MATÍAS FERNÁNDEZ LAKATOS

PhD student in Optical Physics, Msc in Theoretical Physics, Bachelor in Physics

@ <mfernandezlakatos@gmail.com> Montevideo, Uruguay
(+598) 99695244

PROFESSIONAL EXPERIENCE

Researcher and Teaching Assistant at UdelaR

2015 – Present — Fac. Ingeniería, Udelar, Montevideo

- Taught university physics at the Physics Institute (2015 – present).
- Conducted research in multiple projects, including study of long-range properties of the strong nuclear interaction, development of multispectral instruments for remote monitoring of trace gases and other applications, phase object reconstruction from transport of Intensity Equation, creating a new method for phase retrieval using phase-shifting properties and creating a new method of integration from just one derivative.

Math teacher at International College Punta del Este

2018 — Montevideo

- English classes of Maths for 1st and 2nd grade.

UNIVERSITY DEGREES

PhD in Optics

2019 – present — Udelar, Montevideo

- Thesis: Visualización y Caracterización de Objetos de Fase. Courses on Laboratory of fundamental electronics and scientific instrumentation, Coherent Optics, **Reinforcement Learning**, **Computer Image Processing**, Computational Multivariate Statistics and **Deep Learning for Computer Vision (cs231n)** . Advisors: PhD. José A. Ferrari, PhD Erna Frins and PhD Gastón A.Ayubi.

MsC in Quantum Chromodynamics

2016 – 2018 — Udelar, Montevideo

- Thesis: Rol de los diversos acoplamientos en la cromodinámica cuántica infrarroja (clickable) Courses on Statistical Mechanics, Quantum Field Theory I and II, General Relativity. Advisors: PhD. Nicolás Wschebor and PhD Marcela Peláez.

Bachelor's Degree in Physics

2011 – 2015 — Udelar, Montevideo

ABOUT ME

Currently seeking employment in the exciting field of Artificial Intelligence, programming, and Python. My experience lies in image modeling and programming, skills honed during my Ph.D. in Physics across various experiments. I've furthered my knowledge through Machine Learning courses to enhance my expertise. I've shared my insights through talks and presentations at events and conferences, honing my communication abilities. My enthusiasm, dedication, and continuous learning drive me to grow and contribute.
With 8 years of teaching experience and leadership in volunteer work, such as building homes and teaching high school classes, I've cultivated strong soft skills. These include effective collaboration, teamwork, adaptable and clear communication, as well as empathy and understanding for others' needs and concerns. These experiences have bolstered my interpersonal skills and ability to comprehend diverse perspectives, benefiting my teaching and professional endeavors.

ACHIEVEMENTS

Master's scholarship from the Comisión Académica de Posgrados (CAP)

2016 — Msc

PhD scholarship from the Agencia Nacional de Investigación e Inovación (ANII)

2019 — PhD

PhD scholarship from the Comisión Académica de Posgrados (CAP)

2022 — PhD

First author peer-reviewed article

2019 — IJMPA Scopus

"On the contribution of different coupling constants in the infrared regime of Yang-Mills theory: A Curci-Ferrari approach" (clickable)

First author peer-reviewed article

2022 — Optik Scopus

"Phase retrieval by amplifying the prism term of the Transport of Intensity Equation with a sliding step function" (clickable)

First author peer-reviewed article

2023 — OLE Scopus

"Common-path quantitative phase imaging by propagation through a sinusoidal intensity mask" (clickable)

TECHNICAL SKILLS

Git · Data analysis · R · Machine Learning · modeling · Digital Image Processing · Linux · Statistical Analysis · LaTeX · Multivariate Analysis · Optimization · Database Management and Modeling

PROG. LANGUAGES

Python	●●●●●
MATLAB	●●●●●
OpenCV	●●●●●
PyTorch	●●●●○
Tensor Flow	●●●●○
Scikit	●●●●○
Linux/Bash	●●●●○
R	●●●○○
C/C++	●●●○○