

**Jordan A. Awan**  
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[Google Scholar](#)

## RESEARCH INTERESTS

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### 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

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### 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

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### University of Pittsburgh, Department of Statistics, Pittsburgh PA

August 2025-present

Assistant Professor.

### Purdue University, Department of Statistics, West Lafayette IN

August 2020-August 2025

Assistant Professor.

### MITRE

June 2021-present

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

### Harvard University, Center for Research on Computation and Society (CRCS), Cambridge MA

Summer 2018

Visiting Graduate Student. Advised by [Salil Vadhan](#).

### 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

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### 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

<b>2024 College of Science Recognition Award, Purdue University</b> Recognized as the recipient of high profile projects	<b>Spring 2024</b>
<b>Faculty/Staff Recognition Award, Purdue Statistics</b>	<b>Spring 2024</b>
<b>2nd place Best Poster Award, Statistics and Optimization in Data Science Workshop, Purdue University</b>	<b>Summer 2023</b>
<b>Outstanding Poster Award, Midwest Machine Learning Symposium</b>	<b>Spring 2023</b>
<b>Regina and Norman Carroll Research Award for 2022, Purdue Statistics</b> Recognized for distinctive contributions to statistical science	<b>Spring 2023</b>
<b>Journal of Voice 2022 Best Paper Award</b> Best Paper in the Speech-Language Pathology category	<b>Spring 2023</b>
<b>The Voice Foundation Best Poster Award</b>	<b>Summer 2021</b>
<b>Penn State 2020 Alumni Dissertation Award</b>	<b>Spring 2020</b>
<b>PSU Statistics 50<sup>th</sup> Anniversary Best Poster Award</b>	<b>Spring 2018</b>
<b>August and Ruth Homeyer Graduate Fellowship, PSU</b>	<b>Fall 2017-Spring 2018</b>
<b>Best Performance on Applied Qualifying Exam, PSU Statistics</b>	<b>Summer 2017</b>
<b>Stephen B. Brumbach Distinguished Graduate Fellowship, PSU</b>	<b>Fall 2016-Spring 2017</b>
<b>GAANN Fellowship</b>	<b>Fall 2014-Summer 2016</b>
<b>MAA Outstanding Student Poster Award</b>	<b>Winter 2014</b>
<b>Clarion University France-Allison Presentation Award</b>	<b>Fall 2013</b>
<b>MAA Outstanding Student Presentation Award</b>	<b>Summer 2013</b>
<b>Board of Governors Academic Tuition Scholarship</b>	<b>Fall 2011-Spring 2014</b>

## SUBMITTED PAPERS & PREPRINTS

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1. Chen, Y.-W., Pasupathy, R., **Awan, J.** “[Optimal Survey Design for Private Mean Estimation.](#)” arXiv:2501.18121.
2. Wang, Z., Cheng, G., **Awan, J.** “[Differentially Private Bootstrap: New Privacy Analysis and Inference Strategies.](#)” arXiv:2210.06140.
3. **Awan, J.**, Barrientos, A. F., Ju, N. “[Statistical Inference for Privatized Data with Unknown Sample Size.](#)” arXiv:2406.06231.
4. **Awan, J.**, Edwards, A., Bartholomew, P., Sillers, A. “[Best Linear Unbiased Estimate from Privatized Histograms.](#)” arXiv:2409.04387.
5. Ohnishi, Y., **Awan, J.** “[Differentially Private Covariate Balancing Causal Inference.](#)” arXiv:2410.14789.
6. Cho, Y., **Awan, J.** “[Formal Privacy Guarantees with Invariant Statistics.](#)” arXiv:2410.17468.
7. Eng, K., **Awan, J.**, Ju, N., Rao, V., Gong, R. “[dapper: Data Augmentation for Private Posterior Estimation in R.](#)” arXiv:2412.14503.

## REFEREED PUBLICATIONS

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1. **Awan, J.**, Wang, Y. (2025) “[Differentially Private Kolmogorov-Smirnov-Type Tests.](#)” *Electronic Journal of Statistics*. Volume 19, No. 1, Pages 718-744.
2. Ohnishi, Y., **Awan, J.** (2025) “[Locally Private Causal Inference for Randomized Experiments.](#)” *Journal of Machine Learning Research*. Volume 26, No. 14, Pages 1-40.
3. Awan, S., **Awan, J.** (2025) “[Comparison of Methods of Eliciting Vital Capacity: Forced vs. Slow Vital Capacity.](#)” *Journal of Voice*. Available online.

