

Suresh Venkatasubramanian

Education

1994-1999 **Ph.D**, *Stanford University*.
Computer Science

Employment

2017-present **Professor**, *School of Computing*, University of Utah.

2013-2017 **Associate Professor**, *School of Computing*, University of Utah.

Summer **Visiting Faculty**, *MADALGO*, Aarhus University.
2014

2013-2014 **Visiting Scientist**, *Google, Inc.*.

Fall 2013 **Visiting Scientist**, *Simons Institute for Theoretical Computer Science*.
Theory of Big Data

2007-2013 **Assistant Professor**, *School of Computing*, University of Utah.

1999-2007 **Member, Technical Staff**, *AT&T Labs–Research*.

2002-2008 **Adjunct Assistant Professor**, *Computer and Information Sciences*, University of Pennsylvania.

Jun-Sep **Summer intern**, *AT&T Labs*, Florham Park, New Jersey.
1998

February **Visitor**, *DIMACS*, Rutgers University, New Jersey.
1998 Visited DIMACS as part of the Special Year on Massive Data Sets

Jun-Sep **Summer intern**, *DEC SRC*, Palo Alto, California.
1997

1994-1999 **Research Assistant**, *Stanford University*, Stanford, California.

Awards

- Dean's commendation letter for teaching excellence, 2016-2017.
- ICDE 2017 Influential Paper (10-year test-of-time) Award for "t-closeness: A new privacy measure for data publishing".
- 2nd MultiClust Workshop (ECML-PKDD 2011) Best Paper Award for "Generating a diverse set of high-quality clusterings".
- NSF CAREER award (2010-2015)
- John E. and Marva M. Warnock Presidential Endowed Chair for Faculty Innovation in Computer Science (2007-2013)
- Dean's Commendation letter for teaching excellence, Spring 2008, Fall 2008, Spring 2009, Fall 2009, Spring 2010.
- School of Engineering Fellowship, Stanford University, 1994-1995.
- Senate Award for Academic Excellence, I.I.T Kanpur.
- Academic Proficiency Award, I.I.T. Kanpur, all years. [1990-94].

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Manuscripts

- [M1] I. E. Kumar, S. Venkatasubramanian, C. Scheidegger, and S. Friedler. Problems with shapley-value-based explanations as feature importance measures. Under review, 2020.
- [M2] S. A. Friedler, C. Scheidegger, and S. Venkatasubramanian. On the (im)possibility of fairness. *CoRR*, abs/1609.07236, 2016.

Patents

- [P1] N. Mustafa, S. Krishnan, and S. Venkatasubramanian. Hardware-assisted View Dependent Map Simplification, 2004. U.S. Patent 6,812,925.
- [P2] A. Broder, M. Burrows, M. Henzinger, S. Ghemawat, P. Kumar, and S. Venkatasubramanian. The Connectivity Server, 1998. U.S. Patent 6,073,135.
- [P3] S. Krishnan, P. Y. Lee, J. B. Moore, and S. Venkatasubramanian. Global registration of multiple 3d point sets via optimization on a manifold, 2013. U.S. Patent 8,538,138.
- [P4] D. Srivastava and S. Venkatasubramanian. Method and apparatus for tag topology, 2014. U.S. Patent 8,818,984.

Conferences

- [C1] S. Venkatasubramanian and M. Alfano. The philosophical basis of algorithmic recourse. In *Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency, FAT* '20*, page 284–293, New York, NY, USA, 2020. Association for Computing Machinery.
- [C2] C. Marx, R. Phillips, S. Friedler, C. Scheidegger, and S. Venkatasubramanian. Disentangling influence: Using disentangled representations to audit model predictions. In H. Wallach, H. Larochelle, A. Beygelzimer, F. d'Alché-Buc, E. Fox, and R. Garnett, editors, *Advances in Neural Information Processing Systems 32*, pages 4496–4506. Curran Associates, Inc., 2019.
- [C3] B. Fish, A. Bashardoust, D. Boyd, S. Friedler, C. Scheidegger, and S. Venkatasubramanian. Gaps in information access in social networks? In *The World Wide Web Conference, WWW '19*, pages 480–490, New York, NY, USA, 2019. ACM.
- [C4] M. Abbasi, S. A. Friedler, C. Scheidegger, and S. Venkatasubramanian. Fairness in representation: quantifying stereotyping as a representational harm. In *SIAM Conference on Data Mining*, 2019.
- [C5] A. D. Selbst, danah boyd, S. A. Friedler, S. Venkatasubramanian, and J. Vertesi. Fairness and abstraction in sociotechnical systems. In *ACM Conference on Fairness, Accountability and Transparency (FAT*)*. ACM, 2019.
- [C6] S. A. Friedler, C. Scheidegger, S. Venkatasubramanian, S. Choudhary, E. P. Hamilton, and D. Roth. A comparative study of fairness-enhancing interventions in machine learning. In *ACM Conference on Fairness, Accountability and Transparency (FAT*)*. ACM, 2019.

- [C7] A. Bhaskara, S. Daruki, and S. Venkatasubramanian. Sublinear algorithms for MAX CUT and correlation clustering. In *Proc. International Conference on Automata, Logic and Programming*, 2018.
- [C8] D. Ensign, S. A. Friedler, S. Neville, C. Scheidegger, and S. Venkatasubramanian. Decision making with limited feedback: Error bounds for recidivism prediction and predictive policing. In *Algorithmic Learning Theory (ALT)*, 2018.
- [C9] D. Ensign, S. A. Friedler, S. Neville, C. Scheidegger, and S. Venkatasubramanian. Run-away feedback loops in predictive policing. In *1st Conference on Fairness, Accountability and Transparency in Computer Science (FAT*)*, 2018.
- [C10] D. Ensign, S. Neville, A. Paul, and S. Venkatasubramanian. The complexity of explaining neural networks through (group) invariants. In *Algorithmic Learning Theory (ALT)*, 2017.
- [C11] P. Adler, C. Falk, S. A. Friedler, G. Rybeck, C. Scheidegger, B. Smith, and S. Venkatasubramanian. Auditing black-box models for indirect influence. In *Proc. IEEE International Conference on Data Mining*, 2016.
- [C12] A. Abdullah, S. Daruki, C. D. Roy, and S. Venkatasubramanian. Streaming verification of graph properties. In *Algorithms and Computation: 27th International Symposium, ISAAC 2016*, 2016.
- [C13] J. Moeller, V. Srikumar, S. Swaminathan, S. Venkatasubramanian, and D. Webb. Continuous kernel learning. In *Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery*, 2016.
- [C14] J. Moeller, S. Swaminathan, and S. Venkatasubramanian. A unified view of localized kernel learning. In *Proceedings of the SIAM conference on Data Mining*, 2016.
- [C15] M. Feldman, S. Friedler, J. Moeller, C. Scheidegger, and S. Venkatasubramanian. Certifying and removing disparate impact. In *21st ACM Symposium on Knowledge Discovery and Data Mining (KDD)*, 2015.
- [C16] A. Abdullah, R. Kumar, A. McGregor, S. Vassilvitskii, and S. Venkatasubramanian. Sketching, embedding, and dimensionality reduction for information spaces. In *19th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2016.
- [C17] S. Daruki, J. Thaler, and S. Venkatasubramanian. Streaming verification in data analysis. In *Algorithms and Computation: 26th International Symposium, ISAAC 2015, Nagoya, Japan, December 9-11, 2015, Proceedings*, pages 715–726, Berlin, Heidelberg, 2015. Springer Berlin Heidelberg.
- [C18] A. Abdullah and S. Venkatasubramanian. A directed isoperimetric inequality with application to bregman near neighbor lower bounds. In *Proceedings of the Forty-Seventh Annual ACM on Symposium on Theory of Computing, STOC '15*, pages 509–518, New York, NY, USA, 2015. ACM.
- [C19] A. Chakrabarti, G. Cormode, A. McGregor, J. Thaler, and S. Venkatasubramanian. Verifiable Stream Computation and Arthur-Merlin Communication. In D. Zuckerman, editor, *30th Conference on Computational Complexity (CCC 2015)*, volume 33 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 217–243, Dagstuhl, Germany, 2015. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik.

