final examns.

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- __2nd term 23__  Thermodynamics and Statistical Mechanics II _and_ Modern Physics I
- __1st term 23__  Thermodynamics and Statistical Mechanics I _and_ Physics 4 (Modern Physics)
- __2nd term 22__  General Physics III (Electricity and Magnetism).
- __1st term 22__  Thermodynamics and Statistical Mechanics I.
- __1st term 16__  General Physics IV (Waves and Optics).
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March 2022 – Feb 2023
## Lecturer (Profesor Ayudante B D.S.)

Lecturer for problem classes. Evaluation of midterm and final examns.

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- __Feb 22__  Admission and introductory course.
- __2nd term 22__  Mechanics
- __1st term 22__  Admission and introductory course.
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Apr 2014 – Feb 2017
# Research

**Research fellowship**, granted by CONICET. *(Beca Interna Doctoral de CONICET)*

Research on active matter, particularly sperm dynamics in confined environments, with simulations and experimental data analysis.

*(Investigación sobre materia activa, en particular dinámica de espermátozoides en ambientes confinados, con simulaciones y análisis de datos experimentales.)*

Data analysis   Modeling   Simulation   Active Matter   Biophysics

Aug 2014 – Jul 2015, Aug 2012 – Jul 2013
# Student assistant (Alumno Ayudante de Segunda D.S.)

Student assistant for problem classes. - **1st term 15** Electromagnetism I - **2nd term 14** General Physics I (Introduction to Mechanics) - **1st term 13** Mechanics - **2nd term 12** Electromagnetism I

# Education

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