**Jordan A. Awan**
jaa557@pitt.edu
Google Scholar

## RESEARCH INTERESTS

**Data Privacy**

Theoretical and applied problems in differential privacy; Statistical inference on privatized data; Theoretical guarantees for synthetic data.

**Statistics**

Simulation-based inference; Computational statistics, Functional data analysis, Causal inference.

**Applied Work**

Analysis of physiological signals; Acoustic Analyses; Pitch Estimation.

## EDUCATION

**Penn State University, University Park PA** **August 2016-May 2020**

Doctor of Philosophy, Statistics.

Advised by Aleksandra Slavković and Matthew Reimherr.

**Brandeis University, Waltham MA** **Fall 2014-Spring 2016**

Master of Arts, Mathematics.

**Clarion University of Pennsylvania, Clarion PA** **Fall 2011-Spring 2014**

Bachelor of Science, Mathematics.

Minors: Computer Science, Honors.

## PROFESSIONAL CAREER

**University of Pittsburgh, Department of Statistics, Pittsburgh PA** **August 2025-present**

Assistant Professor.

**MITRE** **June 2021-September 2025**

Differential privacy consultant for MITRE and Census Disclosure Avoidance System team.

**Purdue University, Department of Statistics, West Lafayette IN** **August 2020-August 2025**

Assistant Professor.

**Harvard University, Center for Research on Computation and Society (CRCS), Cambridge MA** **Summer 2018**

Visiting Graduate Student.

**Penn State University, Department of Statistics, University Park PA** **Summer 2017-Spring 2020**

Research Assistant.

Teaching Assistant (Spring 2019). STAT 401.

**Lafayette College, Department of Mathematics, Easton PA** **Summer 2013**

REU participant.

## HONORS & AWARDS

**ASHA Convention Visionary Session, American Speech and Hearing Association** **Fall 2024**

Presentation "Estimating Transglottal Airflow Using a Vortex Whistle System and the Phonation Quotient" selected as Visionary

**2024 College of Science Recognition Award, Purdue University** **Spring 2024**

Recognized as the recipient of high profile projects

**Faculty/Staff Recognition Award, Purdue Statistics** **Spring 2024**

**2nd place Best Poster Award, Statistics and Optimization in Data Science Workshop, Purdue University** **Summer 2023**

**Outstanding Poster Award, Midwest Machine Learning Symposium** **Spring 2023**

**Regina and Norman Carroll Research Award for 2022, Purdue Statistics** **Spring 2023**
Recognized for distinctive contributions to statistical science

**Journal of Voice 2022 Best Paper Award** **Spring 2023**
Best Paper in the Speech-Language Pathology category

**The Voice Foundation Best Poster Award** **Summer 2021**

**Penn State 2020 Alumni Dissertation Award** **Spring 2020**

**PSU Statistics 50$^{th}$ Anniversary Best Poster Award** **Spring 2018**

**August and Ruth Homeyer Graduate Fellowship, PSU** **Fall 2017-Spring 2018**

**Best Performance on Applied Qualifying Exam, PSU Statistics** **Summer 2017**

**Stephen B. Brumbach Distinguished Graduate Fellowship, PSU** **Fall 2016-Spring 2017**

**GAANN Fellowship** **Fall 2014-Summer 2016**

**MAA Outstanding Student Poster Award** **Winter 2014**

**Clarion University France-Allison Presentation Award** **Fall 2013**

**MAA Outstanding Student Presentation Award** **Summer 2013**

**Board of Governors Academic Tuition Scholarship** **Fall 2011-Spring 2014**

## SUBMITTED PAPERS & PREPRINTS

1. Cho, Y.-H., **Awan, J.** "Beyond Data Splitting: Full Conformal Prediction by Differential Privacy." arXiv:2603.07522.
2. Awan, S., **Awan, J.**, McKenna, V., Gifford, S., Burns, E., Sun, Z., Chen, J., Eddins, D. "Effect of Vowel Type on Aerodynamic Measures of Estimated Subglottal Pressure and Airflow."
3. Chen, Y.-W., Pasupathy, R., **Awan, J.** "Near-Optimal Private Tests for Simple and MLR Hypotheses." arXiv:2601.21959.
4. Miglioli, C., **Awan, J.** "Incomplete U-Statistics of Equireplicate Designs: Berry–Esseen Bound and Efficient Construction." arXiv:2510.20755.
5. Wang, Z., Chang, A., **Awan, J.** "Optimal Debiased Inference on Privatized Data via Indirect Estimation and Parametric Bootstrap." arXiv:2507.10746.
6. Chen, Y.-W., Sanghi, P., **Awan, J.** "Particle Filter for Bayesian Inference on Privatized Data." arXiv:2505.00877.
7. Li, A., He, D., Chen, J., **Awan, J.**, Eddins, D., Awan, S. "Mitigating Aliasing in CFD-CAA Simulations: A Time-Domain Filter Approach."
8. Eng, K., **Awan, J.**, Ju, N., Rao, V., Gong, R. "dapper: Data Augmentation for Private Posterior Estimation in R." arXiv:2412.14503.
9. Ohnishi, Y., **Awan, J.** "Differentially Private Covariate Balancing Causal Inference." arXiv:2410.14789.
10. Cho, Y., **Awan, J.** "Formal Privacy Guarantees with Invariant Statistics." arXiv:2410.17468.
11. **Awan, J.**, Barrientos, A. F., Ju, N. "Statistical Inference for Privatized Data with Unknown Sample Size." arXiv:2406.06231.