- [C20] J. Moeller, P. Raman, A. Saha, and S. Venkatasubramanian. A geometric algorithm for scalable multiple kernel learning. In *17th International Conference on Artificial Intelligence and Statistics (AISTATS)*, pages 633–642, 2014.
- [C21] P. Chalermsook and S. Venkatasubramanian. Clustering With Center Constraints. In A. Seth and N. K. Vishnoi, editors, *IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2013)*, volume 24 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 401–412, Dagstuhl, Germany, 2013. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik.
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- [C23] P. Raman and S. Venkatasubramanian. Power to the points: Validating data memberships in clusterings. In *Proc. IEEE International Conference on Data Mining (ICDM)*, 2013.
- [C24] Y. Zhao, N. Patwari, J. Phillips, and S. Venkatasubramanian. Radio tomographic imaging and tracking of stationary and moving people via histogram difference. In *12th ACM/IEEE Conference on Information Processing in Sensor Networks (IPSN)*, 2013.
- [C25] H. Daumé, J. Phillips, A. Saha, and S. Venkatasubramanian. Efficient protocols for distributed classification and optimization. In *Proc. 23rd International Conference on Algorithmic Learning Theory (ALT)*, 2012.
- [C26] A. Abdullah, J. Moeller, and S. Venkatasubramanian. Approximate bregman near neighbors in sublinear time: Beyond the triangle inequality. In *Proc. 28th ACM Symposium on Computational Geometry*, June 2012.
- [C27] H. Daumé, J. Phillips, A. Saha, and S. Venkatasubramanian. Protocols for learning on massive distributed data. In *Proc. 15th International Conference on Artificial Intelligence and Statistics*, 2012.
- [C28] A. Saha, P. Rai, H. Daumé III, S. Venkatasubramanian, and S. L. DuVall. Active supervised domain adaptation. In *Proc. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)*, 2011.
- [C29] P. T. Fletcher, J. Moeller, J. M. Phillips, and S. Venkatasubramanian. Computing hulls and centerpoints in positive definite space. In *Algorithms and Data Structures Symposium (WADS)*, 2011.
- [C30] J. Phillips, P. Raman, and S. Venkatasubramanian. Spatially-aware comparison and consensus for clusterings. In *2011 SIAM International Conference on Data Mining*, April 2011.
- [C31] H. Daumé, P. Rai, A. Saha, and S. Venkatasubramanian. Online learning of tasks and their relationships. In *14th International Conference on Artificial Intelligence and Statistics (AISTATS)*, April 2011.
- [C32] S. Joshi, R. V. Kommaraju, J. Phillips, and S. Venkatasubramanian. Comparing shapes and distributions using the kernel distance. In *27th ACM Symposium on Computational Geometry*, June 2011.

- [C33] A. Agarwal, J. Phillips, and S. Venkatasubramanian. Universal multidimensional scaling. In *Proc. ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2010.
- [C34] T. Dasu, S. Krishnan, D. Lin, S. Venkatasubramanian, and K. Yi. Change (detection) you can believe in: Finding distributional shifts in data. In *Proc. Intelligent Data Analysis Symposium*, Aug 2009.
- [C35] P. Rai, H. Daumé, and S. Venkatasubramanian. Streamed Learning: One-Pass SVMs. In *Proc. 21st International Joint Conference on Artificial Intelligence (IJCAI)*, 2009.
- [C36] A. Goyal, S. Venkatasubramanian, and H. Daumé. Streaming for large scale NLP: Language Modelling. In *Proc. NAACL-HLT*, 2009.
- [C37] B. Amadi, M. Hadjieleftheriou, T. Seidl, D. Srivastava, and S. Venkatasubramanian. Type-based categorization of relational attributes. In *Proc. 12th International Conference on Extending Database Technology (EDBT)*, pages 84–95, 2009.
- [C38] S. Krishnan and S. Venkatasubramanian. Approximate symmetry detection for 3D shapes with guaranteed error bounds. In *IEEE Shape Modelling International (SMI)*, 2009.
- [C39] N. Koudas, A. Saha, D. Srivastava, and S. Venkatasubramanian. Metric functional dependencies. In *25th International Conference on Data Engineering (ICDE)*, 2009.
- [C40] P. T. Fletcher, S. Venkatasubramanian, and S. Joshi. Robust statistics on riemannian manifolds via the geometric median. In *Proc. Conference on Vision and Pattern Recognition (CVPR)*, 2008.
- [C41] B. T. Dai, N. Koudas, D. Srivastava, A. K. H. Tung, and S. Venkatasubramanian. Validating multi-column schema matchings by type. In *24th International Conference on Data Engineering (ICDE)*, pages 120–129, 2008.
- [C42] N. Li, T. Li, and S. Venkatasubramanian. t-closeness: Privacy beyond k-anonymity and l-diversity. In *23rd International Conference on Data Engineering, (ICDE)*, pages 106–115, 2007.
- [C43] A. Gopal, D. Niebuhr, and S. Venkatasubramanian. Dc power flow based contingency analysis using graphics processing units. In *PowerTech*, pages 731–736, 2007.
- [C44] A. Buchsbaum, E. Gansner, and S. Venkatasubramanian. Directed graphs and rectangular layouts. In *6th International Asia-Pacific Symposium on Visualization*, pages 61–64, Feb. 2007.
- [C45] A. L. Buchsbaum, A. Efrat, S. Jain, S. Venkatasubramanian, and K. Yi. Restricted strip covering and the sensor cover problem. In *SODA '07: Proceedings of the eighteenth annual ACM-SIAM symposium on Discrete algorithms*, pages 1056–1063, Philadelphia, PA, USA, 2007. Society for Industrial and Applied Mathematics.
- [C46] B. T. Dai, N. Koudas, B. C. Ooi, D. Srivastava, and S. Venkatasubramanian. Rapid identification of column heterogeneity. In *ICDM '06: Proceedings of the Sixth International Conference on Data Mining*, pages 159–170, Washington, DC, USA, 2006. IEEE Computer Society.
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- [C48] S. Guha, A. McGregor, and S. Venkatasubramanian. Streaming and sublinear approximation of entropy and information distances. In *SODA '06: Proceedings of the seventeenth annual ACM-SIAM symposium on Discrete algorithm*, pages 733–742, New York, NY, USA, 2006. ACM.
- [C49] D. Agarwal, J. M. Phillips, and S. Venkatasubramanian. The hunting of the bump: on maximizing statistical discrepancy. In *SODA '06: Proceedings of the seventeenth annual ACM-SIAM symposium on Discrete algorithm*, pages 1137–1146, New York, NY, USA, 2006. ACM.
- [C50] S. Krishnan, P. Y. Lee, J. B. Moore, and S. Venkatasubramanian. Global registration of multiple 3d point sets via optimization-on-a-manifold. In *SGP '05: Proceedings of the third Eurographics symposium on Geometry processing*, pages 187–197, Aire-la-Ville, Switzerland, Switzerland, 2005. Eurographics Association.
- [C51] B. Krishnamurthy, S. Venkatasubramanian, and H. V. Madhyastha. On stationarity in internet measurements through an information-theoretic lens. In *ICDEW '05: Proceedings of the 21st International Conference on Data Engineering Workshops*, pages 1185–1191, Washington, DC, USA, 2005. IEEE Computer Society.
- [C52] Q. Fan, A. Efrat, V. Koltun, S. Krishnan, and S. Venkatasubramanian. Hardware assisted natural neighbour interpolation. In *Proc. 7th Workshop on Algorithm Engineering and Experiments (ALENEX)*, pages 111–120, 2005.
- [C53] D. Johnson, S. Krishnan, J. Chhugani, S. Kumar, and S. Venkatasubramanian. Compressing large boolean matrices using reordering techniques. In *VLDB '04: Proceedings of the Thirtieth international conference on Very large data bases*, pages 13–23. VLDB Endowment, 2004.
- [C54] P. Agarwal, S. Krishnan, N. Mustafa, and S. Venkatasubramanian. Streaming geometric optimization using graphics hardware. In *Proc. 11th European Symposium on Algorithms*, volume 2832 of *LNCS*, pages 544–555, 2003.
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- [C56] S. Venkatasubramanian. The graphics card as a stream computer. In *SIGMOD Workshop on Management and Processing of Massive Data*, 2003.
- [C57] S. Krishnan, N. H. Mustafa, and S. Venkatasubramanian. Hardware-assisted computation of depth contours. In *SODA '02: Proceedings of the thirteenth annual ACM-SIAM symposium on Discrete algorithms*, pages 558–567, Philadelphia, PA, USA, 2002. Society for Industrial and Applied Mathematics.
- [C58] N. Mustafa, E. Koutsofios, S. Krishnan, and S. Venkatasubramanian. Hardware-assisted view-dependent map simplification. In *SCG '01: Proceedings of the seventeenth annual symposium on Computational geometry*, pages 50–59, New York, NY, USA, 2001. ACM.
- [C59] A. Efrat, P. Indyk, and S. Venkatasubramanian. Pattern matching for sets of segments. In *SODA '01: Proceedings of the twelfth annual ACM-SIAM symposium on Discrete algorithms*, pages 295–304, Philadelphia, PA, USA, 2001. Society for Industrial and Applied Mathematics.
- [C60] R. Motwani, R. Panigrahy, V. Saraswat, and S. Venkatasubramanian. On the decidability of accessibility problems (extended abstract). In *STOC '00: Proceedings of the thirty-second annual ACM symposium on Theory of computing*, pages 306–315, New York, NY, USA, 2000. ACM.

