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## MARTÍN REYES HOLGUÍN

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### EDUCATION

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#### HARVARD UNIVERSITY

S.M, Computational Science & Engineering

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

Cambridge, MA

May 2023

#### HARVARD UNIVERSITY

A.B, Applied Mathematics

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

Cambridge, MA

May 2023

### WORK EXPERIENCE

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#### INCOMING SUMMER QUANTITATIVE ANALYST INTERN @ CITI

New York, NY | Jun. 2022 – Aug. 2022

Will build mathematical and computational models for financial asset management.

#### RESEARCH ASSISTANT @ HARVARD GROWTH LAB

Cambridge, MA | Feb. 2021 – Present

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

#### DATA SCIENCE INTERN @ VIGILAMOS TIERRA MÉXICO

Mexico City, Mexico | Jan. 2021 – Jan. 2021

Coded a function to make PDF reports of crime in municipalities and states in Mexico for their webapp. Evaluated ML models.

#### COUNSELOR AND DIRECTOR OF TECHNOLOGY @ COLLEGE SCHOLAR

Remote | Nov. 2019 – Jun. 2022

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

#### CONTENT CREATION SPECIALIST @ ENGAGING EDUCATION

Remote | Nov. 2019 – Dec. 2020

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

#### UNDERGRADUATE FELLOW @ DEREK BOK CENTER

Cambridge, MA | Oct. 2019 – Jun. 2020

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

### LEADERSHIP AND TEACHING

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#### MATHEMATICS AND STATISTICS TEACHING ASSISTANT @ HARVARD

Cambridge, MA | Jun. 2021 – Present

Graded homework, led section, and hosted office hours for fall and summer 2021 versions of MATH 21A: Multivariable Calculus and fall 2022 version of STAT 110: Introduction to Probability and Statistics.

#### COMPUTER SCIENCE TEACHING FELLOW @ HARVARD

Cambridge, MA | Dec. 2021 – May 2022

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 NIOSH. Holds office hours and workshops, and grades work.

#### CHOREOGRAPHER @ HARVARD CANDELA LATIN DANCE TROUPE

Cambridge, MA | Sep. 2020 – Jun. 2022

Designs and teaches choreographies. Programs lights and sound for the troupe's shows. Organizes intercollegiate performances.

#### CO-PRESIDENT @ HARVARD ORGANIZATION FOR LATIN AMERICA

Cambridge, MA | Sep. 2020 – Jun. 2022

Organized social, cultural, service, and academic events. Prepared sexual health and workplace rights workshops to Latinos in Boston. Held faculty dinners. Hosted the CEOs of Rappi, LaHaus, and NuBank as guest speakers.

### 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 natural language question to SQL queries translation system using naïve Bayes, rule-based, and seq2seq encoder-decoder machine learning models.

**MINI ML LANGUAGE INTERPRETER:** Implemented three OCaml interpreters with three different semantic assumptions.

**TYPE INFERENCE INTERPRETER:** Created a constraint-based type inference interpreter for an extended lambda calculus.

**DISCRETE MATH EXPLORABLE APPS:** Created RShiny webapps that calculated operations of 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 grocery products and displays eco-footprint from life cycle assessment models.

### 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)