

# Anand D. Sarwate

# Curriculum Vitæ

## CONTACT INFORMATION

Associate Professor

Department of Electrical and Computer Engineering

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## RESEARCH INTERESTS

I am broadly interested in probability, statistics, and algorithms applied to problems in distributed systems, communications, and privacy and security.

## EDUCATION

- 1/06–7/08      **University of California, Berkeley**, (Berkeley, California USA)  
Ph.D., Electrical Engineering and Computer Sciences (awarded 12/2008)  
Designated Emphasis in Communication, Computation and Statistics  
Thesis: *Robust and adaptive communication under uncertain interference*  
Advisor: Professor Michael Gastpar
- 8/02–12/05      **University of California, Berkeley**, (Berkeley, California USA)  
M.S., Electrical Engineering and Computer Sciences (awarded 12/2005)  
Thesis : *Observation uncertainty in Gaussian sensor networks*  
Advisor: Professor Michael Gastpar
- 9/97–6/02      **Massachusetts Institute of Technology**, (Cambridge, Massachusetts USA)  
B.S., Electrical Science and Engineering (awarded 6/2002)  
B.S., Mathematics (awarded 6/2002)  
Minor in Music  
Minor in Theater Arts

## EMPLOYMENT

- 7/20–            **Rutgers, The State University of New Jersey**, (Piscataway, New Jersey USA)  
*Associate Professor*
- 1/14–6/20      **Rutgers, The State University of New Jersey**, (Piscataway, New Jersey USA)  
*Assistant Professor*
- 10/11–12/13    **Toyota Technological Institute at Chicago**, (Chicago, Illinois USA)  
*Research Assistant Professor*
- 9/08–9/11      **University of California, San Diego**, (La Jolla, California USA)  
*Postdoctoral Researcher*  
Supervisors: Professors Alon Orlitsky, Tara Javidi, and Young-Han Kim

## AWARDS AND HONORS

IEEE Information Theory Society Distinguished Lecturer, 2024–2025  
Outstanding Engineering Professor, Rutgers School of Engineering, 2023  
Board of Trustees Research Fellowship for Scholarly Excellence, 2020  
A. Walter Tyson Assistant Professor Award, Rutgers School of Engineering, 2018  
NSF CAREER Award, 2015  
IEEE Senior Member  
NIPS Reviewer Award, 2013  
Demetri Angelakos Memorial Achievement Award, UC Berkeley Department of EECS, 2008  
Samuel Silver Memorial Scholarship Award, UC Berkeley Department of EECS, 2007  
National Defence Science and Engineering Graduate Fellowship, 2002–2005  
MIT : Laya and Jerome B. Wiesner Student Art Award, Joseph Everingham Award (Theater), Philip Lowe Memorial Award (Music)

## PREPRINTS

- [1] N. Sathyavageeswaran, R. D. Yates, A. D. Sarwate, and N. Mandayam. “Privacy Leakage in Discrete Time Updating Systems”. May 2022. URL: <https://arxiv.org/abs/2205.15630>.
- [2] Y. Zhang, S. Jaggi, M. Langberg, and A. D. Sarwate. “The Capacity of Causal Adversarial Channels”. May 2022. URL: <https://arxiv.org/abs/2205.06708>.
- [3] A. Engel, Z. Wang, A. D. Sarwate, S. Choudhury, and T. Chiang. *TorchNTK: A Library for Calculation of Neural Tangent Kernels of PyTorch Models*. Tech. rep. arXiv:2205.12372 [cs.LG]. ArXiv, May 2022. URL: <https://arxiv.org/abs/2205.12372>.
- [4] K. E. Nikolakakis, D. S. Kalogierias, and A. D. Sarwate. *Optimal Rates for Learning Hidden Tree Structures*. Tech. rep. arXiv:1909.09596v4 [stat.ML]. ArXiv, Mar. 2021. URL: <https://arxiv.org/abs/1909.09596>.
- [5] A. Chatterjee, A. D. Sarwate, and S. Vishwanath. “Generalized Opinion Dynamics from Local Optimization Rules”. Sept. 2014. URL: <http://arxiv.org/abs/1409.7614>.
- [6] A. D. Sarwate and M. Gastpar. *Relaxing the Gaussian AVC*. Tech. rep. arXiv:1204.2587v1 [cs.IT]. Under revision. ArXiv, Sept. 2012. URL: <http://arxiv.org/abs/1209.2755>.