## REFEREED PUBLICATIONS

1. Wang, Z., Cheng, G., **Awan, J.** (2025) "Differentially Private Bootstrap: New Privacy Analysis and Inference Strategies." *Journal of Machine Learning Research.* Volume 26, Issue 257, Pages 1-57.
2. Awan, S., **Awan, J.**, Bonilha, H., Gillespie, A., McKenna, V., Chen, J., Eddins, D. (2025) "Using a Vortex Whistle System to Estimate Phonatory Airflow via the Phonation Quotient." *Journal of Voice.* Available Online.
3. **Awan, J.**, Edwards, A., Bartholomew, P., Sillers, A. (2025) "Best Linear Unbiased Estimate from Privatized Histograms." *Journal of Machine Learning Research.* Volume 26, Issue 174, Pages 1-41.
4. Chen, Y.-W., Pasupathy, R., **Awan, J.** (2025) "Optimal Survey Design for Private Mean Estimation." *Proceedings of the 42nd International Conference on Machine Learning.* Accepted.
5. **Awan, J.**, Wang, Y. (2025) "Differentially Private Kolmogorov-Smirnov-Type Tests." *Electronic Journal of Statistics.* Volume 19, No. 1, Pages 718-744.
6. Ohnishi, Y., **Awan, J.** (2025) "Locally Private Causal Inference for Randomized Experiments." *Journal of Machine Learning Research.* Volume 26, No. 14, Pages 1-40.
7. Awan, S., **Awan, J.** (2025) "Comparison of Methods of Eliciting Vital Capacity: Forced vs. Slow Vital Capacity." *Journal of Voice.* Available online.
8. **Awan, J.**, Cai, Z. (2025) "One Step to Efficient Synthetic Data." *Statistica Sinica.* Volume 35, Pages 531-569.
9. **Awan, J.**, Wang, Z. (2025) "Simulation-Based Finite-Sample Inference for Privatized Data." *Journal of the American Statistical Association.* Pages 1-14.
10. **Awan, J.**, Ramasethu, A. (2024) "Optimizing Noise for $f$-Differential Privacy via Anti-Concentration and Stochastic Dominance." *Journal of Machine Learning Research.* Volume 25, Number 351, Pages 1-32.
11. Kang, T., Kim, S., Sohn, J., **Awan, J.** (2024) "Differentially Private Topological Data Analysis." *Journal of Machine Learning Research.* Volume 25, No. 189, Pages 1-42.
12. **Awan, J.**, Bernardi, O. (2024) "Tutte Polynomials for Regular Oriented Matroids." *Discrete Mathematics.* Volume 347, Number 1.
13. **Awan, J.**, Vadhan, S. (2023) "Canonical Noise Distributions and Private Hypothesis Tests." *Annals of Statistics.* Volume 51, Number 2, Pages 547-572.
14. **Awan, J.**, Rao, V. (2023) "Privacy-Aware Rejection Sampling." *Journal of Machine Learning Research.* Volume 24, No. 74, Pages 1-32.
15. Awan, S., Shaikh, M., **Awan, J.,** Abdalla, I., Lim, K., Misono, S., (2023) "Smartphone Recordings are Comparable to 'Gold Standard' Recordings for Acoustic Measurements of Voice." *Journal of Voice.* Available online.
16. Feinstein, H., Daşdöğen, Ü., **Awan, J.,** Awan, S., Verdolini Abbott, K. (2023) "Comparative Analysis of Two Methods of Perceptual Voice Assessment." *Journal of Voice.* Available online.
17. **Awan, J.**, Dong, J. (2022) "Log-Concave and Multivariate Canonical Noise Distributions for Differential Privacy." *Advances in Neural Information Processing Systems 36*, 34229-34240.
18. Ju, N., **Awan, J.**, Gong, R., Rao, V. (2022) "Data Augmentation MCMC for Bayesian Inference from Privatized Data." *Advances in Neural Information Processing Systems 36*, 12732-12743.
19. **Awan, J.**, Frechette, C., Li, Y., McMahon, E. (2022) "Demicaps in $AG(4,3)$ and their Relation to Maximal Cap Partitions." *Graphs and Combinatorics.* Volume 83, No. 193.
20. Li, A., Chen, J., **Awan, J.**, Eddins, D., Awan, S. (2022) "Performance Analysis and Parametric Study of Vortex Whistle." *Proceedings of the ASME 2022 Fluids Engineering Division Summer Meeting. Volume 1: Fluid Applications and Systems (FASTC); Fluid Measurement and Instrumentation (FMITC); Fluid Mechanics (FMTC).* Toronto, Ontario, Canada. August 3–5, 2022. V001T01A018. ASME.
21. Li, A., **Awan, J.**, Chen, J., Eddins, D., Awan, S. (2022) "Enhancing the Vortex Whistle for Measures of Respiratory Capacity via CFD and CAA." *Journal of Biomechanical Engineering.* Volume 144, Issue 11.
22. Awan, S., **Awan, J.** (2022) "Use of a Vortex Whistle for Measures of Respiratory Capacity." *Journal of Voice.* Volume 36, Issue 5, Pages 630-636. (**Best Paper Award**)