4. **Awan, J.**, Cai, Z. (2025) “One Step to Efficient Synthetic Data.” *Statistica Sinica*. Volume 35, Pages 531-569.
5. **Awan, J.**, Wang, Z. (2024) “Simulation-Based Finite-Sample Inference for Privatized Data.” *Journal of the American Statistical Association*. Available online.
6. **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.
7. 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.
8. **Awan, J.**, Bernardi, O. (2024) “Tutte Polynomials for Regular Oriented Matroids.” *Discrete Mathematics*. Volume 347, Number 1.
9. **Awan, J.**, Vadhan, S. (2023) “Canonical Noise Distributions and Private Hypothesis Tests.” *Annals of Statistics*. Volume 51, Number 2, Pages 547-572.
10. **Awan, J.**, Rao, V. (2023) “Privacy-Aware Rejection Sampling.” *Journal of Machine Learning Research*. Volume 24, No. 74, Pages 1-32.
11. 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.
12. Feinstein, H., Daşdoğan, Ü., **Awan, J.**, Awan, S., Verdolini Abbott, K. (2023) “Comparative Analysis of Two Methods of Perceptual Voice Assessment.” *Journal of Voice*. Available online.
13. **Awan, J.**, Dong, J. (2022) “Log-Concave and Multivariate Canonical Noise Distributions for Differential Privacy.” *Advances in Neural Information Processing Systems 36*, 34229-34240.
14. 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.
15. **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.
16. 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.
17. 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.
18. 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)
19. **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.
20. **Awan, J.**, Slavković, A. (2020) “Differentially Private Inference for Binomial Data.” *Journal of Privacy and Confidentiality*. Volume 10, No. 1.
21. **Awan, J.**, Bernardi, O. (2020) “Tutte Polynomials for Directed Graphs.” *Journal of Combinatorial Theory, Series B*. Volume 140, 192-247.
22. 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.
23. Reimherr, M., **Awan, J.** (2019) “KNG: The  $K$ -Norm Gradient Mechanism.” *Advances in Neural Information Processing Systems 33*. 10208-10219.
24. Reimherr, M., **Awan, J.** (2019) “Elliptical Perturbations for Differential Privacy.” *Advances in Neural Information Processing Systems 33*. 10185-10196.
25. **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.
26. **Awan, J.**, Slavković, A. (2018) “Differentially Private Uniformly Most Powerful Tests for Binomial Data.” *Advances in Neural Information Processing Systems 32*, 4208-4218.

27. 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.
28. 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

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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

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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

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

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** **2022-2025**

Principal investigator, along with Co-PI Dr. Roberto Molinari. \$450,000 for 3 years.

## RESEARCH PRESENTATIONS

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**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<sup>th</sup> 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	
<b>Auburn University, Statistics and Data Science Seminar, Online</b> Bayesian Inference from Privatized Data	<b>September 2022</b>
<b>Statistical Learning and Differential Privacy, Bath U.K. (online)</b> Data Augmentation MCMC for Bayesian Inference from Privatized Data	<b>September 2022</b>
<b>Joint Statistical Meetings, Washington D.C.</b> Posterior Inference on Privatized Data via Data Augmentation MCMC	<b>August 2022</b>
<b>Workshop on the Analysis of Census Noisy Measurement Files and Differential Privacy, Rutgers University</b> Posterior Inference on Privatized Data via Data Augmentation MCMC	<b>April 2022</b>
<b>Computational &amp; Methodological Statistics Meeting, Online</b> Canonical noise distributions and private hypothesis tests	<b>December 2021</b>
<b>Privacy in Machine Learning, Virtual NeurIPS Workshop</b> Canonical noise distributions and private hypothesis tests	<b>December 2021</b>
<b>Privacy in Machine Learning, Virtual NeurIPS Workshop</b> Privacy-aware rejection sampling	<b>December 2021</b>
<b>Privacy Preserving Machine Learning, Virtual ACM CCS Workshop</b> Canonical noise and private hypothesis tests	<b>November 2021</b>
<b>Michigan State University, Department of Statistics, Online</b> Canonical noise and private hypothesis tests	<b>November 2021</b>
<b>Invited Panel: Virtual Symposium on Data Privacy, ASA Nevada Chapter</b> Canonical noise distributions and private hypothesis tests	<b>September 2021</b>
<b>2021 Joint Statistical Meetings, Online</b> Approximate co-sufficient sampling with applications to goodness of fit tests and synthetic data	<b>August 2021</b>
<b>2020 Joint Statistical Meetings, Online</b> KNG: The K-norm gradient mechanism	<b>August 2020</b>
<b>University of Wisconsin-Madison, Department of Statistics, Madison WI</b> Differentially private inference for binomial data	<b>February 2020</b>
<b>Lafayette College, Department of Mathematics, Easton PA</b> Differentially private inference for binomial data	<b>February 2020</b>
<b>George Mason University, Department of Statistics, Fairfax VA</b> Differentially private inference for binomial data	<b>February 2020</b>
<b>Bucknell University, Department of Mathematics, Lewisburg PA</b> Differentially private inference for binomial data	<b>Spring 2020</b>
<b>Purdue University, Department of Statistics, West Lafayette IN</b> Differentially private inference for binomial data	<b>Spring 2020</b>
<b>2019 Joint Statistical Meetings, Denver CO</b> Benefits and pitfalls of the exponential mechanism	<b>Summer 2019</b>
<b>36th International Conference Machine Learning, Long Beach CA</b> Benefits and pitfalls of the exponential mechanism	<b>Summer 2019</b>
<b>Simons Institute for the Theory of Computing, Berkeley CA</b>	<b>April 2019</b>

