MATÍAS FERNÁNDEZ LAKATOS

PhD student in Optical Physics & Msc in Theoretical Physics

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PROFESSIONAL EXPERIENCE

Researcher and Teaching Assistant at UdelaR

2015 – 2024 Fac. Ingeniería, Udelar, Montevideo

- Taught university physics at the Physics Institute (2015 – 2024).
- Conducted research in multiple projects, including study of long-range properties of the strong nuclear interaction, development of multispectral instruments for remote monitoring, phase object retrieval involving a new method 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

MSc Tecnologías de Análisis Masivo de Datos: Big Data

2024 – present USC, Santiago de Compostela

- Courses on Large-Scale Databases, Technologies for Managing Unstructured Information, Computing Technologies for Big Data, IoT, Statistics, Data Mining, Data Visualization, Business Intelligence, and Applications and Use Cases in Business.

PhD in Optics

2019 – 2024 Udelar, Montevideo

- Thesis: Visualization and Characterization of Phase Objects (clickable) 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 field of Artificial Intelligence. My experience lies in image modeling and programming, skills honed during my Ph.D. in Physics through several research projects. I have furthered my knowledge through Machine Learning and related subjects with courses such as cs231n, Reinforcement Learning, Computational Multivariate Statistics, and Computer Image Processing, which have enhanced my expertise. I have shared my insights through talks and presentations at events and conferences, refining my communication abilities.

With 8 years of teaching experience and a demonstrated commitment to community service, including participation in housing construction projects and teaching high school classes, I have 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)

PhD scholarship from the Agencia Nacional de Investigación e Inovación (ANII,2019)

PhD scholarship from the Comisión Académica de Posgrados (CAP,2022)

Member of the National System of Researchers in Uruguay (SNI, 2024).

4 first author peer-reviewed articles.

clickable, 2019, IJMPA Scopus
clickable, 2022, Optik Scopus
clickable, 2023, OLE Scopus
clickable, 2024, SPIE

Author peer-reviewed article

clickable, 2024, IOP Science

TECHNICAL SKILLS

Git | Data analysis | R | SQL | 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++