

SANTIAGO CORTÉS

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Publications

- Unsupervised learning for economic risk evaluation in the context of Covid-19 pandemic, (published on Neurips 2020 ML4D workshop, selected for talk)
- Alternative Strategies for the Estimation of a Disease's Basic Reproduction Number: A Model-Agnostic Study, published on bulletin of mathematical biology.

Experience

Factored (*A company backed by Dr. Andrew Ng's Ai fund*)

October 2019 – Present

Senior Machine learning engineer

Medellín, Colombia

- Part of a team of ex-Google engineers that develop a computer vision solution for improving performance of a model without the need of increase the size of the data-set used to train such model. I was involved in both the implementation of state of the art techniques and the development of the production code. The solution involved Knowledge distillation, data augmentation and domain transfer.
- Built a system that assigned categories to complains from a CRM. The solution included a novel training method for the model that allowed to overcome the natural noise present on the labels for this task.
- Led a team that developed an early warning tool for helping to elaborate public policies. This tool leverages on unsupervised learning techniques that profiled economic and social vulnerability across Colombian political regions. This work led to a publication.
- Built a real time bidder system (using reinforcement learning) for usage within the infrastructure of a DSP.

Universidad EAFIT

January 2020 – June 2021

Adjunct faculty.

Medellín, Colombia

- In charge of the Mining massive datasets course for the university's M.Sc. in data science. This course teaches the fundamentals of big data technologies such as: The map reduce paradigm, local sensitivity hashing, streaming data and the use of Apache Spark.

Lacuna Fellowship

May 2019 – September 2019

Fellow

Medellín, Colombia

- Artificial Intelligence and Machine Learning fellowship (sponsored by Andrew Ng's Ai fund and taught by some of his students). During it, I improved my skills in dynamic programming, graph theory, machine and deep learning. The main objective of the program was to make me capable of recreate and serve(deploy) the models or algorithms described in the most recent computer science papers.

Barbara & Frick (*acquired by Accenture Colombia*)

July 2018 – April 2019

Data scientist

Bogotá, Colombia

- Led a team that built the analytics department in a large Colombian CPG company.

Universidad de los Andes

May 2019 – August 2019

Students representative

Bogotá, Colombia

- Students representative for the Mathematics department.

Research and teaching experience

Research Engineer for EAFIT | *Universidad EAFIT/Factored*

October 2020 - December 2020

- Led a team that developed an early warning tool as part of EAFIT university's Covid-19 pandemic monitoring platform. This tool leverages on unsupervised learning techniques that profiled economic and social vulnerability across Colombian political regions.
- This work led to a publication on Neurips ML4D workshop.
- The publication was selected for a 15 min talk.

Consultant for Colombia's National Institute of Health |

June 2020 - December 2020

- Implemented several statistical models to compute the Covid-19 pandemic basic reproduction number in Colombia.
- The models were deployed for the use of Colombia's health ministry.
- This work led to a publication on the Bulletin of mathematical biology journal.

IRES international research experience in population dynamics and complex systems |

June 2015

- Worked developing a model for the foraging behaviour of Ateles beelzebub monkey in Tiputini reserve in the Ecuadorian Amazon.
- Work in association with the Arizona State University, project in charge of Juan Manuel Cordovez(jucordov@uniandes.edu.co)

Adjunct Faculty | *Universidad EAFIT*

January 2020 - June 2021

- In charge of the Mining massive datasets course for the data science M.Sc.

Teaching Assistant | *Universidad de los Andes*

January 2015 - June 2018

- Teaching assistant for the following courses: Linear algebra, Integral Calculus, Differential equations.

Education

Universidad de los Andes

March 2017

Bachelor of Science Mathematics, GPA 4.48/5.0, second out of a class of 13

Bogotá, Colombia

Universidad de los Andes

July 2018

Master of science Mathematics, GPA 4.6/5.0

Bogotá, Colombia

Skills

- | | | | |
|----------|-----------------|--------------------------|-------------------------|
| • R | • Deep learning | • Public clouds: AWS and | • Agile software dev |
| • Python | • Statistics | GCP | • Software architecture |

Talks

- 20 minute talk XXI congreso colombiano de matemáticas, June 2017
- 20 minute talk for a paper accepted to ML4D workshop on Neurips 2020

Volunteer work

ML training

October 2021

Volunteer teacher

Factored/DataScienceFem

- Taught the basics of machine learning and deep learning for free to women looking to do a career shift into data related roles.

Factored Ai Sessions

January 2020 – June 2020

Volunteer teacher

Factored

- Taught the basics of machine learning and deep learning for free to high schools seniors from public schools in Medellín Colombia.

Progresia Fenicia

January 2015 – June 2015

Volunteer teacher

Universidad de los Andes

- Helped highschool seniors from under-privileged background to prepare their exams to access higher education.