Brayan V. Ortiz

Contact:

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Education:

University of Washington, Seattle, WA
- Ph.D., Biostatistics, Standard Pathway, (*Expected June 2018*)

California State University Fullerton, Fullerton, CA
- B.A. Mathematics, (Probability and Statistics Concentration), 2013

Professional and Research Experience:

University of Washington, Department of Biostatistics, Seattle, WA
Research Assistant, Tim Thornton under NIH Statistical Genetics Training Grant, 2013-2014
- Ran principal component analyses to detect population structure such as admixture in genome wide association studies
- Software: `R` Statistical Software

Research Assistant, Noah Simon, 2014-2015, 2017-present
- Develop nonparametric penalized regression methodology, which included describing/proving theoretical properties and creating alternating direction method of multipliers solver
- Software: `Python (CVXPY, CVXOPT, SciPy, NumPy), C++ (Armadillo), R (Rcpp, RcppArmadillo)`

Research Assistant, Jim Hughes, 2015-present
- Develop Bayesian methodology incorporating information from multiple sources to predict pill-taking adherence in HIV prophylaxis clinical trials
- Software: `R, OpenBUGS, JAGS, STAN`

Teaching Assistant, Biostatistics 310 with Lyndia Brumback, 2017
- Provided supplemental lectures on topics such as data description, study design, screening, estimation hypothesis testing, categorical data analysis, and regression.
- Job duties included lecturing, grading, and preparing lecture slides.

Teaching Assistant, Summer Institute in Statistics for Big Data (SISBID), Visualization of Biomedical Big Data with Dianne Cook and Heike Hoffman
- Provided support during lectures on structured development of static and interactive graphics using `ggplot2` in `R`, especially in the context of exploring big data.

Amazon, Modeling and Optimization within Supply Chain Optimization Technologies, Seattle, WA
Research Scientist Intern, Andrew Bruce and Chunyi Wang, June - September 2017
- Collaborated with non-statisticians to define business/financial deliverables followed by collaborations with senior statisticians determining appropriate modeling goals
- Pulled, cleaned, and prepared data to be used in modeling
- Built predictive models to be deployed at a large scale
- Software: `R, Python (Pandas, XGBoost), SQL`

Yaqui Molecular, Seattle, WA *Statistics Consultant, 2015-2016*
- Collaborated with clinical immuno-oncologists to determine appropriate statistical methodology for identifying biomarkers associated with cancer outcomes.

- Ran statistical analyses focusing on identifying predictive/prognostic biomarkers in oncology, which includes survival analyses using Cox proportional hazards regression model.
- Based on simulation-based parametric power analyses, provided recommendations for future studies, such as which biomarkers to collect and estimated sample size needed to confidently detect an effect.
- Software: `R and Rmarkdown` for manuscript preparation

California State University Fullerton, Department of Mathematics, Fullerton, CA
Collaborator with Mori Jomshidian, NIH Funded MARC Program, 2011-2013
- Built logistic regression model, which predicts presence of multiple sclerosis based on performance in cognitive tasking tests.
- Software: `R`

University of Wisconsin, Madison, Department of Biostatistics, Madison, WI *Collaborator with Sushmita Roy, NSF Funded IBS-SRP, 2012*
- Ran genome-wide association study to determine association between Alzheimer's cognitive disease and single-nucleotide polymorphisms (SNPs).
- SNP data (> 15 gigabytes) collected from Alzheimer's Disease Neuro-Imaging database.
- Software: `PLINK, Python`

Honors, Awards, Scholarships:

- OpsTech Science Fair Grand Prize, "Think Big Award," with Sapphire Manthorpe (co-presenter), 2017
- Trainee, NIH Statistical Genetics Training Grant, University of Washington, 2013-2016
- Minority Access to Research Careers (MARC) Fellowship (NIH), 2011-2013
- CSUF Natural Sciences and Mathematics Symposium Competition Winner, 2012
- SACNAS, Outstanding Poster in Statistics, 2012
- CSUF Special Recognition for Undergraduate Research, 2013
- Joint Mathematics Meeting, San Diego, Outstanding Poster, 2013

Publications:

- Ortiz, B. and N. Simon, (2017). Mesh-Based Solutions for Nonparametric Penalized Regression. *In progress.*
- Ortiz, B., M. Jamshidian, and A. Khatoonabadi, (2013). A Statistical Approach to Validate a Cognitive Test for Multiple Sclerosis. Dimensions. Vol. 15. Pp. 105-114
- Ortiz, B., S. Roy, and R. Atlas, (2012). Identification and Characterization of Predictive Genomic Markers in Alzheimer's Disease. IBS-SRP Journal. pp. 121-125

Conferences

- Operations Technology Science Fair (OpsTech Science Fair), Amazon Operations Research. July 2017. Poster presentation. Amazon Confidential.
- BayesComp 2018, International Society for Bayesian Analysis. March 2018. Poster presentation. "Mesh Based Solutions for Nonparametric Regression."