23. **Awan, J.**, Slavković, A. (2021) "Structure and Sensitivity in Differential Privacy: Comparing $K$-Norm Mechanisms." *Journal of the American Statistical Association*. Volume 116, Number 534, 935-954.
24. **Awan, J.**, Slavković, A. (2020) "Differentially Private Inference for Binomial Data." *Journal of Privacy and Confidentiality*. Volume 10, No. 1.
25. **Awan, J.**, Bernardi, O. (2020) "Tutte Polynomials for Directed Graphs." *Journal of Combinatorial Theory, Series B*. Volume 140, 192-247.
26. Awan, S., **Awan, J.** (2020) "A Two-Stage Cepstral Analysis Procedure for the Classification of Rough Voices." *Journal of Voice*. Volume 34, Issue 1, 9-19.
27. Reimherr, M., **Awan, J.** (2019) "KNG: The K-Norm Gradient Mechanism." *Advances in Neural Information Processing Systems 33*. 10208-10219.
28. Reimherr, M., **Awan, J.** (2019) "Elliptical Perturbations for Differential Privacy." *Advances in Neural Information Processing Systems 33*. 10185-10196.
29. **Awan, J.**, Kenney, A., Reimherr, M., Slavković A. (2019) "Benefits and Pitfalls of the Exponential Mechanism with Applications to Hilbert Spaces and Functional PCA." *Proceedings of the 36th International Conference on Machine Learning*, 97:374-384.
30. **Awan, J.**, Slavković, A. (2018) "Differentially Private Uniformly Most Powerful Tests for Binomial Data." *Advances in Neural Information Processing Systems 32*, 4208-4218.
31. Gaskill, C., **Awan, J.**, Watts, C., Awan, S. (2016) "Acoustic and Perceptual Classification of Within-sample Normal, Intermittently Dysphonic, and Consistently Dysphonic Voice Types." *Journal of Voice*, Volume 31, Issue 2, Pages 218-228.
32. Awan, S., **Awan, J.** (2013) "The Effect of Gender on Measures of Electroglottographic Contact Quotient." *Journal of Voice*, Volume 27, Issue 4, 433-440.

## BOOK CHAPTERS

1. **Awan, J.**, Gong, R. (2024). "Statistical Inference and Differential Privacy." *In* Drechsler, J., Kifer, D., Reiter, J., & Slavković, A. (Eds.), *Handbook of Sharing Confidential Data: Differential Privacy, Secure Multiparty Computation, and Synthetic Data*. Chapman and Hall/CRC.

## OTHER PUBLICATIONS

1. **Awan, J.** (2024). "Here's How Machine Learning can Violate your Privacy." *The Conversation*. May 23, 2024.
2. Habib, S., Pires, B., Benedetto, G., Rodriguez, R., **Awan, J.**, Stanley, J., Totty, E., Germinario, G., & Stevenson, R. (2023). "Automated Synthetic Data Validation: Applying Noise Injection for Disclosure Avoidance." *Joint Statistical Meetings (JSM)*, Toronto, Canada.
3. **Awan, J.**, Reimherr, M., Slavković, A. (2020). "Formal Privacy for Modern Nonparametric Statistics." *CHANCE* 33, No. 4. 43-49.
4. Awan, S., **Awan, J.**, Watts, C., S. Gaskill, C. (2018). "Response to Aichinger and Kubin Re: Letter to the Editor "Acoustic and Perceptual Classification of Within-Sample Normal, Intermittently Dysphonic, and Consistently Dysphonic Voice Types"." *Journal of Voice*. Issue 32, No. 3, 383-384.