- [C61] A. L. Buchsbaum, M. Goldwasser, S. Venkatasubramanian, and J. R. Westbrook. On external memory graph traversal. In *SODA '00: Proceedings of the eleventh annual ACM-SIAM symposium on Discrete algorithms*, pages 859–860, Philadelphia, PA, USA, 2000. Society for Industrial and Applied Mathematics.
- [C62] P. Indyk and S. Venkatasubramanian. Approximate congruence in nearly linear time. In *SODA '00: Proceedings of the eleventh annual ACM-SIAM symposium on Discrete algorithms*, pages 354–360, Philadelphia, PA, USA, 2000. Society for Industrial and Applied Mathematics.
- [C63] P. Indyk, R. Motwani, and S. Venkatasubramanian. Geometric matching under noise: combinatorial bounds and algorithms. In *SODA '99: Proceedings of the tenth annual ACM-SIAM symposium on Discrete algorithms*, pages 457–465, Philadelphia, PA, USA, 1999. Society for Industrial and Applied Mathematics.
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- [C66] J. Kleinberg, R. Motwani, P. Raghavan, and S. Venkatasubramanian. Storage management for evolving databases. In *FOCS '97: Proceedings of the 38th Annual Symposium on Foundations of Computer Science (FOCS '97)*, page 353, Washington, DC, USA, 1997. IEEE Computer Society.
- [C67] P. Finn, L. Kavradi, R. Motwani, J.-C. Latombe, and S. Venkatasubramanian. Search techniques for rational drug design. In *IIS '97: Proceedings of the 1997 IASTED International Conference on Intelligent Information Systems (IIS '97)*, page 2, Washington, DC, USA, 1997. IEEE Computer Society.
- [C68] P. W. Finn, L. E. Kavradi, J.-C. Latombe, R. Motwani, C. R. Shelton, S. Venkatasubramanian, and A. Yao. Rapid: Randomized pharmacophore identification for drug design. In *Symposium on Computational Geometry*, pages 324–333, 1997.

Journals

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- [J2] M. Bocca, O. Kaltiokallio, N. Patwari, and S. Venkatasubramanian. Multiple target tracking with rf sensor networks. *IEEE Transactions on Mobile Computing*, 99(PrePrints):1, 2013.
- [J3] A. Abdullah, J. Moeller, and S. Venkatasubramanian. Approximate bregman near neighbors in sublinear time: beyond the triangle inequality. *Int. J. Comput. Geometry Appl.*, 23(4-5):253–302, 2013.
- [J4] A. Goyal, L. V. S. Lakshmanan, F. Bonchi, and S. Venkatasubramanian. On minimizing budget and time in influence propagation over social networks. *Social Network Analysis and Mining*, 2012. In press.

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- [J5] S. Guha, A. McGregor, and S. Venkatasubramanian. Sublinear estimation of entropy and information distances. *ACM Trans. Algorithms*, 5(4):1–16, 2009.
- [J6] T. Li, N. Li, and S. Venkatasubramanian. t -closeness: A new privacy measure for data publishing. *IEEE Transactions on Data Knowledge and Engineering*, 22(7):943–956, 2010.
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- [J19] N. Shivakumar and S. Venkatasubramanian. Energy efficient indexing for information dissemination in wireless systems. *ACM-Baltzer Journal of Mobile Networks and Nomadic Applications (NOMAD)*, 1995.

