Alis Rodriguez Manso, Ph.D.

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Green Card Holder

Data Scientist

Specialized in: Analytic Modeling, Statistical Methods

7+ years of experience as highly skilled Data Scientist. Currently working for the Cyclotron Institute at Texas A&M University, and previously for the European Center of Nuclear Research (CERN) and the National Institute for Subatomic Physics (Nikhef), The Netherlands.
Proven record of predictive modeling, statistical techniques, and data mining algorithms resulted in publications in peer reviewed journals, and presented in several international conferences. Extremely skilled at project leadership, and at collaboration with multi-cultural and multi-disciplinary teams.

Statistics **I** Data Analysis **I** Machine Learning **I** Modeling **I** Data Visualization **I**
Competing Priority Management **I** Team Coordination **I** Effective Communication

Professional Experience

Postdoctoral Fellow — **Texas A&M University (TAMU) I** College Station, TX **I** 2016 - Present

- Designed and coordinated the Particle Induced X(Gamma)-ray Emission, PIXE (PIGE) experiments for the first time at the TAMU Cyclotron Institute. Project involved design of scientific experiment, execution and development of analytical tools and statistical evaluation of the results. Lead team of undergraduate and graduate students, postdocs, faculties and accelerator physicists. Published as AIP scientific proceedings (link).
- Lead the data analysis for detailed characterization of neutron-proton equilibration in two and three bodies dynamically deformed nuclear systems. Performed selection optimization, regression analysis, and statistical studies on the final data set. Published in peer review journals (link)
- Applied deep learning techniques to categorize high energy physics data by developing a deep neural network algorithm which adopts a novel parametric training technique that returns a model which depend on input parameters (>98% accuracy).
- Reduced manpower needs in experimental setups and ensured optimal performance in multiple data analysis sub-groups by training and promoting team members, adopting novel technologies and tools to automatize workflows.

Graduate Researcher — **Nikhef/CERN I** Amsterdam, NL **I** 2011 - 2015

- Performed data wrangling for PBs of high energy physics data. Designed selection optimization and feature engineering in order to provide the first measurement of Charge Independent Balance Functions in ALICE at CERN.
- Designed and performed statistical analysis on the high energy physics data to reduce statistical and systematic uncertainties bellow 3%. Results published for the first time in peer review journal (link1, link2).
- This system combines analysis from different users in so-called analysis trains which are then executed within the same Grid jobs thereby reducing the number of times the data needs to be read from the storage systems
- Teaching Assistant at Utrecht University, The Netherlands. Courses: Subatomic Physics and Advance Statistical Physics.

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Publications & Conferences

180+ publications as postdoc and a member of ALICE Collaboration, and multiple international conferences.
Full list available at link1, link2.

Technical Proficiencies

Programming Languages	C++, Python, SQL
Python Libraries	NumPy, Pandas, Pyplot, Tensor Flow, Keras, Sklearn
Machine learning	KMeans, Regressions, Deep Neural Network
Version Control	SVN, CVS, WordPress
Software Applications	LaTeX; Microsoft/Mac Office: Excel/Numbers, PowerPoint/Keynote, and Word/ Pages; Origin; GUPIXwin; ROOT; AliROOT

Education

Doctor of Philosophy (Ph.D.), High Energy and Heavy Ions Physics – Nikhef (Amsterdam) & Utrecht University | The Netherlands

Master of Science, Theoretical Nuclear Physics – Higher Institute of Technologies and Applied Sciences (InSTEC) | La Habana (HAV), Cuba

Bachelor of Science, Nuclear Physics – InSTEC | HAV, Cuba

Awards

College of Science Diversity and Equity Small Grants Program I 2018

1st prize of the Theoretical Physics Commission I 2010

2nd prize of the Theoretical Physics Commission I 2009

Ab-Initium prize for young scientists | 2006

Outreach Activities

Organizer – Cyclotron Women's Meeting Promoting Diversity, Equity and Inclusion.

Ph.D. council coChair Mediating between graduate students and managing boards.

Invited Instructor Professor (volunteer work), InSTEC, HAV, Cuba. Master course: "Macroscopic theory of nuclei".

Lecturer and laboratory assistant, InSTEC, HAV, Cuba: "Experimental Methods of Nuclear Physics" and "Neutrons".

Group website manager, improving exchange between the working group and the outside word (in WordPress).