

Adrian Domínguez Castro, Ph.D.

Machine Learning & AI Consulting | Quantitative Research | Computational Chemistry

Email · [Linkedin](#) · [GitHub](#) · [Google Scholar](#)

SELECTED EXPERIENCE

Machine Learning Engineer & AI Consultant · Freelance, USA · Apr 2024-Present

- Developed and deployed 10+ end-to-end Machine Learning projects, showcasing high-accuracy and efficient models in a [GitHub Portfolio](#).
- Enhanced AI consulting expertise through research and applying state-of-the-art Machine Learning techniques for predictive finance, anomaly detection, computational chemistry, wine quality assessment, biomedical research, image classification, and clustering. Optimized existing Machine Learning algorithms to enhance performance, resulting in a 25% reduction in computational costs.
- Automated feature engineering processes with Python resulting in a 50% reduction in development time.

Postdoctoral Research Scientist · Vanderbilt University, USA · Feb 2023-Jan 2024

- Led a project integrating Density Functional Theory (DFT) and Machine Learning to predict catalytic material properties with over 85% accuracy, resulting in a peer-reviewed publication.
- Implemented computational chemistry simulations and developed Python scripts to automate data collection and processing, enhancing efficiency by 80%.

Doctoral Research Scientist · University of Bremen, Germany · Oct 2018-Dec 2022

- Led 3+ multi-year research projects, resulting in 4 peer-reviewed publications and developed data science solutions resulting in a 50% reduction of processing time.
- Directed data modeling and advanced simulations for computational chemistry, delivering insights in 10+ talks at scientific meetings. Built and led interdisciplinary teams, fostering collaborations across five countries (Germany, Spain, China, USA, and France)
- Collaborated on the development of Deep Learning models for molecular property prediction, improving predictive accuracy and reducing computational time.

EDUCATION

Ph.D. in Physics (Dr. rer. nat.) · 2022 · University of Bremen, Germany

B.Sc. in Radiochemistry · 2014 · InSTEC, Cuba

SKILLS

- Machine Learning
- Deep Learning
- Data Analytics
- Quantitative & Statistical Analysis
- Programming
- Project Management & Communication
- Computational Chemistry
- Cheminformatics & Molecular Modeling
- Interdisciplinary Research & Collaboration

CERTIFICATIONS

- **Deep Learning Specialization** by Stanford University & DeepLearning.AI on Coursera.
- **Machine Learning Specialization** by Stanford University & DeepLearning.AI on Coursera.
- **AI for Everyone** by Stanford University & DeepLearning.AI on Coursera.
- **ChatGPT Prompt Engineering for Developers** by DeepLearning.AI on Coursera.

PORTFOLIO FOR MACHINE LEARNING AND DATA SCIENCE

Explore detailed projects in Machine Learning and Data Science in my [Portfolio](#)

PUBLICATIONS

For a full list of publications, visit my [Google Scholar Profile](#)