## JOURNAL AND ARCHIVAL CONFERENCE

- [1] A. W. Engel, Z. Wang, N. Frank, I. Dumitriu, S. Choudhury, A. Sarwate, and T. Chiang. “Faithful and Efficient Explanations for Neural Networks via Neural Tangent Kernel Surrogate Models”. In: *The Twelfth International Conference on Learning Representations*. Vienna, Austria, May 2024. URL: <https://openreview.net/forum?id=yKksu38BpM>.

- [2] Z. Wang, A. Engel, A. Sarwate, I. Dumitriu, and T. Chiang. “Spectral Evolution and Invariance in Linear-width Neural Networks”. In: *Advances in Neural Information Processing Systems 36 (NeurIPS 2023)*. Curran Associates, Inc., Dec. 2023. URL: <https://openreview.net/forum?id=gpqBGyKeKH>.
- [3] S. Costanza-Chock, K. R. (editor), K. Henne, S. Mhlambi, and A. Sarwate. “Critical AI and Design Justice: An Interview with Sasha Costanza-Chock”. In: *Critical AI* 1–2.1 (Oct. 2023). DOI: [10.1215/2834703X-10734036](https://doi.org/10.1215/2834703X-10734036).
- [4] B. Taki, A. D. Sarwate, and W. U. Bajwa. “Structured Low-Rank Tensor Models for Logistic Regression”. In: *Transactions on Machine Learning Research* (Aug. 2023). URL: <https://openreview.net/forum?id=qUxBs3Ln41>.
- [5] D. Martin, S. Basodi, S. Panta, K. Rootes-Murdy, P. Prae, A. D. Sarwate, R. Kelly, J. Romero, B. T. Baker, H. Gazula, J. Bockholt, J. A. Turner, N. B. Esper, A. R. Franco, S. Plis, and V. D. Calhoun. “Enhancing collaborative neuroimaging research: introducing COINSTAC Vaults for federated analysis and reproducibility”. In: *Frontiers in Neuroinformatics* 17 (June 2023). DOI: [10.3389/fninf.2023.1207721](https://doi.org/10.3389/fninf.2023.1207721).
- [6] N. Tasnim, J. Mohammadi, A. D. Sarwate, and H. Imtiaz. “Approximating Functions with Approximate Privacy for Applications in Signal Estimation and Learning”. In: *Entropy* 25.5 (May 2023), p. 825. DOI: [10.3390/e25050825](https://doi.org/10.3390/e25050825).
- [7] R. Islam, K. N. Keya, S. Pan, A. D. Sarwate, and J. R. Foulds. “Differential Fairness: An Intersectional Framework for Fair AI”. In: *Entropy* 25.4 (Apr. 2023). ISSN: 1099-4300. DOI: [10.3390/e25040660](https://doi.org/10.3390/e25040660).