Peer-Reviewed Workshops

- [W1] P. Hillyard, N. Patwari, S. Daruki, and S. Venkatasubramanian. You're crossing the line: localizing border crossings using wireless rf links. In *Signal Processing and Signal Processing Education Workshop (SP/SPE), 2015 IEEE*, pages 249–254. IEEE, 2015.
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- [W5] S. Venkatasubramanian and Q. Wang. The johnson-lindenstrauss transform: An empirical study. In *Proc. 13th Workshop on Algorithm Engineering and Experiments (ALENEX)*, pages 164–173, 2011.
- [W6] A. V. P. Grosset, P. Zhu, S. Liu, S. Venkatasubramanian, and M. Hall. Evaluating graph colorings on the gpu (poster). In *16th ACM SIGPLAN Annual Symposium on Principles and Practice of Parallel Programming*, February 2011.
- [W7] R. J. Kyng, J. M. Phillips, and S. Venkatasubramanian. Johnson-Lindenstrauss dimensionality reduction on the simplex. In *20th Fall Workshop on Computational Geometry*, October 2010.
- [W8] A. Goyal, J. Jagarlamudi, H. Daumé, and S. Venkatasubramanian. Sketch techniques for scaling distributional similarity to the web. In *GEMS: Workshop on GEometrical Models of natural language Semantics (in conjunction with ACL 2010)*, 2010.
- [W9] M. Bocca, S. Gupta, O. Kaltiokallio, B. Mager, Q. Tate, S. Kasera, N. Patwari, and S. Venkatasubramanian. Rf-based device-free localization and tracking for ambient assisted living. In *Evaluating AAL Systems through Competitive Benchmarking (EvAAL) Workshop*, 2012.
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- [W11] A. Goyal, J. Jagarlamudi, H. Daumé, and S. Venkatasubramanian. Sketching techniques for large-scale nlp. In *6th Web as Corpus Workshop (in conjunction with NAACL-HLT)*, 2010.

Book Chapters

- [BC1] S. Venkatasubramanian. On measures of privacy. In C. Aggarwal and P. S. Yu, editors, *Privacy-Preserving Data Mining: Models and Algorithms*, pages 81–103. Springer, 2008.
- [BC2] S. Venkatasubramanian. Clustering on streams. In *Encyclopedia of Database Systems*, pages 378–383. Springer US, 2009.

Books

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Blog: <http://geomblog.blogspot.com>

[B1] S. Vassilvitskii and S. Venkatasubramanian. *Clustering: A conceptual approach*. Cambridge University Press, 2017. In preparation.

Articles

[A1] S. Venkatasubramanian. Moving heaven and earth: Distances between distributions. *SIGACT News*, 44(3):56–68, 2013.

[A2] S. Venkatasubramanian. New developments in matrix factorization. *SIGACT News*, 44(1):70–78, 2013.

[A3] S. Venkatasubramanian. Discrete mathematical problems with medical applications dimacs volume 55. *SIGACT News*, 33(4):9–11, 2002.

[A4] S. Venkatasubramanian. A theory repository on the web: a proposal. *SIGACT News*, 30(4):91–95, 1999.

Teaching

- **Spring 2020:** Clustering
- **Fall 2019:** Ethics of Data Science
- **Spring 2019:** Advanced Algorithms
- **Spring 2018:** Computational Geometry
- **Fall 2017:** Ethics of Data Science
- **Fall 2017:** *Seminar:* Reading Classic Theory Papers
- **Spring 2017:** Advanced Algorithms
- **Spring 2017:** When Machines Decide
- **Fall 2016:** Clustering
- **Fall 2016:** When Machines Decide
- **Spring 2016:** Computational Geometry
- **Spring 2016:** *Seminar:* Reading with Purpose
- **Fall 2015:** Advanced Algorithms
- **Spring 2015:** Clustering
- **Fall 2014:** Advanced Algorithms
- **Fall 2014:** *Seminar:* Communication Complexity
- **Spring 2013:** Computational Geometry
- **Spring 2013:** *Seminar:* Accountability in Data Mining
- **Fall 2012:** Advanced Algorithms
- **Spring 2012:** Discrete Structures
- **Fall 2011:** Advanced Algorithms
- **Fall 2011:** *Seminar:* Heuristics for Algorithm Design
- **Fall 2010:** Advanced Algorithms
- **Fall 2010:** *Seminar:* Modelling data with uncertainty
- **Spring 2010:** Computational Geometry
- **Spring 2010:** *Seminar:* Topics in Graph Algorithms
- **Fall 2009:** Advanced Algorithms
- **Fall 2009:** *Seminar:* Approximation Algorithms
- **Spring 2009:** Computational Geometry
- **Spring 2009:** *Seminar:* Clustering
- **Fall 2008:** Advanced Algorithms
- **Fall 2008:** Randomized Algorithms
- **Spring 2008:** *Seminar:* The Geometry of Information Spaces
- **Fall 2007:** Advanced Algorithms
- **Fall 2007:** *Seminar:* Approximate High Dimensional Geometry
- **Spring 2007:** Computational Geometry

Media Exposure

- Jul 10, 2019: I was interviewed about the problems with ICE using DMV databases and facial recognition to search for suspects (Newsy, by Cat Sandoval)
- Jun 25, 2019: On the new trend of using audio surveillance to monitor children in schools (ProPublica, by Jeff Kao)
- Jun 5, 2019: AirTalk with Larry Mantle (to discuss new problems with YouTube's recommendation algorithm).
- Apr 23, 2019: Instagram's use of content filters for sexually suggestive content. (Medium, by Lux Alptraum)
- Mar 10, 2019: Bay Area police try out controversial AI software that tells them where to patrol (The Mercury News, by Ethan Baron)
- Feb 14, 2019: Academics Confirm Major Predictive Policing Algorithm is Fundamentally Flawed (Motherboard, by Caroline Haskins)
- Feb 6, 2019: Why the criminal justice system should abandon algorithms.(The Next Web, by Tristan Green)
- Feb 4, 2019: This is how AI bias really happens—and why it's so hard to fix (Technology Review, by Karen Hao)
- Nov 25, 2018: The dangerous junk science of vocal risk assessment. (The Intercept, by Ava Hoffman)
- Oct 29, 2018: Facing Tomorrow's High-Tech School Surveillance (Motherboard, by Rose Eveleth).
- Oct 26, 2018: BuzzFeed's analysis of Amazon's face recognition system as deployed by Orlando Police (Buzzfeed, by Davey Alba).
- Sep 10, 2018: Sep 14, 2018: Interview with Science Friday.
- Jul 27, 2018: CNN article on the ACLU experiment with Amazon's Rekognition system.
- June 29, 2018: BBC World Service segment on facial recognition.
- June 20, 2018: Bias detectives: the researchers striving to make algorithms fair(Nature News, by Rachel Courtland)
- May 16, 2018: How We Made AI As Racist and Sexist As Humans(The Walrus, by Danielle Groen).
- May 9, 2018: Facial recognition tech is creepy when it works—and creepier when it doesn't(Wired, by Lily Newman).
- Apr 12, 2018. Discriminating algorithms: 5 times AI showed prejudice. (Daniel Cossins, New Scientist)
- Mar 10, 2018: Computersystemen bepalen steeds vaker wat we zien, maar hoe leer je een computer wat ethiek is?(Trouw, by Kiki Kolman and Fadi Nadrous).
- Feb 9, 2018: Google Autocomplete Still Makes Vile Suggestions(WIRED, by Issie Lapowsky).
- Feb 9, 2018: Facial Recognition Is Accurate, if You're a White Guy (NYT, by Steve Lohr).
- Feb 8, 2018: Is your software racist? (Politico, by Li Zhou).
- Oct 4, 2017. Biased policing is made worse by errors in pre-crime algorithms (Matt Reynolds, New Scientist)
- Sep 19, 2017: To Fix Its Toxic Ad Problem, Facebook Must Break Itself (Wired, by Issie Lapowsky)
- Sep 5 2017: Künstliche Intelligenz voller Vorurteile (Neue Zürcher Zeitung, by Eva Wolfangel)
- Aug 31, 2017. When Machines Decide Your Fate (Talk at SLC Public Library)
- Aug 29, 2017: When algorithms decide your fate (RadioActive, on KRCL Radio)
- Jul 20, 2017: Technology Is Biased Too. How Do We Fix It? (FiveThirtyEight, by Laura Hudson)
- Jun 23, 2017: 15 years after 'Minority Report': A cautionary film, ignored. (CNN, by Matt