## GRANTS

**NIH R01: Deconstructing Voice Therapy: Towards Enhanced Communication Outcomes, Co-I** **2025-2030**

Award number: 1R01DC022026-01A1

Co-investigator. PI: Dr. Amanda Gillespie. $2,821,462 for 5 years.

Directly responsible for $\approx \$300,000$.

**NIH R01: Vital Capacity & Airflow Measurement for Voice Evaluation: A Vortex Whistle System, MPI** **2023-2028**

Award number: R01 DC020799-01A1

One of 4 MPIs, along with Dr. Shaheen Awan, Dr. Jun Chen, and Dr. Amanda Gillespie. $3,129,418 for 5 years.

Directly responsible for $\approx \$450,000$.

**NSF SES: Simulation-Based Inference for Differential Privacy, PI** **2022-2026**

Principal investigator, along with Co-PI Dr. Roberto Molinari. $450,000.

## RESEARCH PRESENTATIONS

**ENAR 2026, Indianapolis, IN** **March 2026**

Simulation-Based, Finite-Sample Inference for Privatized Data

**University of Pittsburgh, Machine Learning Seminar, Department of Mathematics, Pittsburgh, PA** **February 2026**

Differentially Private Bootstrap: New Privacy Analysis and Inference Strategies

**University of Pittsburgh, Department of Biostatistics, Pittsburgh, PA** **January 2026**

Simulation-Based, Finite-Sample Inference for Privatized Data

**Capital One, McLean VA (virtual)** **January 2026**

Best Linear Unbiased Estimate from Privatized Contingency Tables

**National Institute for Research in Digital Science and Technology (Inria), Montpellier, France (virtual)** **November 2025**

Differentially Private Bootstrap: New Privacy Analysis and Inference Strategies

**Joint Statistical Meetings, Nashville, TN** **August 2025**

Best Linear Unbiased Estimate from Privatized Histograms

**University of Pittsburgh, Department of Statistics, Pittsburgh, PA** **December 2024**

Simulation-Based, Finite-Sample Inference for Privatized Data

**Joint Statistical Meetings, Portland, OR** **August 2024**

Panel: Evaluating Statistical Disclosure Control Techniques based on the Risk and Utility of Privacy-Protected Data

**Auburn University, Department of Mathematics and Statistics, Auburn, AL** **April 2024**

Simulation-Based, Finite-Sample Inference for Privatized Data

$25^{th}$ **Annual CERIAS Security Symposium, Purdue University, West Lafayette, IN** **April 2024**

Valid Statistical Inference on Privatized Data

**Joint Statistical Meetings, Toronto Canada** **August 2023**

Simulation-Based Inference for Privatized Data

**Air Force Institute of Technology, Department of Mathematics and Statistics, Wright-Patterson Air Force Base, OH** **January 2023**

Bayesian Inference on Privatized Data

**Auburn University, Statistics and Data Science Seminar, Online** **September 2022**

Bayesian Inference from Privatized Data

**Statistical Learning and Differential Privacy, Bath U.K. (online)** **September 2022**

Data Augmentation MCMC for Bayesian Inference from Privatized Data

**Joint Statistical Meetings, Washington D.C.** **August 2022**

Posterior Inference on Privatized Data via Data Augmentation MCMC

**Workshop on the Analysis of Census Noisy Measurement Files and Differential Privacy, Rutgers University** **April 2022**

Posterior Inference on Privatized Data via Data Augmentation MCMC

**Computational & Methodological Statistics Meeting, Online** **December 2021**
Canonical noise distributions and private hypothesis tests

**Privacy in Machine Learning, Virtual NeurIPS Workshop** **December 2021**
Canonical noise distributions and private hypothesis tests

**Privacy in Machine Learning, Virtual NeurIPS Workshop** **December 2021**
Privacy-aware rejection sampling

**Privacy Preserving Machine Learning, Virtual ACM CCS Workshop** **November 2021**
Canonical noise and private hypothesis tests

**Michigan State University, Department of Statistics, Online** **November 2021**
Canonical noise and private hypothesis tests

**Invited Panel: Virtual Symposium on Data Privacy, ASA Nevada Chapter** **September 2021**
Canonical noise distributions and private hypothesis tests

**2021 Joint Statistical Meetings, Online** **August 2021**
Approximate co-sufficient sampling with applications to goodness of fit tests and synthetic data

**2020 Joint Statistical Meetings, Online** **August 2020**
KNG: The K-norm gradient mechanism

**University of Wisconsin-Madison, Department of Statistics, Madison WI** **February 2020**
Differentially private inference for binomial data

**Lafayette College, Department of Mathematics, Easton PA** **February 2020**
Differentially private inference for binomial data

**George Mason University, Department of Statistics, Fairfax VA** **February 2020**
Differentially private inference for binomial data

**Bucknell University, Department of Mathematics, Lewisburg PA** **Spring 2020**
Differentially private inference for binomial data