- [8] H. Gazula, K. Rootes-Murdy, B. Holla, S. Basodi, Z. Zhang, E. Verner, R. Kelly, P. Murthy, A. Chakrabarti, D. Basu, S. Bhagyalakshmi Nanjayya, R. Lenin Singh, R. Lourembam Singh, K. Kalyanram, K. Kartik, K. Kalyanaraman, K. Ghattu, R. Kuriyan, S. S. Kurpad, G. J. Barker, R. D. Bharath, S. Desrivieres, M. Purushottam, D. P. Orfanos, E. Sharma, M. Hickman, M. Toledano, N. Vaidya, T. Banaschewski, A. L. W. Bokde, H. Flor, A. Grigis, H. Garavan, P. Gowland, A. Heinz, R. Brühl, J.-L. Martinot, M.-L. Paillère Martinot, E. Artiges, F. Nees, T. Paus, L. Poustka, J. H. Fröhner, L. Robinson, M. N. Smolka, H. Walter, J. Winterer, R. Whelan, J. A. Turner, A. D. Sarwate, S. M. Plis, V. Benegal, G. Schumann, V. D. Calhoun, and IMAGEN Consortium. “Federated Analysis in COINSTAC Reveals Functional Network Connectivity and Spectral Links to Smoking and Alcohol Consumption in Nearly 2,000 Adolescent Brains”. In: *Neuroinformatics* 21 (Apr. 2023), pp. 287–301. DOI: [10.1007/s12021-022-09604-4](https://doi.org/10.1007/s12021-022-09604-4).
- [9] Y. Zhang, S. Vatedka, S. Jaggi, and A. D. Sarwate. “Quadratically Constrained Myopic Adversarial Channels”. In: *IEEE Transactions on Information Theory* 68 (Aug. 2022), pp. 4901–4948. DOI: [10.1109/TIT.2022.3167554](https://doi.org/10.1109/TIT.2022.3167554).
- [10] S. Xiong, A. D. Sarwate, and N. B. Mandayam. “Network Traffic Shaping for Enhancing Privacy in IoT Systems”. In: *IEEE/ACM Transactions on Networking* 30.3 (June 2022), pp. 1162–1177. DOI: [10.1109/TNET.2021.3140174](https://doi.org/10.1109/TNET.2021.3140174).
- [11] K. Rootes-Murdy, H. Gazula, E. Verner, R. Kelly, T. DeRamus, S. Plis, A. Sarwate, J. Turner, and V. Calhoun. “Federated Analysis of Neuroimaging Data: A Review of the Field”. In: *Neuroinformatics* 20.2 (Apr. 2022), pp. 377–390. DOI: [10.1007/s12021-021-09550-7](https://doi.org/10.1007/s12021-021-09550-7).
- [12] F. Cangialosi, N. Agarwal, V. Arun, J. Jiang, S. Narayana, A. Sarwate, and R. Netravali. “Privid: Practical, Privacy-Preserving Video Analytics Queries”. In: *Proceedings of the 19th USENIX Symposium on Networked Systems Design and Implementation (NSDI ’22)*. Apr. 2022. URL: <https://www.usenix.org/conference/nsdi22/presentation/cangialosi>.

