

# Adrian Domínguez Castro, Ph.D.

AI & Machine Learning | Quantitative Research | Computational Chemistry

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## SELECTED EXPERIENCE

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### Machine Learning Engineer | Data Scientist · Apr 2024-Present

*ADC Scientific Consulting, USA. (Self-employed)*

- Designed and deployed 10+ end-to-end Machine Learning applications for real-world problems across finance, chemistry, and technology domains. ([Portfolio](#).)
- Delivered client-focused AI solutions as an independent consultant. Applied advanced Machine Learning techniques (XGBoost, DNNs, LSTM, Autoencoders, CNNs, etc.) to achieve high accuracy and reduce model latency by 25%.

### Postdoctoral Research Scientist · Feb 2023-Jan 2024

*Vanderbilt University, USA*

- 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 · Oct 2018-Dec 2022

*University of Bremen, Germany*

- 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)
- Integrated Deep learning into cheminformatics workflows, boosting property prediction accuracy and model efficiency.

## EDUCATION

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

B.Sc. in Radiochemistry · 2014 · InSTEC-University of Havana, Cuba

## SKILLS

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- Machine Learning · Deep Learning · Data Science · Quantitative Research
- Programming: Python, C/C++ · Statistics & Predictive Analytics · Computational Chemistry
- Project Management · Communication & Collaboration

## 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.
- **ChatGPT Prompt Engineering for Developers** by DeepLearning.AI on Coursera.
- **AI for Everyone** by Stanford University & DeepLearning.AI on Coursera.

## PORTFOLIO HIGHLIGHTS – MACHINE LEARNING & DATA SCIENCE

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Explore full projects on [Portfolio](#)

## PUBLICATIONS

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