McFarland)

- Apr 30, 2017: Algorithmic accountability: Algorithms are designed to make our lives easier. The problem is, they're designed by us. (TechCrunch, by Megan Rose Dickey)
- Apr 14, 2017: Artificial intelligence: How to avoid racist algorithms. (BBC News, by Zoe Kleinman)
- Apr 13, 2017: Bad News: Artificial Intelligence Is Racist, Too (Live Science by Stephanie Pappas)
- Apr 13, 2017: Scientists Taught A Robot Language. It Immediately Turned Racist. (BuzzFeed News by Nidhi Subbaraman)
- Apr 13, 2017: AI Learns Gender and Racial Biases from Language (IEEE Spectrum by Jeremy Hsu)
- Mar 10, 2017: Algorithms Learn From Us, And We've Been Bad Parents (NBC News (Mach), by Bahar Ghohipour)
- Sep 27, 2016: To Make AI Less Biased, Give It a Worldview (Jordan Pearson, Motherboard)
- Sep 19, 2016: The Digital Show (Business Radio @ Wharton)
- Sept 8, 2016: A beauty contest was judged by AI and the robots didn't like dark skin (The Guardian, by Sam Levin)
- Aug 3, 2016: Is an algorithm any less racist than a human? (Leigh Alexander, the Guardian)
- July 28, 2016: Pokemon Go shows how technology reflects real-world biases, says prof (CBC Radio's The Current)
- July 18, 2016: Does Crime-Predicting Software Bias Judges? Unfortunately, There's No Data. (Motherboard, by Rose Eveleth)
- July 1, 2016: Not All Swastika Tattoos Are the Same (Yael Grauer, Slate)
- Apr 21, 2016: Amazon Doesn't Consider the Race of Its Customers. Should It? (Bloomberg, by David Ingold and Spencer Soper)
- Apr 14, 2016: Investigating the algorithms that govern our lives (CJR, by Chava Gourarie)
- Mar 21, 2016: Design Bias: The Inherent Bias of Facial Recognition (Motherboard, by Rose Eveleth)
- Mar 20, 2016: When Computers Stand in the Schoolhouse Door (Communications of the ACM)
- Mar 15, 2016: Can Computer Programs Be Racist And Sexist? (NPR's All Tech Considered)
- Mar 08, 2016: The quantified life (podcast by Rose Eveleth)
- Dec 20, 2015: Even an algorithm can be unfair (CBC Radio's The Spark, with Nora Young)
- Nov 20, 2015: Why Machines Discriminate and How to Fix Them (Science Friday)
- Sep 24, 2015: Interview with KPCW's Cool Science Radio
- Sep 7, 2015: Computer algorithms can be biased, but U. team says it can fix problem (Deseret News)
- Aug 21, 2015: Computer scientists find bias in algorithms (IEEE Spectrum)
- Aug 19, 2015: Top of the Mind with Julie Rose (BYU Radio)
- Aug 17, 2015: It's not just humans, COMPUTERS can be prejudiced too: Software may accidentally sort job applications based on race or gender (The Daily Mail)
- Aug 16, 2015: Computer programs can be as biased as humans (Gizmodo)
- Aug 16, 2015: Computer programs can be as biased as humans (NBC News)
- Jul 20, 2015: Racism/sexism in tech (Al Jazeera America)
- Apr 19, 2015: U Computer Scientists Working with Department of Defense on Cybersecurity (KUER)

Presentations

Tutorials

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- Algorithmic Fairness: Measures, methods and Representations. *ACM Conference on Principles of Database Systems, 2019* [7/2019]
- An AI/ML Bootcamp. *Artificial Intelligence at the Frontiers of International Law concerning Armed Conflict*, Harvard Law [12/2018]
- From Pigeons to Fano and Beyond. *Nexus of Information and Computation, February 2016*.
- New Developments in the theory of clustering. *16th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2010* (with Sergei Vassilvitskii).
- Information Theory for Data Management. *ACM Symposium on the Management of Data (SIGMOD) 2010*. (with Divesh Srivastava).
- Information Theory for Data Management. *35th International Conference on Very Large Databases (VLDB), 2009*. (with Divesh Srivastava).
- Data Visualization and Mining Using The GPU. *11th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2005*. (with S. Guha and S. Krishnan)

Distinguished/Invited Lectures/Keynotes

1. On Algorithmic Fairness. Utah Winter Operations Conference. Snowbird, UT [1/2020]
2. Teaching Data Science Ethics. NSF Workshop on Data Science Education across the Undergraduate Curriculum. Stony Brook University [1/2020]
3. Decentering Tech: Reformulating Algorithmic Fairness. Social Responsibility of Algorithms. Paris, France [12/2019]
4. Bias in Machine Learning. SINAIInnovations 2019. New York, NY [11/2019]
5. Algorithmic Fairness. ACLU. [11/2019]
6. Algorithms for Predictive Policing. Amnesty International Expert Meeting on Predictive Policing [5/2019]
7. The Geometry of Fair Representations. Dagstuhl Seminar on Computational Geometry. [4/2019]
8. Algorithm (un)Fairness: A new research area. National University of Singapore Research Week [1/2019]
9. The computational and ethical ramifications of automated decision-making in society. Wellesley College [10/2018]
10. Representations, Context and the Geometry of Bias. Keynote at 2nd Workshop on Ethics in NLP. [6/2018]
11. Mr. Spock has left the building: the computational and ethical ramifications of automated decision-making in society, University of Buffalo. [5/2018]
12. Feedback, big data and policing. Shaping Justice (U. Virginia). [2/2018]
13. Computational Philosophy: Fairness in Automated Decision making. Keynote at 28th International Symposium on Algorithms and Computation (ISAAC). [12/2017]
14. Sublinear verification in data analysis. Keynote at 27th Fall Workshop on Computational Geometry, Stony Brook University. [11/2017]
15. Computational Philosophy and Data Driven Science. Stony Brook University. [11/2017]
16. Ethical Auditing for Accountable Automated Decision-making. Oxford Internet Institute. [10/2017]
17. Panelist, United Nations Special Rapporteur on Privacy Meeting on Privacy, Personalization and AI [9/2017]
18. Algorithmic fairness: From social good to mathematical framework. The Oringer Lecture, Cal-Tech [5/2017]
19. Algorithmic fairness: From social good to mathematical framework. Boise State University. [3/2017]
20. Algorithmic fairness: From social good to mathematical framework. Oregon State University. [11/2016]