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- [14] H. Imtiaz, J. Mohammadi, R. Silva, B. Baker, S. M. Plis, A. D. Sarwate, and V. D. Calhoun. “A Correlated Noise-Assisted Decentralized Differentially Private Estimation Protocol, and its Application to fMRI Source Separation”. In: *IEEE Transactions on Signal Processing* 69 (Nov. 2021), pp. 6355–6370. DOI: [10.1109/TSP.2021.3126546](https://doi.org/10.1109/TSP.2021.3126546).
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- [16] K. E. Nikolakakis, D. S. Kalogierias, A. D. Sarwate, and O. Sheffet. “Quantile Multi-Armed Bandits: Optimal Best-Arm Identification and a Differentially Private Scheme”. In: *IEEE Journal on Selected Areas in Information Theory* 2.2 (June 2021), pp. 534–548. DOI: [10.1109/JSAIT.2021.3081525](https://doi.org/10.1109/JSAIT.2021.3081525).
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- [18] K. E. Nikolakakis, D. S. Kalogierias, and A. D. Sarwate. “Predictive Learning on Hidden Tree-Structured Ising Models”. In: *Journal of Machine Learning Research* 22.59 (Apr. 2021), pp. 1–82. URL: <https://jmlr.org/papers/v22/19-149.html>.
- [19] H. Gazula, B. Holla, Z. Zhang, J. Xu, E. Verner, R. Kelly, S. Jain, R. D. Bharath, G. J. Barker, D. Basu, A. Chakrabarti, K. Kalyanram, K. Kumaran, L. Singh, R. Kuriyan, P. Murthy, V. Benega, S. M. Plis, A. D. Sarwate, J. A. Turner, G. Schumann, and V. D. Calhoun. “Decentralized Multisite VBM Analysis During Adolescence Shows Structural Changes Linked to Age, Body Mass Index, and Smoking: a COINSTAC Analysis”. In: *Neuroinformatics* (Jan. 2021). DOI: [10.1007/s12021-020-09502-7](https://doi.org/10.1007/s12021-020-09502-7).
- [20] H. Gazula, R. Kelly, J. Romero, E. Verner, B. T. Baker, R. F. Silva, H. Imtiaz, D. K. Saha, R. Raja, J. A. Turner, A. D. Sarwate, S. M. Plis, and V. D. Calhoun. “COINSTAC: Collaborative Informatics and Neuroimaging Suite Toolkit for Anonymous Computation”. In: *Journal of Open Source Software* 5.54 (Oct. 2020), p. 2166. DOI: [10.21105/joss.02166](https://doi.org/10.21105/joss.02166).
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- [29] Z. Shakeri, W. U. Bajwa, and A. D. Sarwate. “Minimax Lower Bounds on Dictionary Learning for Tensor Data”. In: *IEEE Transactions on Information Theory* 64.4 (Apr. 2018), pp. 2706–2726. DOI: [10.1109/TIT.2018.2799931](https://doi.org/10.1109/TIT.2018.2799931).
- [30] A. Bijral, A. D. Sarwate, and N. Srebro. “Data Dependent Convergence For Consensus Stochastic Optimization”. In: *IEEE Transactions on Automatic Control* 62.9 (Sept. 2017), pp. 4483–4498. DOI: [10.1109/TAC.2017.2671377](https://doi.org/10.1109/TAC.2017.2671377).
- [31] J. Ming, E. Verner, A. Sarwate, R. Kelly, C. Reed, T. Kahleck, R. Silva, S. Panta, J. Turner, S. Plis, and V. Calhoun. “COINSTAC: Decentralizing the future of brain imaging analysis”. In: *F1000Research* 6.1512 (Aug. 2017). DOI: [10.12688/f1000research.12353.1](https://doi.org/10.12688/f1000research.12353.1).
- [32] N. D. Goldstein and A. D. Sarwate. “Privacy, security, and the public health researcher in the era of electronic health record research”. In: *Online Journal of Public Health Informatics* 8.3 (Dec. 2016), e207. DOI: [10.5210/ojphi.v8i3.7251](https://doi.org/10.5210/ojphi.v8i3.7251).
- [33] S. Plis, A. D. Sarwate, D. Wood, C. Dieringer, D. Landis, C. Reed, S. R. Panta, J. A. Turner, J. M. Shoemaker, K. W. Carter, P. Thompson, K. Hutchison, and V. D. Calhoun. “COINSTAC: A Privacy Enabled Model and Prototype for Leveraging and Processing Decentralized Brain Imaging Data”. In: *Frontiers in Neuroscience* 10.365 (Aug. 2016). DOI: [10.3389/fnins.2016.00365](https://doi.org/10.3389/fnins.2016.00365).
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- [35] A. D. Sarwate and T. Javidi. “Distributed Learning of Distributions via Social Sampling”. In: *IEEE Transactions on Automatic Control* 60.1 (Jan. 2015), pp. 34–45. DOI: [10.1109/TAC.2014.2329611](https://doi.org/10.1109/TAC.2014.2329611).
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- [37] A. D. Sarwate, S. M. Plis, J. A. Turner, M. R. Arbabshirani, and V. D. Calhoun. “Sharing privacy-sensitive access to neuroimaging and genetics data: a review and preliminary validation”. In: *Frontiers in Neuroinformatics* 8.35 (Apr. 2014). DOI: [10.3389/fninf.2014.00035](https://doi.org/10.3389/fninf.2014.00035).
- [38] S. Sabato, A. D. Sarwate, and N. Srebro. “Auditing: Active Learning with Outcome-Dependent Query Costs”. In: *Advances in Neural Information Processing Systems (NIPS) 26*. Ed. by C. Burges, L. Bottou, M. Welling, Z. Ghahramani, and K. Weinberger. Curran Associates, Inc., Dec. 2013, pp. 512–520. URL: <http://papers.nips.cc/paper/4956-auditing-active-learning-with-outcome-dependent-query-costs>.