**Purdue University, Department of Statistics, West Lafayette IN** **Spring 2020**
Differentially private inference for binomial data

**2019 Joint Statistical Meetings, Denver CO** **Summer 2019**
Benefits and pitfalls of the exponential mechanism

**36th International Conference Machine Learning, Long Beach CA** **Summer 2019**
Benefits and pitfalls of the exponential mechanism

**Simons Institute for the Theory of Computing, Berkeley CA** **April 2019**
Differentially private UMP hypothesis tests for Bernouilli data

**Computational & Methodological Statistics Meeting in Pisa, Italy** **December 2018**
Differentially private UMP hypothesis tests for Bernouilli data

**2018 Joint Statistical Meetings, Vancouver Canada** **July 2018**
Optimizing finite sample performance under differential privacy

**Statistical Society of Canada Annual Meeting, McGill University, Montreal Canada** **June 2018**
Optimizing finite sample performance under differential privacy

**Mathematical Foundations of Data Privacy, Banff International Research Station (BIRS), Banff Canada** **May 2018**

Structure and sensitivity in DP: comparing $K$-norm mechanisms

**Stochastic Modeling and Computational Statistics Seminar at Penn State, University Park PA** **February 2018**

Structure and sensitivity in DP: comparing $K$-korm mechanisms

**MIT Combinatorics Seminar, Cambridge MA** **April 2016**

Tutte polynomials for directed graphs and oriented matroids

**Brandeis Graduate Student Seminar, Waltham MA** **April 2016**

Tutte polynomials for directed graphs and oriented matroids

**Brandeis Combinatorics Seminar, Waltham MA** **January 2016**

Tutte polynomials for directed graphs and oriented matroids

**Brandeis Mathematics Graduate Student Seminar, Waltham MA** **Fall 2014**

Maximal caps and substructures in $AG(4, 3)$

**Pi Mu Epsilon Conference, Youngstown OH** **Spring 2014**

Maximal caps and substructures in $AG(4, 3)$

**Joint Math Meetings, Baltimore MD** **Winter 2014**

Maximal caps and substructures in $AG(4, 3)$

**Clarion University Honors Presentations, Clarion PA** **Fall 2013**

Results on demicaps in $AG(4, 3)$

**Mathfest Conference, Hartford CT** **Summer 2013**

Maximal caps and substructures in $AG(4, 3)$

**POSTERS**

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**Thirty-Sixth Conference on Neural Information Processing Systems, New Orleans, LA (online)** **November 2022**

Log-Concave and Multivariate Canonical Noise Distributions for Differential Privacy

**Thirty-Sixth Conference on Neural Information Processing Systems, New Orleans, LA (online)** **November 2022**

Data Augmentation MCMC for Bayesian Inference from Privatized Data

**Privacy in Machine Learning, Virtual NeurIPS Workshop** **December 2021**

Canonical noise distributions and private hypothesis tests

**Privacy in Machine Learning, Virtual NeurIPS Workshop** **December 2021**

Privacy-aware rejection sampling

**Privacy Preserving Machine Learning, Virtual ACM CCS Workshop** **November 2021**

Canonical noise and private hypothesis tests

**Privacy Preserving Machine Learning, Virtual ACM CCS Workshop** **November 2021**

Privacy-aware rejection sampling

**Thirty-Third Conference on Neural Information Processing Systems, Vancouver Canada** **December 2019**

Elliptical perturbations for differential privacy

**Thirty-Third Conference on Neural Information Processing Systems, Vancouver Canada** **December 2019**

$K$-Norm gradient mechanism for private empirical risk minimization

**36th International Conference on Machine Learning, Long Beach CA** **Summer 2019**
Benefits and pitfalls of the exponential mechanism

**Thirty-second Conference on Neural Information Processing Systems, Montreal Canada** **December 2018**
Differentially private uniformly most powerful tests for binomial data

**Theory and Practice of Differential Privacy in 25th ACM Conference on Computer and Communications Security, Toronto Canada** **October 2018**
Differentially private uniformly most powerful tests for binomial data

**50th Anniversary Conference at Penn State Department of Statistics, University Park PA** **May 2018**
Optimizing finite sample performance under differential privacy

**Rao Prize Conference at Penn State, University Park PA** **May 2017**
Maximum likelihood estimation with differential privacy

**Joint Math Meetings, Baltimore MD** **Winter 2014**
REU results on maximal caps and substructures in $AG(4, 3)$

## OTHER PRESENTATIONS

**Lilly Purdue Statistics Seminar, Eli Lilly and Company, Indianapolis IN** **Spring 2024**
Statistical Inference with Differential Privacy

**Open DP Community Workshop** **Summer 2020**
Lightning talk on Binomial inference under differential privacy

**Penn State Statistics Graduate Student Association Workshop** **Fall 2018**
Introduction to differential privacy

**Center for Research on Computation and Society, Harvard University** **Summer 2018**
Introduction to differential privacy

