

# Anderson Bussing

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## 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

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## 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

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## Research Interests

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

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## 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*. To appear.
- [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>

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## 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. (2026+). Smoothing parameter selection criteria for penalized likelihood inference in semiparametric simultaneous joint equation models with correlated random effects. *Working Paper*.

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## Teaching Experience

Fall 2022, 24, 25, **Instructor**, Elementary Statistics, USC  
Spring 24, 25  
Spring 2023 **Teaching Assistant**, Data Analysis II, USC  
Fall 2020, Spring 21 **Instructor**, Precalculus II, UPR

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## 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*

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## 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)