- [39] K. Chaudhuri, A. D. Sarwate, and K. Sinha. “A Near-Optimal Algorithm for Differentially-Private Principal Components”. In: *Journal of Machine Learning Research* 14 (Sept. 2013), pp. 2905–2943. URL: <http://jmlr.org/papers/volume14/chaudhuri13a/chaudhuri13a.pdf>.
- [40] A. D. Sarwate and K. Chaudhuri. “Signal processing and machine learning with differential privacy: theory, algorithms, and challenges”. In: *IEEE Signal Processing Magazine* 30.5 (Sept. 2013), pp. 86–94. DOI: [10.1109/MSP.2013.2259911](https://doi.org/10.1109/MSP.2013.2259911).
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- [45] A. D. Sarwate and M. Gastpar. “List-Decoding for the Arbitrarily Varying Channel Under State Constraints”. In: *IEEE Transactions on Information Theory* 58.3 (Mar. 2012), pp. 1372–1384. DOI: [10.1109/TIT.2011.2178153](https://doi.org/10.1109/TIT.2011.2178153).
- [46] A. D. Sarwate and A. G. Dimakis. “The Impact of Mobility on Gossip Algorithms”. In: *IEEE Transactions on Information Theory* 58.3 (Mar. 2012), pp. 1731–1742. DOI: [10.1109/TIT.2011.2177753](https://doi.org/10.1109/TIT.2011.2177753).
- [47] K. Chaudhuri, C. Monteleoni, and A. D. Sarwate. “Differentially private empirical risk minimization”. In: *Journal of Machine Learning Research* 12 (Mar. 2011), pp. 1069–1109. URL: <http://jmlr.csail.mit.edu/papers/v12/chaudhuri11a.html>.
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- [49] A. D. Sarwate and M. Gastpar. “Rateless codes for AVC models”. In: *IEEE Transactions on Information Theory* 56.7 (July 2010), pp. 3105–3114. DOI: [10.1109/TIT.2010.2048497](https://doi.org/10.1109/TIT.2010.2048497).
- [50] K. Eswaran, A. D. Sarwate, A. Sahai, and M. Gastpar. “Zero-rate feedback can achieve the empirical capacity”. In: *IEEE Transactions on Information Theory* 56.1 (Jan. 2010), pp. 25–39. DOI: [10.1109/TIT.2009.2034779](https://doi.org/10.1109/TIT.2009.2034779).
- [51] T. C. Aysal, M. E. Yildiz, A. D. Sarwate, and A. Scaglione. “Broadcast Gossip Algorithms for Consensus”. In: *IEEE Transactions on Signal Processing* 57.7 (July 2009), pp. 2748–2761. DOI: [10.1109/TSP.2009.2016247](https://doi.org/10.1109/TSP.2009.2016247).
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#### BOOK CHAPTERS