Differentially private UMP hypothesis tests for Bernoulli data	
<b>Computational &amp; Methodological Statistics Meeting in Pisa, Italy</b>	<b>December 2018</b>
Differentially private UMP hypothesis tests for Bernoulli data	
<b>2018 Joint Statistical Meetings, Vancouver Canada</b>	<b>July 2018</b>
Optimizing finite sample performance under differential privacy	
<b>Statistical Society of Canada Annual Meeting, McGill University, Montreal Canada</b>	<b>June 2018</b>
Optimizing finite sample performance under differential privacy	
<b>Mathematical Foundations of Data Privacy, Banff International Research Station (BIRS), Banff Canada</b>	<b>May 2018</b>
Structure and sensitivity in DP: comparing $K$ -norm mechanisms	
<b>Stochastic Modeling and Computational Statistics Seminar at Penn State, University Park PA</b>	<b>February 2018</b>
Structure and sensitivity in DP: comparing $K$ -norm mechanisms	
<b>MIT Combinatorics Seminar, Cambridge MA</b>	<b>April 2016</b>
Tutte polynomials for directed graphs and oriented matroids	
<b>Brandeis Graduate Student Seminar, Waltham MA</b>	<b>April 2016</b>
Tutte polynomials for directed graphs and oriented matroids	
<b>Brandeis Combinatorics Seminar, Waltham MA</b>	<b>January 2016</b>
Tutte polynomials for directed graphs and oriented matroids	
<b>Brandeis Mathematics Graduate Student Seminar, Waltham MA</b>	<b>Fall 2014</b>
Maximal caps and substructures in $AG(4, 3)$	
<b>Pi Mu Epsilon Conference, Youngstown OH</b>	<b>Spring 2014</b>
Maximal caps and substructures in $AG(4, 3)$	
<b>Joint Math Meetings, Baltimore MD</b>	<b>Winter 2014</b>
Maximal caps and substructures in $AG(4, 3)$	
<b>Clarion University Honors Presentations, Clarion PA</b>	<b>Fall 2013</b>
Results on demicaps in $AG(4, 3)$	
<b>Mathfest Conference, Hartford CT</b>	<b>Summer 2013</b>
Maximal caps and substructures in $AG(4, 3)$	

## POSTERS

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<b>Thirty-Sixth Conference on Neural Information Processing Systems, New Orleans, LA (online) November 2022</b>	
Log-Concave and Multivariate Canonical Noise Distributions for Differential Privacy	
<b>Thirty-Sixth Conference on Neural Information Processing Systems, New Orleans, LA (online) November 2022</b>	
Data Augmentation MCMC for Bayesian Inference from Privatized Data	
<b>Privacy in Machine Learning, Virtual NeurIPS Workshop</b>	<b>December 2021</b>
Canonical noise distributions and private hypothesis tests	
<b>Privacy in Machine Learning, Virtual NeurIPS Workshop</b>	<b>December 2021</b>
Privacy-aware rejection sampling	
<b>Privacy Preserving Machine Learning, Virtual ACM CCS Workshop</b>	<b>November 2021</b>
Canonical noise and private hypothesis tests	
<b>Privacy Preserving Machine Learning, Virtual ACM CCS Workshop</b>	<b>November 2021</b>
Privacy-aware rejection sampling	

