

Gray Stanton

PHD CANDIDATE · STATISTICS

Colorado State University, 1887 Campus Delivery, Fort Collins, CO 80526

✉ gray@graystanton.com | 🏠 www.graystanton.com | 📷 gray-stanton

Education

Colorado State University (CSU)

PHD STATISTICS

- Advisors: Haonan Wang & Louis Scharf

Fort Collins, CO

Expected Spring 2024

University of Pennsylvania (PENN)

BA MATHEMATICAL ECONOMICS

- Graduated summa cum laude

Philadelphia, PA

Sep. 2012 - May 2016

Professional Experience

- 2023-Now **Graduate Teaching Assistant**, Statistics, CSU
- 2020-Now **Statistical Consultant**, Lemma Analytics, LLC.
- 2021-2023 **Graduate Research Assistant**, Statistics, CSU
- 2019-2021 **Graduate Teaching Assistant**, Statistics, CSU
- 2018-2019 **Senior Business Analyst**, The Hartman Group, Inc.
- 2016-2018 **Business Analyst**, The Hartman Group, Inc.

Publications

PUBLISHED

- Stanton G**, Wang H, Dongliang D, Scharf L L. 2023. Multi-Channel Factor Analysis for Temporally and Spatially Correlated Time Series. 57th Annual Asilomar Conference on Signals, Systems, and Computers (ACSSC 2023), to appear.
- Stanton G**, Ramírez D, Santamaria I, Scharf L L, Wang H. 2023. Identifiability of Multi-Channel Factor Analysis. 57th Annual Asilomar Conference on Signals, Systems, and Computers (ACSSC 2023), to appear.
- Stanton G**, Irissappane A A. 2019. *GANs for Semi-Supervised Opinion Spam Detection*. Proceedings of the Twenty-Eighth International Joint Conference on Artificial Intelligence (IJCAI 2019), pp. 5204–5210.

IN REVIEW

- Stanton G**, Ramírez D, Santamaria I, Scharf L L, Wang H. *Multi-Channel Factor Analysis: Identifiability and Asymptotics*. IEEE Transactions on Signal Processing.

IN PREP

- Stanton G**, Wang H, Dongliang D, Scharf L L. *Dynamic Identification of Vehicle Pods via Multi-Channel Factor Decomposition*.
- Lin, M, **Stanton G**, Wang H. *Multivariate Functional Principal Component Analysis on Sets of Triangles*.

Research Interests

Multi-Channel Factor Analysis

APPLICATIONS IN SIGNAL PROCESSING

- Funded by CNS-1932413 for application of MFA to Vehicle-to-Vehicle & Vehicle-to-Network data fusion.

THEORETICAL DEVELOPMENT

- Dissertation: “Multi-Channel Factor Analysis: Properties, Extensions, and Applications”

CSU

2019-2023

2019-Now

Societal Context of Vehicular Dynamics

INTRINSIC GEOMETRY OF MULTI-VEHICLE CONFIGURATIONS

- Developed models for evolution of vehicular triangles in collaboration with Mengting Lin.

Multi-Neuron *in vivo* Spiketrain Analysis

CROSS-TRIAL STRUCTURAL BREAK DETECTION

- Developing extension of minimum description length model selection criteria to replicated point processes.

Awards

- 2023 James L., M. Leslie, & Edna Madison Award for Outstanding Graduate Student, CSU
Edward and Jeri Mulrow Scholarship for Public Sector Research, CSU
Departmental Nominee, College of Natural Sciences Graduate Student Teaching & Mentoring Award, CSU
- 2021 Graybill Award for Excellence In Linear Models, CSU

Presentations

CONTRIBUTED

- Stanton G**, Ramírez D, Santamaria I, Scharf L L, Wang H. 2023. *Identifiability of Multi-Channel Factor Analysis*. Poster: Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA.
- Stanton G**, Wang H, Dongliang D, Scharf L L. 2023. *Multi-Channel Factor Analysis for Temporally and Spatially Correlated Time Series*. Poster: Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA.
- Stanton G**. 2021. GLM Estimators from the Transformed Response. Research Talk: Neural Modeling and Interface Laboratory, University of Southern California.
- Stanton G**, Wang H. 2021. Traffic Stream Decomposition via Multi-Channel Factor Analysis. Research Talk: Electrical Engineering (Haonan Chen's Lab), Colorado State University.

Teaching Experience

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|-------------|---|-----|
| Fall 2023 | Intermediate Applied Statistical Methods (STAT 331), Instructor | CSU |
| Spring 2021 | Data Graphics and Visualization (DSCI 336), Instructor | CSU |
| | Statistical Research: Data, Design & Methods (STAT 472), Co-Instructor | CSU |
| | Mathematical Statistics (STAT 530), Teaching Assistant | CSU |
| Fall 2021 | Intermediate Applied Statistical Methods (STAT 331), Teaching Assistant | CSU |
| | Data Visualization Methods (STAA 566), Teaching Assistant | CSU |
| Spring 2020 | Statistical Research: Data, Design & Methods (STAT 472), Co-Instructor | CSU |
| | Statistics with Business Applications (STAT 204), Recitation Instructor | CSU |
| Fall 2019 | Statistics with Business Applications (STAT 204), Recitation Instructor | CSU |

Mentoring

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| Spring 2022 | Adam Kiehl, Honors Thesis Advisor & Committee Member | CSU |
| Sum. 2022 | Vanessa Kokoszka, Graduate Research Advisor | CSU |
| | Jin Peng, Graduate Research Advisor | CSU |
| Sum. 2021 | Vanessa Kokoszka, Graduate Research Advisor | CSU |

Outreach & Professional Development

JOURNALS REVIEWED FOR

Journal of the American Statistical Association (JASA)

PROFESSIONAL MEMBERSHIPS

American Statistical Association (ASA), Student Member

Mathematical Association of America (MAA), Student Member

Institute of Electrical and Electronics Engineers (IEEE), Student Member