**Penn State Statistics Graduate Student Association Workshop** **Fall 2017**
Introduction to differential privacy

**Penn State DS 300: Privacy and Security for Data Sciences** **Fall 2017**
Introduction to differential privacy

**Brandeis Mathematics Graduate Student Seminar** **Fall 2015**
A proof of the 5 color theorem

**Brandeis Combinatorics Seminar** **Spring 2015**
Topics in matroid representability

**Brandeis Mathematics Graduate Student Seminar** **Spring 2015**
Topics regarding the Tutte polynomial

**Pi Mu Epsilon Conference, Youngstown OH** **Spring 2013**
A solution for the 2013 COMAP MCM problem A

**Clarion University High School Mathematics Competition** **Fall 2012**
Mental math algorithms with proofs and examples

**Cumberland Valley Math Modeling Challenge at Shippensburg University** **Fall 2011**
A model to predict the economic impacts of different voting systems

## TEACHING EXPERIENCE

**University of Pittsburgh, Department of Statistics, Instructor** **Fall 2025-present**

STAT 3692: Differential Privacy, Fall 2025

STAT 1261/2260: Introduction to Data Science, Spring 2026

**Purdue University Department of Statistics, Instructor** **Fall 2020-Spring 2025**

CS/STAT 242: Introduction to Data Science, Spring 2024

STAT 598: Differential Privacy, Fall 2022, Spring 2025

MA/STAT 519: Probability Theory, Fall 2021, Spring 2023, Spring 2025

STAT 692: Research Seminar, Fall 2021, Spring 2022

STAT 417: Statistical Theory, Fall 2020 (online), Fall 2022

**Pennsylvania State University Department of Statistics, Instructor** **Spring 2019**

Introduction to Probability and Statistics with R for Engineers

**Brandeis University Department of Mathematics, Instructor** **Fall 2015, Spring 2016**

Integral Calculus

**Brandeis University Department of Mathematics, Grader** **Fall 2014, Spring 2015**

Multivariate Calculus, Linear Algebra

**Brandeis University Department of Mathematics, Tutor** **Fall 2014, Spring 2015**

Pre-Calculus, Calculus I & II

**Clarion University Department of Academic Enrichment, Tutor** **Fall 2011-Spring 2014**

Finite Mathematics, Pre-Calculus, Calculus I & II, Linear Algebra

## SOFTWARE DEVELOPMENT

**Canonical Noise Mechanism in OpenDP** **2022-2024**

Implementation of the canonical noise distributions in "Canonical Noise Distributions and Private Hypothesis Tests" within the OpenDP framework. In collaboration with Aishwarya Ramasethu, Yu-Ju Ku, and Michael Shoemate.

`SimBaRepro`**: Simulation-Based Finite Sample Inference via Repro Samples** **Summer 2025**

R package implementation of the method in "Simulation-Based Finite Sample Inference for Privatized Data." In collaboration with Xinlong Du and Zhanyu Wang. Available on CRAN.

`dapper`**: Data Augmentation for Private Posterior Estimation in R** **Summer 2024**

R package implementation of the method in "Data Augmentation MCMC for Bayesian Inference from Privatized Data." In collaboration with Kevin Eng and Drs. Ruobin Gong, Nianqiao Ju, and Vinayak Rao. Available on CRAN.

`binomialDP`**: Differentially Private Inference for Binomial Data** **Summer 2020**

R package implementation of UMP tests and UMA confidence intervals for Binomial test statistics under differential privacy. In collaboration with Tran Tran and Dr. Aleksandra Slavković.

## SERVICE

**Journal Referee**

Annals of Statistics, Journal of the Royal Statistical Society Series B, Journal of the American Statistical Association, Neural Information Processing Systems, International Conference on Machine Learning, Journal of Privacy and Confidentiality, Journal of Computational and Graphical Statistics, Statistica Sinica, among others

**Co-Guest-Editor, Statistical Theory and Related Methods** **Fall 2025-present**

Special issue on differential privacy

**Colloquium Chair, University of Pittsburgh Statistics** **Fall 2025-Spring 2026**
Organized the University of Pittsburgh Statistics seminar, invited speakers

**Program Committee Member, Theory and Practice of Differential Privacy** **2021, 2024, 2026**
Reviewed submissions and helped organize the workshop

**Pre-Examiner for PhD Thesis, University of Helsinki** **Summer 2025**
Reviewed the PhD thesis of Ossi Raisa

**Session Organizer, Bayesian, Fiducial, & Frequentist Conference (BFF9)** **Spring 2025**
Organized a session on statistical inference on privatized data

**PhD Qualifying Exam Committee, Purdue University Statistics** **Spring 2025**
Wrote exam questions and helped to administer the exam