<b>Thirty-Third Conference on Neural Information Processing Systems, Vancouver Canada</b>	<b>December 2019</b>
Elliptical perturbations for differential privacy	
<b>Thirty-Third Conference on Neural Information Processing Systems, Vancouver Canada</b>	<b>December 2019</b>
$K$ -Norm gradient mechanism for private empirical risk minimization	
<b>36th International Conference on Machine Learning, Long Beach CA</b>	<b>Summer 2019</b>
Benefits and pitfalls of the exponential mechanism	
<b>Thirty-second Conference on Neural Information Processing Systems, Montreal Canada</b>	<b>December 2018</b>
Differentially private uniformly most powerful tests for binomial data	
<b>Theory and Practice of Differential Privacy in 25th ACM Conference on Computer and Communications Security, Toronto Canada</b>	<b>October 2018</b>
Differentially private uniformly most powerful tests for binomial data	
<b>50<sup>th</sup> Anniversary Conference at Penn State Department of Statistics, University Park PA</b>	<b>May 2018</b>
Optimizing finite sample performance under differential privacy	
<b>Rao Prize Conference at Penn State, University Park PA</b>	<b>May 2017</b>
Maximum likelihood estimation with differential privacy	
<b>Joint Math Meetings, Baltimore MD</b>	<b>Winter 2014</b>
REU results on maximal caps and substructures in $AG(4,3)$	

#### OTHER PRESENTATIONS

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<b>Lilly Purdue Statistics Seminar, Eli Lilly and Company, Indianapolis IN</b>	<b>Spring 2024</b>
Statistical Inference with Differential Privacy	
<b>Open DP Community Workshop</b>	<b>Summer 2020</b>
Lightning talk on Binomial inference under differential privacy	
<b>Penn State Statistics Graduate Student Association Workshop</b>	<b>Fall 2018</b>
Introduction to differential privacy	
<b>Center for Research on Computation and Society, Harvard University</b>	<b>Summer 2018</b>
Introduction to differential privacy	
<b>Penn State Statistics Graduate Student Association Workshop</b>	<b>Fall 2017</b>
Introduction to differential privacy	
<b>Penn State DS 300: Privacy and Security for Data Sciences</b>	<b>Fall 2017</b>
Introduction to differential privacy	
<b>Brandeis Mathematics Graduate Student Seminar</b>	<b>Fall 2015</b>
A proof of the 5 color theorem	
<b>Brandeis Combinatorics Seminar</b>	<b>Spring 2015</b>
Topics in matroid representability	
<b>Brandeis Mathematics Graduate Student Seminar</b>	<b>Spring 2015</b>
Topics regarding the Tutte polynomial	
<b>Pi Mu Epsilon Conference, Youngstown OH</b>	<b>Spring 2013</b>
A solution for the 2013 COMAP MCM problem A	

<b>Clarion University High School Mathematics Competition</b> Mental math algorithms with proofs and examples	<b>Fall 2012</b>
<b>Cumberland Valley Math Modeling Challenge at Shippensburg University</b> A model to predict the economic impacts of different voting systems	<b>Fall 2011</b>

## TEACHING EXPERIENCE

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<b>Purdue University Department of Statistics, Instructor</b> 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	<b>Fall 2020-present</b>
<b>Pennsylvania State University Department of Statistics, Instructor</b> Introduction to Probability and Statistics with R for Engineers , Spring 2025	<b>Spring 2019</b>
<b>Brandeis University Department of Mathematics, Instructor</b> Integral Calculus	<b>Fall 2015, Spring 2016</b>
<b>Brandeis University Department of Mathematics, Grader</b> Multivariate Calculus, Linear Algebra	<b>Fall 2014, Spring 2015</b>
<b>Brandeis University Department of Mathematics, Tutor</b> Pre-Calculus, Calculus I & II	<b>Fall 2014, Spring 2015</b>
<b>Clarion University Department of Academic Enrichment, Tutor</b> Finite Mathematics, Pre-Calculus, Calculus I & II, Linear Algebra	<b>Fall 2011-Spring 2014</b>

## SOFTWARE DEVELOPMENT

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<b>dapper: Data Augmentation for Private Posterior Estimation in R</b> 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.	<b>Summer 2024</b>
<b>binomialDP: Differentially Private Inference for Binomial Data</b> 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.	<b>Summer 2020</b>