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21. An Axiomatic Perspective on Fairness. Dagstuhl Seminar “Data, Responsibly”, Germany. [7/2016]
22. Algorithmic fairness: From social good to mathematical framework. Keynote address, 10th AAAI International Conference on the Web and Social Media (ICWSM), Cologne, Germany. [5/2016]
23. A mathematical theory of fairness. Automation, Prediction and Digital Inequalities. Department of Media and Communication, London School of Economics. [4/2016]
24. A Group-theoretic perspective on deep learning. Information Theory and Applications 2016, San Diego. [2/2016]
25. Algorithmic Fairness. Microsoft Social Computing Symposium, New York. [1/2016]
26. Verifying outsourced computation in a few rounds. Sublinear Algorithms Workshop, Baltimore. [1/2016]
27. Challenges in Fairness-Aware Data Mining. Infosys, Pune. [8/2015]
28. Verifying outsourced computations in a few rounds. Bertinoro Workshop on Algorithms and Data Structures [6/2015]
29. Accountability in Data Mining. Directions in Computer Science, IIT Kanpur. [12/2014]
30. Verifying outsourced computations in a few rounds. UC Irvine. [12/2014]
31. Lower bounds for approximate near neighbor search with Bregman divergences. Bertinoro Workshop on Sublinear Algorithms. [5/2014]
32. Lower bounds for approximate near neighbor search with Bregman divergences. Workshop on Hashing, Copenhagen [7/2014]
33. Metacustering. Haverford College. [4/2014]
34. The Shape of Information. Haverford College. [4/2014]
35. Power to the points: Validating data membership in clusterings. Workshop on Succinct Data Representations and Applications, Simons Institute of Theoretical Computer science. [9/2013]
36. Reverse line stabbing in galleries. Dagstuhl Seminar on Computational Geometry, Dagstuhl, Germany. [3/2013]
37. A Geometric Interpretation of Multiplicative-Weight-Updates for (Multiple) Kernel Learning. Information Theory And Applications Workshop, San Diego. [2/2013]
38. Summer School on Algorithms for Modern Parallel and Distributed Models. Aarhus University [8/2012]
39. Summer School on Massive Data Mining. IT University, Copenhagen. [8/2012]
40. Workshop on Streaming Algorithms. Dortmund, Germany. [7/2012]
41. Protocols for Distributed Learning. From Data to Knowledge: Machine Learning with real-time and streaming applications, Berkeley, CA [5/2012]
42. Protocols for Distributed Learning. NII Shonan Meeting on Large-scale Distributed Computation, Japan [1/2012]
43. Computational Geometry and Learning Summer School, Paris, France. [6/2011]
44. Dimensionality Reduction for Distributions: The Good and the Bad. Yahoo! Research. [5/2011]
45. Workshop on Computational Geometry, Dagstuhl, Germany. [3/2011]
46. Dimensionality Reduction for Distributions: The Good and the Bad. College of Engineering, Montana State University. [2/2011]
47. Dimensionality Reduction for Distributions: The Good and the Bad. Information Theory And Applications Workshop, San Diego. [2/2011]
48. The Geometry of Clusterings, Hard and Soft. SIAM Data Mining Workshop on Clustering: Theory and Applications [5/2010]
49. NSF Workshop on Electronic Design Automation: Past, Present and Future. [7/2009]
50. Non-standard Geometries and Data Analysis. Emerging Trends in Visual Computing (ETVC’08), Paris, France. [11/2008]
51. Histograms, Information Distances And Nonparametric Inference. MSRI Workshop on Mathe-

ematics of Visual Analysis [10/2006]

52. Algorithms For Information Distances. Workshop on Sublinear Algorithms, Dagstuhl. [7/2005]

Colloquia

1. Algorithms in Criminal Justice. Guest lecture in BYU Criminal Law course [2/2020]
2. Algorithms in Criminal Justice. Guest lecture in BYU Criminal Law course [2/2019]
3. The computational and ethical ramifications of automated decision-making in society. Brown University [10/2018]
4. Towards a theory (or theories) of fairness. MIT ToC Colloquium. [10/2018]
5. Algorithmic Fairness. ML in Paris (Meetup) [2/2016]
6. A Geometric Algorithm for Scalable Multiple Kernel Learning. Google, Inc. [4/2014]
7. Metaclustering. Amazon, Inc. [4/2013]
8. Approximate Bregman Near Neighbors. Max Planck Institute, Saarbrücken, Germany. [3/2013]
9. Approximate Bregman Near Neighbors. University of British Columbia, Vancouver [12/2011]
10. Shapely Measures, Measures on Shapes, ... and one distance to rule them all. University of Illinois, Urbana-Champaign. [9/2010]
11. A Unified Algorithmic Framework for Multidimensional Scaling. The Ohio State University [4/2010]
12. Non-standard Geometries and Data Analysis. Texas Tech University [1/2010]
13. Robust Shape Matching on Manifolds. Duke University [1/2009]
14. Information-Theoretic Approaches For Taming Large Data. Harvey Mudd College [3/2008]
15. Information-Theoretic Approaches For Taming Large Data. Biomedical Informatics Department, U. Utah [2/2008]
16. Information-Theoretic Approaches For Taming Large Data. Google Seattle [12/2007]
17. Algorithms Research at the University of Utah. Brigham Young University [10/2007]
18. Histograms, Information Distances And Nonparametric Inference. Indian Institute of Science, Bangalore [6/2007]
19. Rapid Identification of Column Heterogeneity. Yahoo! Research [10/2006]
20. Data Visualization and Mining on the GPU. IBM Research, NY [5/2006].
21. Finding Bumps in Space and Time. Purdue University [4/2006]
22. Rapid Identification of Column Heterogeneity. Computer and Information Sciences Department, University of Pennsylvania [3/2006]
23. Hunting of the Bump: On Maximizing Statistical Discrepancy. Lucent Math Seminar [2/2006]
24. Hunting of the Bump: On Maximizing Statistical Discrepancy. AT&T Math Seminar [11/2005]
25. Data Visualization and Mining on the GPU. University of Toronto [9/2005].
26. Algorithms For Information Distances. EPFL, Lausanne [7/2005].
27. Streaming Algorithms in Graphics Hardware. Florida State University [3/2005]
28. Streaming Algorithms in Graphics Hardware. University of Michigan [10/2004]
29. Streaming Algorithms in Graphics Hardware. University of Chicago [11/2003]
30. Streaming Algorithms in Graphics Hardware. AT&T Database Seminar [4/2003]
31. Rectangular Layouts and Contact Graphs. Department of Computer Science and Information Sciences, University of Pennsylvania. [3/2003]
32. Streaming Algorithms in Graphics Hardware. Lucent Bell Labs [3/2003]
33. Rectangular Layouts and Contact Graphs. Lucent/AT&T Labs Math Seminar, Florham Park, NJ. [4/2002]
34. Digital Geometry Processing in Hardware. Department of Computer Science, Duke University [3/2002].
35. Digital Geometry Processing in Hardware. Department of Computer and Information Science,

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- University of Pennsylvania. [2/2002].
36. Digital Geometry Processing in Hardware. AT&T Labs, Menlo Park [1/2002].
 37. Digital Geometry Processing in Hardware. Stanford Geometry Seminar [1/2002]
 38. Geometric Algorithms in Rational Drug Design. Southern California Algorithms Seminar (USC) (4/00)
 39. On the decidability of accessibility. Lucent/AT&T Labs Math Seminar, Florham Park, NJ. [4/2000]
 40. On External Memory Graph Traversal. Department of Computer Science, SUNY Stony Brook [2/2000].
 41. Geometric Algorithms in Rational Drug Design. Xerox PARC (4/99)
 42. Geometric Algorithms in Rational Drug Design. AT&T Shannon Laboratories (3/99)
 43. Geometric Algorithms in Rational Drug Design. University of California, Irvine (2/99)
 44. Geometric Algorithms in Rational Drug Design. Medical Informatics Department, Stanford University (5/98).
 45. Geometric Algorithms in Rational Drug Design. AT&T Laboratories, New Jersey (2/98).
 46. Geometric Algorithms in Rational Drug Design. Indian Institute of Technology, Kanpur, India (9/97).

