

# Adrian Domínguez Castro, Ph.D.

Machine Learning & AI Consulting | Quantitative Research

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

## SELECTED EXPERIENCE

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### Machine Learning & AI Consultant · Freelance, USA · Feb 2024-Present

- Designed and deploy 10+ end-to-end Machine Learning and Quantitative Analytics projects, showcased on [GitHub Portfolio](#), achieving high accuracy and efficiency tailored to projects requirements.
- Developed AI consulting expertise through research and open-source projects, integrating state-of-the-art machine learning algorithms for predictive analysis in finance forecasting, anomaly detection, computational chemistry, wine quality prediction, biomedical research, image classification, and clustering. Optimized model training time by 40% through hyperparameter tuning.
- Automated data preprocessing pipelines using Python, reducing manual effort by 90% , improving scalability for large datasets.

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

- Designed, developed, and implemented Machine Learning projects, including deep learning models predicting physical-chemistry observables with over 85% accuracy, culminating in 1 publication.
- Led computational chemistry simulations and developed Python scripts to automate data collection, and data cleaning processes, reducing a 80% of processing time.

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

- Led all aspects of 3 multi-year research projects, resulting in 4 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 AI applications in Chemistry.

## EDUCATION

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

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

## SKILLS

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- Machine Learning   • Deep Learning   • Data Science   • Statistical Analysis
- Quantitative Analytics   • Python Programming   • Project Management   • Communication
- Computational and Theoretical Chemistry

## CERTIFICATIONS

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- **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

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

## PUBLICATIONS

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