## SERVICE

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<b>Journal Referee</b> Journal of the American Statistical Association, Neural Information Processing Systems, International Conference on Machine Learning, Journal of Privacy and Confidentiality, Journal of the Royal Statistical Society Series B, Annals of Statistics, Journal of Computational and Graphical Statistics, Statistica Sinica, among others	
<b>Session Organizer, Bayesian, Fiducial, &amp; Frequentist Conference (BFF9)</b> Organized a session on statistical inference on privatized data	<b>Spring 2025</b>
<b>PhD Qualifying Exam Committee, Purdue University Statistics</b> Wrote exam questions and helped to administer the exam	<b>Spring 2025</b>



<b>Faculty Mentor, Science Scholars Program, Purdue University</b> Mentored an undergraduate student from an under-represented minority background	<b>Fall 2024-present</b>
<b>Program Committee, AAAI</b> Reviewed articles for the conference	<b>Fall 2024</b>
<b>Program Committee, Fairness, Accountability, and Transparency (FAccT)</b> Reviewed submissions for the workshop	<b>Spring 2023</b>
<b>Colloquium Chair, Purdue University Statistics</b> Organized the Purdue Department of Statistics seminar, invited speakers	<b>Fall 2021-Spring 2022</b>
<b>Diversity and Inclusion Committee, Purdue University Statistics</b>	<b>2021-present</b>
<b>Program Committee, NeurIPS Workshop: Privacy and Machine Learning</b> Reviewed submissions and helped organize the workshop	<b>Fall 2021</b>
<b>Program Committee, CCS Workshop: Privacy Preserving Machine Learning</b> Reviewed submissions and helped organize the workshop	<b>Fall 2021</b>
<b>Graduate Student Admissions, Purdue University Statistics</b>	<b>2021-present</b>
<b>Program Committee Member, Theory and Practice of Differential Privacy</b> Reviewed submissions and helped organize the workshop	<b>Spring 2021 and Summer 2024</b>
<b>Distinguished Theme Seminar Series, Purdue University</b> Member of the organizing committee (Spring 2021-Fall 2021) Seminar Moderator (Fall 2020, Fall 2021)	<b>Fall 2020-Fall 2023</b>
<b>Hiring Committee, Purdue University</b> 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)	<b>Fall 2020 - present</b>

## POSTDOCTORAL ADVISOR

<b>Cesare Miglioli, Postdoctoral Researcher</b>	<b>Fall 2024-present</b>
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## THESIS ADVISOR

<b>Yu Wei Chen, Ph.D. Student</b>	<b>Spring 2024-present</b>
<b>Young Hyun Cho, Ph.D. Student</b> Co-advised by Will Wei Sun	<b>Spring 2023-present</b>
<b>Yuki Ohnishi, Ph.D. Student</b> Co-advised by Arman Sabbaghi First job: Postdoctoral Associate, Yale School of Public Health	<b>Summer 2022-Spring 2023</b>
<b>Zhanyu Wang, Ph.D. Student</b> Co-advised by Guang Cheng (UCLA) First job: Research Scientist, Meta	<b>Fall 2021-Fall 2023</b>

## OTHER SUPERVISED STUDENTS

<b>Arin Chang, Ph.D. Student</b> Indirect inference and parametric bootstrap for privatized data	<b>Fall 2024-present</b>
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<b>Leo Navarro, Undergraduate Student</b> Optimize Bayesian inference on privatized data	<b>Summer 2024-present</b>
<b>Kefan Gu, Undergraduate Student</b> Optimize Bayesian inference on privatized data	<b>Summer 2024-Fall 2024</b>
<b>Pranav Bhakti, Undergraduate Student</b> Simulations for Bayesian inference on privatized data	<b>Spring 2024-present</b>
<b>Xinlong Du, M.S. Student</b> R Package development for simulation-based inference	<b>Spring 2024-present</b>
<b>Samuel Forfang, Undergraduate Student</b> R Package development for simulation-based inference	<b>Spring 2024-present</b>
<b>Aidan Davis, Undergraduate Student</b> R Package development for simulation-based inference	<b>Spring 2024</b>
<b>Andrew Liu, M.S. Student</b> Optimize the subsample and aggregate method for confidence intervals	<b>Fall 2023-present</b>
<b>Aishwarya Ramasethu, M.S. Student</b> Research discrete canonical noise distributions and implement binomialDP in OpenDP	<b>Fall 2022-Spring 2023</b>
<b>Yu-Ju Ku, M.S. Student</b> Implement binomialDP in OpenDP	<b>Summer 2022-Spring 2023</b>
<b>Burla Ondes, Ph.D. Student in I.E.</b> Investigated the EM algorithm to analyze privatized data	<b>Summer 2022</b>
<b>Taegyu Kang, PhD Student</b> Differentially private topological data analysis (group project)	<b>Spring 2022-Summer 2024</b>
<b>Sehwan Kim, PhD Student</b> Differentially private topological data analysis (group project) Formalizing semi-privacy (group project)	<b>Spring 2022-Summer 2024</b>
<b>Jinwon Sohn, PhD Student</b> Differentially private topological data analysis (group project)	<b>Spring 2022-Summer 2024</b>
<b>Yue Wang, Undergraduate Student</b> Simulation study to compare differentially private hypothesis tests	<b>Fall 2021-Summer 2022</b>
<b>Vishnu Suresh, M.S. Student</b> Exploring research topics in differential privacy	<b>Spring 2021-Summer 2021</b>
<b>Jacob Moore, Undergraduate Student</b> Developing an R package for approximate conditional sampling	<b>Spring 2021-Summer 2021</b>

