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Esteban Fernández Morales

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RESEARCH INTERESTS

Theory and Methodology

- Bayesian statistics, high-dimensional data analysis, machine and statistical learning, shape analysis, survival data analysis, variable selection

Applications

- Bioinformatics, biostatistics, pathology imaging data, public health and environmental studies, statistical genomics/epigenomics, statistical modeling in epidemiology

EDUCATION

Bachelor of Science, Mathematics, Statistics Specialization — August 2017 – December 2020
The University of Texas at Dallas, Richardson, TX
Commencement Honors: Magna Cum Laude & Major Honors with Distinction
Advisor: Qiwei Li, Ph.D.
Thesis - Discovering Clinically Meaningful Shape Features for the Analysis of Tumor Pathology Images
GPA - 3.9/4.0

ACADEMIC EXPERIENCE

Research Assistant — January 2021 – Present
Department of Mathematical Sciences
The University of Texas at Dallas, Richardson, TX
Advisor: Qiwei Li, Ph.D.

Undergraduate Research Assistant — February 2020 – December 2020
Department of Mathematical Sciences
The University of Texas at Dallas, Richardson, TX
Advisor: Qiwei Li, Ph.D.

EXTRA-ACADEMIC EXPERIENCE

"Dynamics and data in the COVID-19 pandemic" — Summer 2020
American Institute of Mathematics (**AIM 2020**), San Jose, California
Project Title: A Comprehensive Data Analysis on Comorbidities and COVID-19 in Mexico
Advisors: Cordelia D. McGehee and Jack O'Brien, Ph.D.

INDUSTRY EXPERIENCE

Data Analyst – Intern September 2019 – January 2020
Wndyr, Dallas, TX

- Recommended customers to pursue with custom model (Python) deployed to Salesforce.
- Highlighted customer interest in new product, based on logistic regression model.
- Presented to board of directors the fiscal year projections for all available products.
- Designated budget, alongside supervisor, for the fiscal year.

Sales Operations Analyst – Intern June 2019 – August 2019
Masergy, Plano, TX

- Improved call response rates for sales team by analyzing optimal call and email times.
- Collaborated with board of directors to create a quarterly report card for the sales team.
- Distributed and improved staff training manuals using a Google Sheets script.
- Allocated sales personnel to territories, based on a set of criteria, using Excel VBA script.

AWARDS

Fellowship and Scholarship

- Academic Excellence Scholarship, The University of Texas at Dallas 2017 – 2021
- Lars Magnus Ericsson Scholarship, The University of Texas at Dallas 2018 – 2019

Other Awards

- Dean's List, The University of Texas at Dallas 2017

PUBLICATIONS

*__Corresponding author__/Co-corresponding author
+__First__/Co-first author

Submitted Manuscripts (First/corresponding-authored - Statistical Methodology)

1. **E. Fernández Morales**+, C. Zhang, G. Xiao, C. Moon, and Q. Li, "Discovering clinically meaningful shape features for the analysis of tumor pathology images"

SOFTWARE

Interactive Web Apps

1. Predicting Global COVID-19 Cases (with Qiwei Li)
   qiwei.shinyapps.io/PredictGlobalCOVID19/
2. Predicting Mexico COVID-19 Cases (with Qiwei Li)
   qiwei.shinyapps.io/MexicoCOVID19/
3. Simulating US COVID-19 Intervention with Mobility Data
   qiwei.shinyapps.io/PredictCOVID19Mobility/

Open Source R/C++ Code

4. SAFARI: Shape Analysis For AI Reconstructed Images
   github.com/estfernandez/SAFARI
5. Slide Image Segmentation and Extraction: Code to extract tumor objects in whole-slide images.
   github.com/estfernandez/Slide_Image_Segmentation_and_Extraction

Programming Skills

- C++, Java, LaTeX, MATLAB, Python, R, SAS, SQL, Unix Shell Scripting

TALKS

Contributed Poster Presentations

1. "Extracting Clinically Meaningful Features for the Analysis of Tumor Pathology Images," International Chinese Statistical Association 2020 Applied Statistics Symposium (**ICSA 2020**), Online

PROFESSIONAL ACTIVITIES

Membership

- AES Cultural Scholars