**Faculty Mentor, Science Scholars Program, Purdue University** **Fall 2024-Spring 2025**
Mentored an undergraduate student from an under-represented minority background

**Program Committee, AAAI** **Fall 2024**
Reviewed articles for the conference

**Program Committee, Fairness, Accountability, and Transparency (FAccT)** **Spring 2023**
Reviewed submissions for the workshop

**Pre-Examiner for PhD Thesis, Aalto University** **Spring 2023**
Reviewed PhD thesis of Joonas Jalko

**Colloquium Chair, Purdue University Statistics** **Fall 2021-Spring 2022**
Organized the Purdue Department of Statistics seminar, invited speakers

**Diversity and Inclusion Committee, Purdue University Statistics** **2021-2025**

**Program Committee, NeurIPS Workshop: Privacy and Machine Learning** **Fall 2021**
Reviewed submissions and helped organize the workshop

**Program Committee, CCS Workshop: Privacy Preserving Machine Learning** **Fall 2021**
Reviewed submissions and helped organize the workshop

**Graduate Student Admissions, Purdue University Statistics** **2021-2025**

**Distinguished Theme Seminar Series, Purdue University** **Fall 2020-Fall 2023**
Member of the organizing committee (Spring 2021-Fall 2021)
Seminar Moderator (Fall 2020, Fall 2021)

**Hiring Committee, Purdue University** **Fall 2020 - present**
Assistant Professor Search; Escort for interviewees (Fall 2020-Spring 2021)
Assistant and Associate Professor Search (Fall 2021-Spring 2022)
Dream Hire Search (Fall 2023)
Assistant Professor Search (Fall 2024-Spring 2025)

## POSTDOCTORAL ADVISOR

**Cesare Miglioli, Postdoctoral Researcher** **Fall 2024-present**

## THESIS ADVISOR

**Yu Wei Chen, Ph.D. Student in Statistics, Purdue University** **Spring 2024-present**

Co-advised by Raghu Pasupathy

**Young Hyun Cho, Ph.D. Student in Statistics, Purdue University** **Spring 2023-present**
Co-advised by Will Wei Sun
Note that due to an administrative technicality, I am not listed as co-chair on the thesis

**Yuki Ohnishi, Ph.D. Student in Statistics, Purdue University** **Summer 2022-Spring 2023**
Co-advised by Arman Sabbaghi
First job: Postdoctoral Associate, Yale School of Public Health

**Zhanyu Wang, Ph.D. Student in Statistics, Purdue University** **Fall 2021-Fall 2023**
Co-advised by Guang Cheng (UCLA)
First job: Research Scientist, Meta

**OTHER SUPERVISED STUDENTS**

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**Feier Chang, Ph.D. Student in Biostatistics, University of Pittsburgh** **Spring 2026-present**
Differentially private and federated learning for generalized linear models

**Behrooz Moosavi, Ph.D. Student in Economics, University of Pittsburgh** **Spring 2026-present**
Differentially private mechanism design for public policy

**Haotian Chen, Ph.D. Student, Purdue University** **Fall 2025-present**
Functional data analysis and Gaussian processes for differential privacy

**Arin Chang, Ph.D. Student, Purdue University** **Fall 2024-present**
Indirect inference and parametric bootstrap for privatized data
Hamiltonian MCMC for Bayesian inference on privatized data

**Leo Navarro, Undergraduate Student, Purdue University** **Summer 2024-present**
Optimize Bayesian inference on privatized data

**Kefan Gu, Undergraduate Student, Purdue University** **Summer 2024-Fall 2024**
Optimize Bayesian inference on privatized data

**Pranav Bhakti, Undergraduate Student,Purdue University** **Spring 2024-Summer 2025**
Simulations for Bayesian inference on privatized data

**Xinlong Du, M.S. Student, Purdue University** **Spring 2024-Summer 2025**
R Package development for simulation-based inference

**Samuel Forfang, Undergraduate Student, Purdue University** **Spring 2024**
R Package development for simulation-based inference

**Aidan Davis, Undergraduate Student, Purdue University** **Spring 2024**
R Package development for simulation-based inference

**Andrew Liu, M.S. Student, Purdue University** **Fall 2023-Spring 2025**
Optimize the subsample and aggregate method for confidence intervals

**Aishwarya Ramasethu, M.S. Student, Purdue University** **Fall 2022-Spring 2023**
Research discrete canonical noise distributions and implement binomialDP in OpenDP

**Yu-Ju Ku, M.S. Student, Purdue University** **Summer 2022-Spring 2023**
Implement binomialDP in OpenDP

**Burla Ondes, Ph.D. Student in I.E., Purdue University** **Summer 2022**

Investigated the EM algorithm to analyze privatized data

**Taegyu Kang, PhD Student, Purdue University** **Spring 2022-Summer 2024**
Differentially private topological data analysis (group project)