#### PHD COMMITTEE

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<b>Hyunwoo Chung, Ph.D. Student</b> Advised by Fei Xue	<b>Spring 2024-present</b>
<b>Qian Zhang, Ph.D. Student</b> Advised by Faming Liang	<b>Fall 2022-present</b>

<b>Yi Chu, Ph.D. Student</b> Advised by Raghu Pasupathy	<b>Summer 2022-present</b>
<b>Rajdeep Haldar, Ph.D. Student</b> Advised by Qifan Song	<b>Spring 2022-present</b>
<b>Jiajun Liang, Ph.D. Student</b> Advised by Qifan Song	<b>Spring 2022-Fall 2023</b>
<b>Xinyi Pei, Ph.D. Student</b> Advised by Vinayak Rao	<b>Spring 2021-present</b>

## MS COMMITTEE

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<b>Andrew Liu, M.S. (chair)</b>	<b>Fall 2023-present</b>
<b>Ian Hunter, M.S.</b>	<b>Spring 2023-present</b>
<b>Nicholas Rosenorn, M.S. (CS &amp; Statistics)</b>	<b>Spring 2023-present</b>
<b>Madison Dunn, M.S. (chair)</b>	<b>Fall 2022-present</b>
<b>Aishwarya Ramasethu, M.S.</b> Chair of the MS advisory committee. Reading course in differential privacy	<b>Fall 2022-present</b>
<b>Burla Ondes, Ph.D. Student in Industrial Engineering, M.S. in Statistics</b>	<b>Fall 2022-present</b>
<b>Yu-Ju Ku, M.S. (chair; CS &amp; Statistics)</b>	<b>Summer 2022-Spring 2023</b>
<b>Quisi Zhang, M.S.</b>	<b>Spring 2022-present</b>
<b>Qi Zhong, M.S.</b>	<b>Spring 2022-Fall 2022</b>
<b>Pratiksha Agrawal, M.S.</b>	<b>Spring 2022-present</b>
<b>Yi-Min Yang, M.S.</b>	<b>Fall 2021-Spring 2023</b>
<b>Vidhi Jain, M.S.</b>	<b>Fall 2021-Fall 2022</b>
<b>Yu-Wen Wang, M.S.</b>	<b>Fall 2021-Spring 2023</b>
<b>Yi-Ting Hung, M.S.</b>	<b>Fall 2021-present</b>
<b>John Lambrecht, M.S. (chair)</b> Chair of the MS advisory committee. Reading course in differential privacy	<b>Spring 2021-Spring 2022</b>
<b>Vishnu Suresh, M.S.</b>	<b>Spring 2021-December 2022</b>

## PROFESSIONAL ORGANIZATIONS

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<b>Center for Education and Research in Information Assurance and Security (CERIAS), Purdue University</b> Affiliate faculty member	<b>Spring 2024-present</b>
<b>Privacy and Confidentiality Interest Group, American Statistical Association</b> Member	<b>Fall 2023-present</b>
<b>Regenstrief Center for Healthcare Engineering, Purdue University</b> Associate member	<b>Summer 2022-present</b>
<b>American Statistical Association</b>	<b>Summer 2017-present</b>
<b>Institute of Mathematical Statistics</b>	<b>Summer 2017-present</b>