

Luis G. Polanco Contreras

Data Scientists | Machine Learning | Researcher
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 +1 347-265-5263 | +57 312-435-1306

EDUCATION

MICHIGAN STATE UNIVERSITY

DUAL PHD IN COMPUTATIONAL
 MATHEMATICS, SCIENCE AND
 ENGINEERING AND MATHEMATICS
 Aug 2016 - May 2022

East Lansing, Michigan, US

Department of Computational
 Mathematics, Science and Engineering
 Department of Mathematics

UNIVERSIDAD DE LOS ANDES

MS IN MATHEMATICS

Jan 2014- Dec 2015

Bogotá, Colombia

Department of Mathematics

BS IN MATHEMATICS

Jan 2007 - Dec 2013

Bogotá, Colombia

Department of Mathematics

SKILLS

DATA SCIENCE

Topological Data Analysis • Machine
 Learning • Modeling • Data Visualization
 • Mathematics

PROGRAMMING

Python • R • Matplotlib •
 Matlab • \LaTeX • C++ • Mathematica

LANGUAGES

English • Spanish (native)

LINKS

Website:// Luis G. Polanco

LinkedIn:// [luis-polanco](#)

GitHub:// [lucho8908](#)

EXPERIENCE

MICHIGAN STATE UNIVERSITY | RESEARCH ASSISTANT

Spring 2022, Spring 2020, Spring 2019, 2018, 2017, Fall 2016 | East Lansing, MI

- Research focused on producing and analyzing methods in topological data analysis to bring tools from algebraic topology and geometry into the world of data science and machine learning. This research required a solid background in algebraic topology, differential geometry, machine learning, probability, and statistics.

MICHIGAN STATE UNIVERSITY | GRADUATE TEACHING ASSISTANT

2021, Fall 2020, Fall 2019, Fall 2018 | East Lansing, MI

- Developed and applied instructional material for undergraduate classes: Introduction to Data Science, and Introduction to Computational Modeling. As well as interactive materials and lectures 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 meetings 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 AMBIENTALES 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

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CONFERENCES

PERSISTENT CUP PRODUCT FOR QUASIPERIODICITY DETECTION

with J. A. Perea

Second Graduate Student Conference: Geometry and Topology meet Data Analysis and Machine Learning - GTDAML | July 2021

DATA DRIVEN TORSION COORDINATES AND WASSERSTEIN STABILITY

with J. A. Perea

Seminar series by Applied Algebraic Topology Research Network - AATRN | July, 2020

COORDINATIZING DATA WITH LENS SPACES AND PERSISTENT COHOMOLOGY

with J. A. Perea

Join Mathematics Meetings - JMM | 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 - IEEE ICMLA | December, 2019

COORDINATIZING DATA WITH LENS SPACES AND PERSISTENT COHOMOLOGY

with J. A. Perea

1-st 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 | Decemember 2008