

# Iván Darío Torroledo-Peña

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## About

Economist and Physicist interested in applying Data Science, Machine Learning, Data Analytics, Deep Learning, Econometrics, Computational and Mathematical Modelling to create value from data.

## Education

Universidad de los Andes, Colombia.  
**B.S. in Physics**, 2018.  
GPA: 8.6/10.0.

Universidad de los Andes, Colombia.  
**B.S. in Economics**, 2016.  
GPA: 8.6/10.0.

## Honors and Awards

Universidad de los Andes.  
**Quiero Estudiar Scholarship** for academic excellence to course undergraduate studies.  
2011

## Experience

*Cyxtera.*

### **Data Scientist at Research.**

Data Scientist member of the Research team developing and implementing Machine Learning and Deep Learning (CNN's, RNN's, LSTM, GAN's) models using Python, Tensorflow, Theano, Keras, Plotly, Pandas, Seaborn and Natural Language Processing techniques for fraud prevention, phishing & anomaly detection and risk analysis.

December, 2017 - Now.

*Banco de la República, Central Bank of Colombia.*

### **Economist & Research Assistant at Macroeconomics Modelling Department.**

- Developer of forecasting and predictive models for Monetary Policy analysis using DSGE's, Machine Learning, Bayesian Statistics and Time Series Econometrics.
- Research Assistant in the development and implementation of High Dimensional DSGE models for Monetary Policy and Sovereign Debt analysis using High Performance Computing tools like parallel computing (MPI, OpenMP), main scientific libraries (LAPACK, BLAS, LINPACK) and sparse grids methods on Fortran and C++.

August, 2016 - December, 2017.

### **Research Assistant & Freelance Consultant.**

- Freelance Consultant in the areas of Data Analytics and Data Analysis using specialized techniques such as Machine Learning, Data Mining for Small and Medium-sized Enterprises using tools such as R, Python, Plotly, C++, MySQL and Excel. Also data analysis, data preparation (Quality and Completeness), data validation and visualization.

- Research Assistant of a PhD student (UCSD) in the development of academic papers related with economics of public health and public policy. Furthermore, I worked collecting data from different sources through Web Scrapping techniques.

Feb, 2016 - December, 2016.

*Universidad de los Andes.*

**Teaching Assistant, Computational Methods.**

Teaching Assistant for the undergraduate course Computational Methods from the Physics's program using python and C to teach interpolation methods, differential equations solutions, PCA, Fourier analysis, numerical differentiation and integration and Monte Carlo methods.

August, 2015 - December, 2015.

*Banco de la República, Central Bank of Colombia.*

**Intern at Macroeconomics Modelling Department.**

Development and implementation of computational macroeconomic models using dynamic programming, global methods solution, Fortran, C and High Performance Computing (HPC) techniques as Parallel Computing and Distributed and Shared Memory in order to improve code performance efficiency.

January, 2015 - December, 2015.

*Universidad de los Andes.*

**Teaching Assistant, Instructor.**

Academic instruction in the guidance of the learning process of first year students of Economics, Science and Engineering majors for the Microeconomics, Econometrics and basics physics courses.

January, 2014 - November, 2014.

## Computer Skills

Fortran, C, Cython, C++, R, Java, Shell, Git, SQL, ROOT.

Python: Pandas, Sklearn, Matplotlib, Seaborn, Plotly, NumPy, Jupyter, Multiprocessing.

TensorFlow, Theano, Keras.

MPI, OpenMP, CUDA, OpenACC, BLAS, LAPACK, LINPACK.

Matlab/Octave, Stata.

## Languages

Spanish (Native), English (Fluent), Chinese (Basic).

## Publications

DeepPhish: Simulating Malicious AI, IEEE APWG Symposium on Electronic Crime Research (eCrime), 2018, San Diego, USA.

Hunting Malicious TLS Certificates with Deep Neural Networks, Proceedings of the 11th ACM Workshop on Artificial Intelligence and Security, ACM, 2018, Toronto, Canada.