Conference/Workshop Presentations

1. Structural Assumptions in Algorithmic Modeling for Policing. Beyond Risk Assessment: Algorithmic Governance in Law Enforcement and Criminal Justice. Drexel University [9/2019]
2. Fairness and Abstraction in Sociotechnical Systems. ACM Conference on Fairness, Accountability and Transparency. [2/2019]
3. Fairness and Abstraction in Sociotechnical Systems. FAT/Asia [1/2019]
4. Fairness and Abstraction in Sociotechnical Systems. *Explanation and Understanding in the Age of Algorithms* [11/2018]
5. Decision Making with Limited Feedback: Error bounds for Recidivism Prediction and Predictive Policing (Poster). 4th workshop on Fairness, Accountability and Transparency in Machine Learning (FATML), [8/2017]
6. Certifying and Removing Disparate Impact. ACM SIGKDD Symposium on Knowledge Discovery and Data Mining, Sydney, Australia. [8/2015]
7. Hulls and Centerpoints in Positive Definite Space. SIAM Minisymposium on Computational Geometry, Joint Mathematics Meetings, Boston. [1/2012]
8. Robust Shape Matching on Manifolds. Fall Workshop on Computational Geometry [10/2008]
9. Hunting of the Bump: On Maximizing Statistical Discrepancy. 3rd International Workshop on Applied Probability, Storrs, CT [5/2006]
10. Compressing Large Boolean Matrices Using Reordering Techniques. 30th VLDB 2004 [8/2004].
11. Streaming Algorithms in Graphics Hardware. SIGMOD-DIMACS Workshop on Management and Processing of Data Streams [6/2003]
12. Streaming Geometric Optimization Using Graphics Hardware. 11th European Symposium on Algorithms [9/2003]
13. Visualizing Data Depth with Graphics Hardware. DIMACS Workshop on Data Depth [5/2003]
14. Streaming Geometric Optimization Using Graphics Hardware. DIMACS Workshop on Geometric Optimization [5/2003]
15. Streaming Algorithms in Graphics Hardware. DIMACS Streaming Working Group [3/2003]
16. Visualizing Data Depth with Graphics Hardware. 13th ACM-SIAM Symposium on Discrete Algorithms [1/2002]
17. Pattern Matching with Sets of Segments. 12th ACM-SIAM Symposium on Discrete Algorithms,

- Washington, DC. [1/2001]
18. Hardware-assisted View Dependent Map Simplification. 10th Annual Fall Workshop on Computational Geometry, Stony Brook [10/2000]
 19. On External Memory Graph Traversal. 11th ACM-SIAM Symposium on Discrete Algorithms, San Francisco, CA. [1/2000].
 20. Approximate Congruence in Nearly Linear Time. 11th ACM-SIAM Symposium on Discrete Algorithms, San Francisco, CA. [1/2000].
 21. Approximate Congruence in Nearly Linear Time. 4th CGC Workshop on Computational Geometry, Baltimore, MD. [10/1999].
 22. Geometric Pattern Matching: A Performance Study. 15th ACM Symposium on Computational Geometry, Miami, FL. [6/1999].
 23. Geometric Point Set Matching: Combinatorial Bounds and Algorithms. 10th ACM-SIAM Symposium on Discrete Algorithms, Baltimore, MD. [1/1999].
 24. Geometric Point Set Matching: Combinatorial Bounds and Algorithms. 2nd CGC Workshop on Computational Geometry, Durham, NC. [10/1997].
 25. Storage management for evolving databases. 38th IEEE Symp. FOCS, Miami, FL. [10/1997]
 26. RAPID: Randomized Pharmacophore Identification in Drug Design. 13th Symposium on Computational Geometry, Nice, France. [6/1997]
 27. RAPID: Randomized Pharmacophore Identification in Drug Design. 1st CGC Workshop on Computational Geometry, Baltimore, MD. [10/1996]
 28. Geometric Manipulation of Flexible Ligands. Workshop on Applied Computational Geometry. [5/1996]

Advising

Post-doctoral researchers

- Jeff Phillips (2009–2011)
- Andrew Selbst (2017-2019)

Ph.D students

- Avishek Saha (2012)
- Parasaran Raman (2013)
- Amirali Abdullah (2015)
- John Moeller (2016)
- Samira Daruki (2017)
- Chitradeep Dutta Roy
- Mohsen Abbasi
- Ashkan Bashardoust
- Dillon Lee
- Pegah Nokhiz
- I. Elizabeth Kumar

M.S students

- Harsh Doshi (2007)
- Jon Gunnip (2008)
- Raj Varma Kommaraju (2010)
- Shobhit Gupta (2012)
- Swetha Machanavajhala (2013)
- Nitin Yadav (2015)
- Sarathkumar Swaminathan (2016)
- Sonam Choudhary (2017-2018)
- Kaveri Gupta (2017-2018)

Undergraduate Students

- Qiushi Wang (2011)
- Chad Brubaker (2012)
- Ariel Herbert-Voss (2016)
- Scott Neville (2017)
- Danielle Ensign (2017)
- Claire Zhang (2018)
- Jessica Campbell (Graduating 2021)

Internal Service

Committees

- School of Computing Awards Committee (2017-)
- University of Utah Funding Incentive Seed Grant Committee (2017-2018)
- Internal Review Committee for Department of Philosophy (2017)
- School of Computing Hiring Committee (2016-2017)
- Joint Math-SoC-BioEngineering Stats Cluster Search Committee (2014-15)
- School of Computing Executive Committee (2014-)
- Distinguished Lecture Series Chair (2014-)
- Data Management and Analysis Track Committee (2007-)
- Admissions Committee (2007-2015)
- Director of Graduate Studies (2009-2012)
- Curriculum Committee (2007-2013)
- Outreach Committee (Spring 2007, 2007-2008)
- College of Engineering Math Committee (2010-2013)

Outreach

- First Lego League team coach (2015-2016). Reached State finals and won Core Values award.
- Prepared two modules for presentation at various outreach events (sorting pancakes, computational origami) in collaboration with Erin Parker and Tina Ziemek (2009)
- Friday Afternoon In Engineering (Apr 2009)
- Presentation to West High Girls' Science Club (Mar 2007)
- Judge for SLVSEF (2007, 2008)

