Luis G. Polanco Contreras

https://lucho8908.github.io/
polanco2@msu.edu | 347.265.5263

EDUCATION

MICHIGAN STATE UNIVERSITY
PhD in Computational Mathematics, Science and Engineering
Aug 2016 - May 2022 (Expected)
East Lansing, MI
Computational Mathematics, Science and Engineering

UNIVERSIDAD DE LOS ANDES
MS in Mathematics
Aug 2014- May 2016
Bogota, Colombia
Department of Mathematics

BS in Mathematics
Jan 2007 - Dec 2013
Bogota, Colombia
Department of Mathematics

LINKS

Github:// lucho8908
LinkedIn:// luis-polanco

SKILLS

PROGRAMMING
Over 3000 lines:
Python • Matlab • R • LaTeX
Over 1000 lines:
C++ • Mathematica

LANGUAGES
English • Spanish (native)

EXPERIENCE

MICHIGAN STATE UNIVERSITY | Research Assistant
Spring 2022, Spring 2020, Spring 2019, 2018, 2017, Fall 2016 | East Lansing, MI

- My research focus on developing and analyzing method in topological data analysis to bring tools from algebraic topology and geometry into the world of data science and machine learning. I have a solid background in algebraic topology, deferential geometry, machine learning, probability and statistics.

MICHIGAN STATE UNIVERSITY | Graduate Teaching Assistant
2021, Fall 2020, Fall 2019, Fall 2018 | East Lansing, MI

- I assisted in developing and applying instructional material for undergraduate the classes: Introduction to Data Science, Introduction to Computational Modeling. As well as developed material for the graduate courses: Foundations in Computational Science and Engineering, Mathematical Foundations of Data Science and Topological Methods for the Analysis of Data.

PROCTER & GAMBLE | Marketing Intern
Spring 2011 | Bogotá, Colombia

- I worked as a marketing intern in Procter Gamble Colombia for the brand under the House care and Fabric care branches. I was in charge of administrative duties on top of arranging and attending client meeting to deploy and develop future marketing strategies for our brands.

PUBLICATIONS

A Comparative Study of Machine Learning Methods for Persistence Diagrams
with D. Barnes and J. A. Perea
Frontiers Artificial Intelligence 4 | 2021

Adaptive Template Systems: Data-driven Feature Selection for Learning with Persistence Diagrams
with J. A. Perea
18-th IEEE International Conference On Machine Learning And Applications | 2019 | Pages 1115 - 1121

Coordinatizing Data With Lens Spaces and Persistent Cohomology
with J. A. Perea
Proceedings of the 31-st Canadian Conference on Computational Geometry | 2019 | Pages 49-58

Método Montecarlo en estimación de parámetros.
with A. Noratto
Cap&Cua ISSN-e2145-5643 Vol. 8 Num. 1 | 2012 | Pages 1-12

Retos Inherentes a los Protocolos Aambientales luego de 2012: Una Nueva Coyuntura Politico-Ambiental.
Cap&Cua ISSN-e2145-5643 Vol. 5 Num. 1 | 2011 | Pages 14-17

Lógica Modal Híbrida: Nociones Básicas.
Cap&Cua, ISSN-e2145-5643 Vol. 3 Num. 1 | 2010 | Pages 9-13

Luis G. Polanco Contreras

https://www.egr.msu.edu/~polanco2/
polanco2@msu.edu | 347.265.5263

TALKS

Data driven torsion coordinates and Wasserstein stability
with J. A. Perea
Algebraic Topology: Methods, Computation, and Science (Virtual) | August, 2021

Coordinatizing Data With Lens Spaces and Persistent Cohomology
with J. A. Perea
Join Mathematics Meetings | January, 2020

Adaptive Template System: Data-Driven Feature Selection for Learning with Persistence Diagrams
with J. A. Perea
18-th IEEE International Conference on Machine Learning and Applications | December, 2019

Coordinatizing Data With Lens Spaces and Persistent Cohomology
with J. A. Perea
1-st Midwest Midwest Student Conference: Geometry and Topology meet Data Analysis and Machine Learning | May, 2019

AWARDS

Travel Fellowship
by American Mathematics Society | February 2019

Travel Fellowship
by Department of Computational Mathematics, Science and Engineering - Michigan State University | February 2018

Full-tuition Fellowship for Master's Degree
by Universidad de los Andes | 2014 -2015

Fellowship "Programa Prest&gio" (Prestige Program)
by Procter & Gamble | December 2010

Yerly Fellowship
by Universidad de los Andes | Decemmber 2008