Department of Statistics
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Anderson Bussing

Education

2021 – 26 **Ph.D. in Statistics**, University of South Carolina - Columbia
Advisor: Dr. Yen-Yi Ho

2019 – 21 **M.S. in Statistics**, University of Puerto Rico - Mayaguez
Advisor: Dr. Wolfgang Rolke

2010 – 16 **B.S. in Mathematics**, University of Texas - Austin
Double Major: BS in Mechanical Engineering

Work Experiences

Aug 2021 – present **Graduate Teaching Assistant**, *Department of Statistics*, USC
Jan 2023 – Aug 24 **Graduate Research Assistant**, *Yen-Yi Ho Lab*, USC
Jun 2019 – Mar 21 **Research Assistant**, *Profluent Trading LLC*, San Juan PR
Jan 2019 – May 21 **Graduate Teaching Assistant**, *Department of Mathematics*, UPR
Sep 2016 – Dec 18 **Operations Management Leadership Program**, *GE Oil & Gas*, Houston TX

Research Interests

- Computational Biology
- Joint Dependence Modeling
- Spatial Statistics
- High-dimensional Data
- Semi-parametric Inference
- Statistical Consulting
- Applications in Machine Learning and Data Science

Peer-reviewed Publications

[1] **Bussing, A.**, Marra, G., Fan, D., Shinohara, R., Tu, D., & Ho, Y. Y. (2025). scCOSMiX: A Mixed-Effects Framework for Differential Coexpression and Transcriptional Interactions Modeling in Single-Cell RNA-Seq. *Statistics in Medicine* 44, 18-19 (2025). https://doi.org/10.1002/sim.70213

[2] Yang, S., **Bussing, A.**, Marra, G. et al. Time-coexpress: temporal trajectory modeling of dynamic gene co-expression patterns using single-cell transcriptomics data. *BMC Bioinformatics* 26, 199 (2025). https://doi.org/10.1186/s12859-025-06218-w

Selected Ongoing Projects

[1] Cai, J., Y, **Bussing, A.**, Ma, T. F. (2025+). A Risk Sharing Rule for Peer-to-peer (P2P) Insurance for Hail Losses via Conditional Expectation. *Working Paper*.

[2] **Bussing, A.**, Roy, A., Ho Y. Y. (2025+). Modeling Dynamic Cross-Correlation in Spatial Transcriptomic Data. *Working Paper*.

[3] **Bussing, A.**, Marra G., Ho, Y. Y. (2025+). Smoothing parameter selection criteria for penalized likelihood inference in semiparametric simultaneous joint equation models with correlated random effects. *Working Paper*.

Teaching Experience

Fall 2022, 24, 25, Spring 24, 25 — **Instructor**, Elementary Statistics, USC

Spring 2023 — **Teaching Assistant**, Data Analysis II, USC

Fall 2020, Spring 21 — **Instructor**, Precalculus II, UPR

Selected Awards and Scholarships

2024 Outstanding Graduate Assistant, *Department of Statistics*, USC

2023 Outstanding Graduate Student in Academics, *Department of Statistics*, USC

2022 Outstanding First Year Graduate Student, *Department of Statistics*, USC

Computing

Software Development

`scDECO` R package for two different Bayesian models of differential coexpression, on [CRAN]

`scCOSMiX` R package for scCOSMiX method, on [GitHub]

`TIME-CoExpress` R package for TIME-CoExpress method, on [GitHub]

`Stock-Backtester` python package for backtesting rule-based stock trading strategies, on [GitHub]

`Options-Pricer` python implementation of three American options pricing methods, on [GitHub]

Computing Skills

Programming: Proficient in R and python. Some experience with MATLAB, SQL, VBA

Others: Experienced with SLURM (for high-performance computing)

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