- [1] A. D. Sarwate. “Machine learning with differential privacy”. In: *Handbook of Sharing Confidential Data: Differential Privacy, Secure Multiparty Computation, and Synthetic Data*. Ed. by J. Drechsler, D. Kifer, J. Reiter, and A. Slavkovic. Chapman & Hall/CRC Press, 2024.
- [2] Z. Shakeri, A. D. Sarwate, and W. U. Bajwa. “Sample Complexity Bounds for Dictionary Learning from Vector- and Tensor-valued Data”. In: *Information-Theoretic Methods in Data Science*. Ed. by M. Rodrigues and Y. C. Eldar. Cambridge, UK: Cambridge University Press, 2021, pp. 134–162. DOI: [10.1017/9781108616799.006](https://doi.org/10.1017/9781108616799.006).

#### CONFERENCE PAPERS

- [1] J. H. Sanchez, B. Taki, W. U. Bajwa, and A. D. Sarwate. “Federated Learning of Tensor Generalized Linear Models with Low Separation Rank”. In: *Proceedings of the 49th IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2024)*. Apr. 2024.
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## THESES

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## RESEARCH SUPPORT

PNNL	<p>PNNL-642052 : \$70,000, 9/1/2022–5/31/2024</p> <p><b>Statistical Interference Generates Knowledge for Artificial Learners (SIGNAL)</b></p> <p>PI: Anand D. Sarwate</p> <p>This project uses statistical techniques to understand the variability of training ML/AI models.</p>
NSF	<p>CNS-2148104 : \$1,000,000, 5/1/2022–4/30/2025</p> <p><b>RINGS: REALTIME: Resilient Edge-cloud Autonomous Learning with Timely Inferences</b></p> <p>PI: Anand D. Sarwate, Co-PIs: Dipankar Raychaudhuri, Waheed Bajwa, Roy D. Yates</p> <p>This project studies how to design real-time operation, online decision-making, and offline training of real-time ML-based applications that are resilient to data, application, user, and system changes.</p>
NIH	<p>2R01DA040487 : \$623,113, 9/30/2020–6/30/2025</p> <p><b>COINSTAC 2.0: Decentralized, Scalable Analysis of Loosely Coupled Data</b></p> <p>PI: Vince Calhoun (Georgia State), subcontract to Rutgers (PI: Anand D. Sarwate)</p> <p>This is a continuation of the COINSTAC project (see below) to develop a system for automated and privacy-sensitive statistical analyses of data from neuroimaging researchers studying the same condition at different sites.</p>

- NSF CCF-1910110 : \$499,976, 10/1/2019–9/30/2022  
**CIF: Small: ESTRELLA: Exploiting Structure in Tensors for Representation, Estimation, and Limits of Learning Algorithms**  
 PI: Anand D. Sarwate, Co-PI: Waheed Bajwa  
 This project pursues a comprehensive theory to simplify the measurement, storage, and statistical modeling of tensor-structured data.
- NSF CCF-1909468: \$250,000, 10/1/2019–9/30/2022  
**CIF: Small: Collaborative Research: Between Shannon and Hamming**  
 PI: Anand D. Sarwate, Co-PI: Michael Langberg (U. Buffalo)  
 This proposal studies fundamental coding strategies communication over channels in which the interference lies between the average and worst-case models.
- NSF SaTC-1617849: \$500,000.00, 9/1/2016–8/31/2020  
**TWC: Small: PERMIT: Privacy-Enabled Resource Management for IoT Networks**  
 PI: Anand D. Sarwate, Co-PI: Narayan Mandayam  
 This proposal studies how privacy, utility, and bandwidth affect each other in networked data collection and information processing systems.
- Verisign Gift: \$25,000, 11/2015  
**Differential Privacy, Multi-target Search, and Anomaly Detection**  
 PIs: Rebecca Wright, Anand D. Sarwate Gift through DIMACS Center to work on applied and theoretical privacy.
- DHS Subcontract from CICCADA: \$125,000, 10/1/2015–6/30/2016  
 PIs: Rebecca Wright, Anand D. Sarwate  
**DPAD: Differentially Private Anomaly Detection**  
 This work seeks to understand how and when we can safely detect anomalies in private data.
- NSF CCF-1525276: \$160,000.00, 9/1/2015–8/31/2017  
**CIF: Small: Active data screening for efficient feature learning**  
 PI: Waheed Bajwa, Co-PI: Anand D. Sarwate  
 This proposal develops methods for screening samples to use for dictionary learning algorithms to balance representation accuracy and computational efficiency.
- NIH 1R01DA040487-01A1: \$692,575, 07/01/2015–04/30/2020  
**COINSTAC: Decentralized, Scalable Analysis of Loosely Coupled Data**  
 PI: Vince Calhoun (Georgia State), subcontract to Rutgers (PI: Anand D. Sarwate)  
 This proposal is to develop a system for automated and privacy-sensitive statistical analyses of data from neuroimaging researchers studying the same condition at different sites.
- NSF CCF-1453432: \$540,000.00, 7/1/2015–6/30/2020  
**CAREER: Privacy-preserving learning for distributed data**  
 PI: Anand D. Sarwate  
 This proposal develops key design principles for making practical privacy-preserving distributed learning algorithms and validate them in collaboration with neuroimaging researchers. The results will identify new challenges for information processing and

machine learning in general distributed systems.

