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## MARTÍN REYES HOLGUÍN

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### EDUCATION

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#### HARVARD UNIVERSITY

S.M, Computational Science & Engineering

Cambridge, MA

May 2023

Relevant Coursework: Machine learning, complex and Fourier analysis, stochastic processes.

#### HARVARD UNIVERSITY

A.B, Applied Mathematics to Computer Science | Secondary: Statistics | Citation: Chinese

Cambridge, MA

May 2023

Relevant Coursework: Multivariable calculus, linear algebra, real analysis, dynamical systems, natural language processing, algorithms, data structures, theory of computation, probability and inference, programming languages.

#### COLEGIO BOLÍVAR

Bachillerato Colombiano | American High School Diploma

Cali, Colombia

June 2019

### WORK EXPERIENCE

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#### CITI

Summer Quantitative Analyst Intern

New York, NY

June 2022 – Present

Will build mathematical and computational models for financial asset management.

#### HARVARD GROWTH LAB

Research Assistant

Cambridge, MA

February 2021 – Present

Implements recommender systems collaborative filtering models to recommend jobs and products for developing countries to propel their economies. Co-authors a research paper with Dr. Andrés Gómez-Liévano.

#### VIGILAMOS RH TIERRA MÉXICO

Data Science Intern

Mexico City, Mexico

January 2021 – January 2021

Replicated machine learning models that predict crime in Mexico. Coded a function to generate PDF reports of crime in municipalities and states in Mexico for their webapp.

#### COLLEGE SCHOLAR

Cofounder, Senior College Counselor, and Director of Technology

Remote

November 2019 – Present

Counsels students from underprivileged backgrounds in Latin America to study in colleges like Harvard, MIT, Stanford, etc. Created Google app scripts to automate processes and developed the webpage and student portal.

#### ENGAGING EDUCATION

Content Creation Specialist

Remote

November 2019 – December 2020

Programmed chatbots in YAML that teach interactive math lessons and explain math problems for the Lana app.

#### DEREK BOK CENTER FOR TEACHING AND LEARNING

Learning Lab Undergraduate Fellow

Cambridge, MA

October 2019 – June 2020

Created apps using Cinema 4D, Unity, D3.js for classes at Harvard to make learning more interactive.

### SKILLS

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Programming languages: Python, R, SQL, OCaml, LaTeX, JavaScript, HTML/CSS, Swift, Java, C, MATLAB

Libraries: Numpy, Pandas, Matplotlib, RShiny, Scikit Learn, PyTorch, TorchText, SciPy, Beautiful Soup, D3JS

Languages: Spanish, English, and French (Fluent); Chinese (Intermediate Proficiency)

Interests: Education, Violin, Piano, Guitar, Sustainability, Latin dance, AI for social good, proofs.

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## PROJECTS

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### POMBO EDUCATION

Developed an app that diagnoses educational inefficacies in the classroom. Designed the UI/UX for the application, a predictive model trained on data from 10,000 schools in Colombia, the firebase infrastructure, etc.

### QUESTIONS TO ATIS SQL QUERIES

Created a system that parses natural language questions and uses various models including logistic regression, naïve Bayes, rule-based, and seq2seq encoder-decoder models to generate SQL queries for the ATIS data set.

### MINI-ML LANGUAGE INTERPRETER

Implemented three interpreters of a subset of the OCaml language, each with a different semantic assumption.

### DISCRETE MATH EXPLORABLE EXPLANATIONS

Created RShiny webapps that calculated permutations, operations, conversions, subgroups, and Cayley graphs of different important groups. Created visualizations of Euclid's GCD, Fleury's, Prim's, and Kruskal's algorithms.

### CHUSPA APP

Developed iOS app that scans supermarket products and displays eco-footprint from life cycle assessment models.

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## LEADERSHIP AND TEACHING

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### HARVARD COMPUTER SCIENCE DEPARTMENT

Cambridge, MA

#### Computer Science Teaching Fellow

December 2021 – Present

Develops curriculum for the new class, COMPSCI 96: Machine Learning for Social Good. Mentors a team to model the amount of respirable crystalline silica from spectral data for the CDC. Hosts office hours, leads workshops, and grades assignments.

### HARVARD MATHEMATICS DEPARTMENT

Cambridge, MA

#### Mathematics Course Assistant

June 2021 – December 2021

Super CA for the 90-student intensive summer course in multivariable calculus, MATH S-21A. CA for the fall 2021 version of multivariable calculus, MATH 21A. Grades homework and quizzes and leads office hours and sections.

### HARVARD COLLEGE CANDELA LATIN DANCE TROUPE

Cambridge, MA

#### Choreographer and Treasurer

September 2020 – Present

Designed salsa, bachata, and merengue choreographies. Taught social and performance classes to 40+ students. Led team to classify and perform on Harvard Cultural Rhythms 35 and 36. Invited to the UPenn salsa conference.

### HARVARD ORGANIZATION FOR LATIN AMERICA

Cambridge, MA

#### Co-President and Secretary

September 2020 – Present

Invited guest speakers to enlighten us about current events in economics, STEM, and politics related to Latin America. Coordinated a fundraiser to help underprivileged children in Latin America. Organized social events.

### ESCUELA DE LA TRINIDAD

Cali, Colombia

#### Co-Founder and Director

August 2016 – June 2019

Developed EFL curriculum to develop sustainable cognitive habits in students. Implemented and tested strategies and presented the results at the Bolivar Forum to approximately 300 teachers from Colombia.