External Service

Boards

- Member of the Computing Community Consortium Council (2018-)
- Member of the Board, ACLU Utah (2017-)
- Member of the Research Advisory Council for the First Judicial District of Pennsylvania.
- Member of the Failure-To-Appear Research Advisory Council for New York City.
- Member of the Scientific Advisory Board, Hirevue Inc., (2018-2019)
- Member of the Board, Hopeful Science, Inc. (2017-)

Editorial Boards

- Internet Mathematics (co-Editor of special issue on Evolving Networks)
- PeerJ Computer Science (Academic Editor)
- International Journal of Computational Geometry and Applications (Associate Editor)

Program Committees:

1. Conference on the Foundations of Responsible Computing (FORC) 2020.
2. 37th International Conference on Machine Learning (ICML), 2020 (Expert Reviewer)
3. Neural Information Processing Systems (NeurIPS), 2019 (Area Chair).
4. 36th International Conference on Machine Learning (ICML), 2019 (Area Chair)
5. The Web Conference (WWW), 2019.
6. 17th Symposium on Experimental Algorithms, 2018.
7. 32nd AAAI Conference on Artificial Intelligence (AAAI), 2018 (Senior PC).
8. 26th ACM International Conference on Information and Knowledge Management (CIKM), 2017 (Senior PC).

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9. Third annual International Conference on Computational Social Science (IC2S2), 2017.
10. 44th International Colloquium on Automata, Languages and Programming (ICALP), 2017.
11. IEEE International Conference on Data Mining (ICDM), 2016.
12. Neural Information Processing Systems (NIPS), 2016
13. 25th ACM International Conference on Information and Knowledge Management (CIKM), 2016 (Senior PC).
14. 33rd International Conference on Machine Learning (ICML), 2016.
15. 23rd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2016.
16. 19th International Conference on Artificial Intelligence and Statistics (AISTATS), 2016.
17. Scandinavian Workshop on Algorithms And Theory (SWAT), 2016
18. SIAM Conference in Data Mining, 2016 (Senior PC)
19. IEEE International Conference on Data Mining (ICDM), 2015
20. Neural Information Processing Systems (NIPS), 2015
21. 33rd Symposium on Theoretical Aspects of Computer Science (STACS), 2016.
22. 22nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2015.
23. 35th Annual Foundations of Software Technology and Theoretical Computer Science conference (FSTTCS), 2015.
24. 18th International Conference on Artificial Intelligence and Statistics (AISTATS), 2015.
25. Topics in Theoretical Computer Science (TTCS), 2015
26. 23rd ACM International Conference on Information and Knowledge Management (CIKM), 2014
27. Neural Information Processing Systems (NIPS), 2014
28. 34th Annual Foundations of Software Technology and Theoretical Computer Science conference (FSTTCS), 2014.
29. IEEE International Conference in Data Mining, 2014 (area chair)
30. 20th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2013
31. International Conference on Data Engineering (ICDE), 2014.
32. First International Workshop on Big Dynamic Distributed Data (BD3), 2013.
33. MASSIVE Workshop on Massive Data Algorithmics, 2013.
34. 1st IEEE International Conference on Big Data (IEEE BigData), 2013
35. 22nd ACM International Conference on Information and Knowledge Management (CIKM), 2013
36. 19th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2013
37. IEEE International Conference on Data Mining, 2013 (Contests co-chair)
38. 16th International Conference on Artificial Intelligence and Statistics (AISTATS), 2013.
39. SIAM Conference on Data Mining (SDM), 2013
40. 24th ACM-SIAM Symposium on Discrete Algorithms (SODA), 2013.
41. 3rd MultiClust Workshop: Discovering, Summarizing and Using Multiple Clusterings (co-located with Siam Conference on Data Mining), 2012. Organizing Committee.
42. 1st workshop on Computational Geometry: Applications, Practice, and Theory (CG:APT) (co-located with Symposium on Computational Geometry), 2012.
43. 18th ACM-SIGKDD conference on Knowledge Discovery and Data Mining (KDD) (Vice Chair), 2012
44. 15th International Conference on Artificial Intelligence (AISTATS), 2012.
45. 39th International Colloquium on Automata, Languages and Programming (ICALP) 2012
46. Posters Chair, 44th ACM Symposium on the Theory of Computing (STOC) 2012
47. 44th ACM Symposium on the Theory of Computing (STOC), 2012.
48. 1st International Conference on Pattern Recognition Applications and Methods (ICPRAM), 2012.
49. Workshop on Massive Data Algorithmics (MASSIVE), 2011.

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50. IEEE International Conference on Data Mining (Vice Chair), 2011
51. 27th IEEE International Conference on Data Engineering (ICDE), 2011.
52. 21st ACM-SIAM Symposium on Discrete Algorithms (SODA), 2010.
53. Workshop on Massive Data Algorithmics, 2009.
54. The 11th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2009).
55. IEEE International Conference on Data Mining, 2009.
56. IEEE International Conference on Data Mining, 2008.
57. 23rd ACM Symposium on Computational Geometry, 2007.
58. 13th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2007.
59. 33rd International Conference on Very Large Databases (VLDB), 2007.
60. 9th Workshop on Algorithms, Engineering and Experiments (ALENEX), 2007.
61. 12th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2006.
62. 14th European Symposium on Algorithms, Sep 2006.
63. 16th ACM-SIAM Symposium on Discrete Algorithms, Jan 2005.
64. 12th Annual Workshop on Computational Geometry, Nov 14-15, 2002 (co-sponsored by DIMACS).

Conference Organization

1. ACM Conference on Fairness, Accountability and Transparency, 2018-present. (Steering Committee)
2. ACM Conference on Fairness, Accountability and Transparency, 2018-present. (Executive Committee)
3. ACM Conference on Fairness, Accountability and Transparency, 2020 (Workshops co-Chair)
4. 1st Conference on Fairness, Accountability and Transparency, 2018. (Publications Chair)
5. Symposium on Algorithms Engineering and Experiments (ALENEX), 2018 (Program Chair)
6. 4th Workshop on Fairness, Accountability and Transparency, 2016. (General Chair)
7. 3rd Workshop on Fairness, Accountability and Transparency, 2016. (Program Chair)
8. SIAM Conference in Data Mining, 2015 (Program Chair)
9. 2nd Workshop on Fairness, Accountability and Transparency, 2015. (Program Chair)
10. SIAM Conference on Data Mining, 2014 (Panels Chair)
11. SIAM Conference on Data Mining, 2014 (Tutorials Chair)
12. 8F-CG: Geometry In the Field (co-located with the ACM Symposium on Computational Geometry) 2012 (Program Chair with Jeff Phillips)
13. 3rd MultiClust Workshop: Discovering, Summarizing and Using Multiple Clusterings (Organizing Committee).
14. SIAM minisymposium on Computational Geometry, Joint Mathematics Meetings, 2012 (General and Program Chair)
15. 15th Annual Workshop on Computational Geometry, 2005 (General Chair).
16. 26th ACM Symposium on Computational Geometry, 2010 (General Chair) (with Valerio Pascucci)

NSF Panels

- CISE Panels (2006,2008,2010,2012,2013,2014,2015,2016,2018)