- DARPA/Navy N66001-15-C-4070: \$1,013.723, 3/15/2015–3/14/2020  
**Jana: Ensuring Secure, Private and Flexible Data Access**  
PI: David Archer (Galois, Inc.), subcontract to Rutgers (PI: Rebecca Wright, co-PIs: Anand D. Sarwate, David Cash)  
This project is about building a secure database system that uses secure multiparty computing and privacy-preserving algorithms to hold and process queries on data held by multiple parties.
- ARL CTA on Robotics: \$125,526, 4/16/2014–4/15/2015  
Subaward from General Dynamics to Rutgers (PI: Waheed Bajwa, Co-PIs: Athina Petropulu, Anand Sarwate)  
**Active Feature Learning and Classifier Training for Object Recognition**  
This work was to develop active learning approaches for feature learning for object recognition in rich data such as video. Subaward from General Dynamics.
- NSF CCF-1218331: \$208,426, 9/1/2012–4/30/2014  
**CIF: Small: Collaborative Research: Inference by social sampling**  
PI: Tara Javidi (UCSD), Co-PI: Anand D. Sarwate  
This work investigates communication and networking paradigms that can enable a network of individual agents to collaboratively estimate distributions over high dimensional spaces, even when individual observations are severely limited in accuracy, space, or time.
- AcademyHealth EDM Forum: \$5,000, 11/2011  
PI: Xiaoqian Jiang (UCSD), co-PIs: Anand D. Sarwate (TTI-Chicago), Lucila Ohno-Machado (UCSD)  
**Review of Technologies to Protect Patient Privacy When Sharing Data for Comparative Effectiveness Research**  
Commissioned paper for a systematic review of privacy-preserving methods for sharing data for medical research.

#### EDITORSHIPS

- 10/21–ongoing Associate Editor, IEEE Transactions on Information Theory
- 1/20–ongoing Consulting Associate Editor, IEEE Open Journal of Signal Processing (OJSP)
- 1/15–12/18 Associate Editor, IEEE Transactions on Signal and Information Processing over Networks

#### PROFESSIONAL SERVICE

- 2021–2026 Member, Board of Governors, IEEE Information Theory Society
- 2017–2022 Member, Machine Learning for Signal Processing Technical Committee, IEEE Signal Processing Society
- 1/15–1/19 Online Editor, IEEE Information Theory Society

01/14–12/14	Online Associate Editor, IEEE Information Theory Society
10/08–12/10	Member, Student Committee, IEEE Information Theory Society
2007–2009	Member, Ad Hoc Committee on Online Content and Services, IEEE Information Theory Society

#### CONFERENCE AND WORKSHOP ORGANIZATION

2024	Tutorials Co-Chair, 2024 IEEE International Workshop on Machine Learning for Signal Processing (MLSP 2024), London, UK
2023	Finance Chair, 2023 North American School of Information Theory (NASIT 2023), Philadelphia, PA
2022	Online Platform Co-Chair, 2022 IEEE International Symposium on Information Theory (ISIT 2022)
2019	Technical Program Chair, 2019 North American School of Information Theory (NASIT 2019), Boston, MA
2019	Chair, Simons Center Workshop on Privacy and the Science of Data Analysis, Simons Institute for Theoretical Computer Science, Berkeley, CA
2018	Co-Organizer, Algorithmic Challenges for Protecting Privacy for Biomedical Data, Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA
2016	Co-Organizer, Program on the Nexus of Information and Computation Theories: Secrecy and Privacy, Institute Henri Poincaré, Paris, France