**Sehwan Kim, PhD Student, Purdue University** **Spring 2022-Summer 2024**
Differentially private topological data analysis (group project)
Formalizing semi-privacy (group project)

**Jinwon Sohn, PhD Student, Purdue University** **Spring 2022-Summer 2024**
Differentially private topological data analysis (group project)

**Yue Wang, Undergraduate Student, Purdue University** **Fall 2021-Summer 2022**
Simulation study to compare differentially private hypothesis tests

**Vishnu Suresh, M.S. Student, Purdue University** **Spring 2021-Summer 2021**
Exploring research topics in differential privacy

**Jacob Moore, Undergraduate Student, Purdue University** **Spring 2021-Summer 2021**
Developing an R package for approximate conditional sampling

## PHD COMMITTEE

**Arin Chang, Ph.D. Student (Statistics, Purdue University)** **Fall 2025-present**
Advised by Vinayak Rao

**Haotian Chen, Ph.D. Student (Statistics, Purdue University)** **Fall 2025-present**
Advised by Qifan Song

**Keon Wong Hur, Ph.D. Student (Mechanical Engineering, Purdue University)** **Spring 2025-present**
Advised by Jun Chen

**Shubha Sankar Banerjee, Ph.D. Student (Statistics, University of Pittsburgh)** **Summer 2025-present**
Advised by Zhao Ren

**Hyunwoo Chung, Ph.D. Student (Statistics, Purdue University)** **Spring 2024-present**
Advised by Fei Xue

**Qian Zhang, Ph.D. Student (Statistics, Purdue University)** **Fall 2022-present**
Advised by Faming Liang

**Yi Chu, Ph.D. Student (Statistics, Purdue University)** **Summer 2022-present**
Advised by Raghu Pasupathy

**Rajdeep Haldar, Ph.D. Student (Statistics, Purdue University)** **Spring 2022-present**
Advised by Qifan Song

**Jiajun Liang, Ph.D. Student (Statistics, Purdue University)** **Spring 2022-Fall 2023**
Advised by Qifan Song

**Xinyi Pei, Ph.D. Student (Statistics, Purdue University)** **Spring 2021-Spring 2025**
Advised by Vinayak Rao

## MS COMMITTEE

**Andrew Liu, M.S. (chair), Purdue University** **Fall 2023-Spring 2025**
Chair of the MS advisory committee. Reading course in differential privacy

**Ian Hunter, M.S., Purdue University** **Spring 2023-present**

**Nicholas Rosenorn, M.S. (CS & Statistics), Purdue University** **Spring 2023-Fall 2024**

**Madison Dunn, M.S. (chair), Purdue University** **Fall 2022-Spring 2024**

**Aishwarya Ramasethu, M.S., Purdue Univeristy** **Fall 2022-Spring 2024**
Chair of the MS advisory committee. Reading course in differential privacy

**Burla Ondes, Ph.D. Student in Industrial Engineering, M.S. in Statistics, Purdue University Fall 2022-present**

**Yu-Ju Ku, M.S. (chair; CS & Statistics), Purdue University** **Summer 2022-Spring 2023**

**Quisi Zhang, M.S., Purdue University** **Spring 2022-Spring 2023**

**Qi Zhong, M.S., Purdue University** **Spring 2022-Fall 2022**

**Pratiksha Agrawal, M.S., Purdue University** **Spring 2022-Spring 2023**

**Yi-Min Yang, M.S., Purdue University** **Fall 2021-Spring 2023**

**Vidhi Jain, M.S., Purdue University** **Fall 2021-Fall 2022**

**Yu-Wen Wang, M.S., Purdue University** **Fall 2021-Spring 2023**

**Yi-Ting Hung, M.S., Purdue University** **Fall 2021-Spring 2023**

**John Lambrecht, M.S. (chair), Purdue University** **Spring 2021-Spring 2022**
Chair of the MS advisory committee. Reading course in differential privacy

**Vishnu Suresh, M.S., Purdue University** **Spring 2021-December 2022**

## PROFESSIONAL ORGANIZATIONS

**Pitt Cyber: Institute for Cyber Law, Policy, and Security, University of Pittsburgh** **Spring 2026-present**
Affiliate Scholar

**Privacy and Confidentiality Interest Group, American Statistical Association** **Fall 2023-present**
Member

**American Statistical Association** **Summer 2017-present**

**Institute of Mathematical Statistics** **Summer 2017-present**

**Center for Education and Research in Information Assurance and Security (CERIAS), Purdue University** **Spring 2024-Summer 2025**
Affiliate faculty member

**Regenstrief Center for Healthcare Engineering, Purdue University** **Summer 2022-Summer 2025**
Associate member