



Federico M. Barabas

POSTDOCTORAL RESEARCHER

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Profile

Physicist with strong technical skills in Python programming, optics of bioimaging and statistics. Data scientist, machine learning and visualization enthusiast. I enjoy working in interdisciplinary settings.

Skills

- Programming** Scientific Python for instrument control, image analysis and graphical user interfaces. Linux, \LaTeX , Git.
- Optics** Microscopy system design and construction. Fluorescence bioimaging beyond the diffraction limit.
- Statistics** Probability distributions, parameter estimation, experiment design and hypothesis testing.

Experience

Advanced Optical Bio-Imaging Lab, SciLifeLab

Stockholm, Sweden

POSTDOC RESEARCHER

2017 - PRESENT

- Developing new methods for pushing the resolution limits of fluorescence microscopy.

Applied NanoPhysics Group, Bionanosciences Research Center

Buenos Aires, Argentina

PHD CANDIDATE

2012 - 2017

- Designed and built a localization fluorescence microscope, capable of acquiring images of biological samples at the nano-metric scale. The open-source control software description was published in doi.org/10.1063/1.4972392. Code repository: github.com/federabarabas/tormenta.
- Developed an image analysis tool to automatically quantify a periodical structure currently under study within the community. The work was published in <https://doi.org/10.1038/s41598-017-16280-x>. Code repository: github.com/federabarabas/ringfinder.

Detection Technologies and Astroparticles Institute

Buenos Aires, Argentina

UNDERGRADUATE STUDENT

2011 - 2012

- Studied the statistical counting efficiency of muon detectors for the Pierre Auger Observatory.

Education

Buenos Aires University

Buenos Aires, Argentina

PHD IN PHYSICAL SCIENCES

2012 - 2017

Buenos Aires University

Buenos Aires, Argentina

LICENCIATURA IN PHYSICAL SCIENCES

2006 - 2012

Courses

deeplearning.ai

www.coursera.org

DEEP LEARNING SPECIALIZATION

Feb 2018 - PRESENT

Teaching experience

Physics Dept., Faculty of Exact and Natural Sciences, Buenos Aires University

[Buenos Aires, Argentina](#)

GRADUATED ADVANCED LABORATORY TEACHING ASSISTANT

2015 - 2017

Science and Technology School, San Martín National University

[Buenos Aires, Argentina](#)

GRADUATED TEACHING ASSISTANT

2012 - 2013

Physics Dept., Faculty of Exact and Natural Sciences, Buenos Aires University

[Buenos Aires, Argentina](#)

STUDENT TEACHING ASSISTANT

2011 - 2012

Management

Optical Society of America (OSA) Student Chapter

[Buenos Aires University](#)

PRESIDENT

2015 - 2017

- Planning and coordination of local and national professional development activities.
- Proposal and organization of a new semestral activity where young researchers gave short talks to spark local collaborations and inspire students to pursue a career in optics.
- Recruitment activities organization: during my term, the number of members doubled.
- Chapter resources administration and writing of grant applications.

Optics and Photophysics Student National Meeting

[Buenos Aires, Argentina](#)

ORGANIZING COMMITTEE MEMBER

2013

- Schedule organization.
- Book of abstracts design.
- Logistic support during the National Meeting.

Other

Languages Spanish, English, Swedish (basic), Italian (basic).

Interests bike touring, DIY culture, space exploration fan, guitar.