#### PROGRAM COMMITTEES (LAST 5 YEARS)

2024	Technical Program Committee, 2024 IEEE International Symposium on Information Theory (ISIT 2024)
2023	Technical Program Committee, 2023 IEEE International Symposium on Information Theory (ISIT 2023)
2022	Technical Program Committee, Workshop on the Theory and Practice of Differential Privacy (TPDP 2022)
2022	Technical Program Committee, 2022 IEEE International Symposium on Information Theory (ISIT 2022)
2022	Technical Program Committee, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2022)
2021	Technical Program Committee, 2021 IEEE International Symposium on Information Theory (ISIT 2021)
2021	Technical Program Committee, 2021 IEEE International Symposium on Information Theory (ISIT 2021)



- 2021 Technical Program Committee, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2021)
- 2020 Technical Program Committee, Workshop on the Theory and Practice of Differential Privacy (TPDP 2020)
- 2020 Technical Program Committee, IEEE International Workshop on Machine Learning for Signal Processing (MLSP 2020)
- 2020 Technical Program Committee, NeurIPS 2020 Workshop on Privacy Preserving Machine Learning - PriML and PPML Joint Edition
- 2020 Technical Program Committee, ICLR 2020 Workshop on Trustworthy ML
- 2020 Senior Area Chair, Conference on Learning Theory (COLT 2020)
- 2020 Technical Program Committee, 2020 IEEE International Symposium on Information Theory (ISIT 2020)
- 2020 Technical Program Committee, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2020)
- 2019 Technical Program Committee, NeurIPS 2019 Workshop on Privacy in Machine Learning (PriML 2019)
- 2019 Technical Program Committee, IEEE International Workshop on Machine Learning for Signal Processing (MLSP 2019)
- 2019 Area Chair, Neural Information Processing Systems (NeurIPS 2019)
- 2019 Technical Program Committee, 2019 IEEE International Symposium on Information Theory (ISIT 2019)
- 2019 Technical Program Committee, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2019)
- 2019 Area Chair, International Conference on Machine Learning (ICML 2019)
- 2019 Technical Program Committee, Workshop on the Theory and Practice of Differential Privacy (TPDP 2018)

#### PEER REVIEWING

IEEE Transactions : Information Theory, Signal Processing, Automatic Control, Information Forensics and Security, Communications, Wireless Communications, Vehicular Technology, Computational Biology and Bioinformatics, Parallel and Distributed Systems, Smart Grid, Network Science and Engineering, Signal and Information Processing over Networks, Dependable and Secure Computing

IEEE Journal of Selected Areas in Information Theory, IEEE Journal of Selected Areas in Communication, IEEE Journal of Selected Topics in Signal Processing, IEEE Open Journal of Signal Processing, IEEE Signal Processing Magazine, IEEE Signal Processing Letters, IEEE Communications Letters,

Journal of Machine Learning Research (JMLR), Machine Learning

Journal of the American Statistical Association (JASA), Statistical Science, Mathematical Statistics and Learning

Journal of Privacy and Confidentiality

Bernoulli, Random Structures and Algorithms, Queueing Systems : Theory and Applications

Problems of Information Transmission, Entropy

IEEE/ACM Transactions on Networks, ACM Transactions on Sensor Networks, EURASIP Journal on Wireless Communications and Networking, IEEE Open Journal of Signal Processing

SIAM Journal on Matrix Analysis and Applications (SIMAX)

AMS Mathematical Reviews

*Conferences* : ISIT (2007–2024), ITW (2008,2010,2013–2022), ICASSP (2024), MLSP (2023), EUSIPCO (2018), SPAWC (2018), GlobalSIP (2015–2017), CAMSAP (2017), DSLW (2022), COLT (2011, 2012, 2020), STOC (2010), SODA (2015), NIPS (2012–2016), ICML (2012–2016), AISTATS (2012, 2013, 2017–2019), ICC (2012), Infocom (2012), Globecom (2007, 2009), WiOpt (2015), DCOSS (2015), PIMRC (2007) CDC (2009,2012), ACC (2013, 2024), ACM Richard Tapia Celebration of Diversity in Computing Poster Track (2019),

February 4, 2024