Bibliography

[AC06] N. Ailon and B. Chazelle, *Approximate nearest neighbors and the fast Johnson-Lindenstrauss transform*, Proc. 38th ACM Symposium on Theory of Computing, 2006, pp. 557–563. 1.2, 5.1, 5.3.1

[AHK05] S. Arora, E. Hazan, and S. Kale, *Fast algorithms for approximate semidefinite programming using the multiplicative weights update method*, 46th IEEE Symposium on Foundations of Computer Science, 2005. 1.1

[AHK06] S. Arora, E. Hazan, and S. Kale, *A Fast Random Sampling Algorithm for Sparsifying Matrices*, Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniques, Springer Berlin, 2006, pp. 272–279. 1.1, 1.3, 1.4.2, 1.4.2, 3.6, 3.6.1, 3.6.1.3, 3.7

[AKL13] D. Achlioptas, Z. Karnin, and E. Liberty, *Matrix entry-wise sampling: Simple is best*, Submitted to KDD 2013, 2013. 1.1, 1.4.2, 3.7

[AKV02] N. Alon, M. Krivelevich, and V. H. Vu, *On the concentration of eigenvalues of random symmetric matrices*, Israel J. Math. **131** (2002), 259–267. 1.3

[AL08] N. Ailon and E. Liberty, *Fast dimension reduction using Rademacher series on dual BCH codes*, Proc. 19th ACM-SIAM Symposium on Discrete Algorithms, 2008, pp. 1–9. 5.3

[ALPTJ11] R. Adamczak, A. E. Litvak, A. Pajor, and N. Tomczak-Jaegermann, *Sharp bounds on the rate of convergence of the empirical covariance matrix*, C. R. Math. Acad. Sci. Paris **349** (2011), 195–200. 1.3, 2.8, 2.8.2

[AM01] D. Achlioptas and F. McSherry, *Fast Computation of Low Rank Matrix Approximations*, Proc. 33rd ACM Symposium on Theory of Computing, 2001, pp. 611–618. 1.1, 1.3, 1.4.2, 1.4.2, 3.7

[AM07] ———, *Fast Computation of Low Rank Matrix Approximations*, J. ACM **54** (2007), no. 2. 1.1, 1.3, 1.4.2, 1.4.2, 3.6, 3.6.1, 3.7

[AMT10] H. Avron, P. Maymounkov, and S. Toledo, *Blendenpik: Supercharging LAPACK's least-squares solver*, SIAM J. Sci. Comput. **32** (2010), no. 3, 1217–1236. 5.1

[AN04] N. Alon and A. Naor, *Approximating the Cut-Norm via Grothendieck's inequality*, Proc. 36th ACM symposium on Theory of Computing, 2004, pp. 72–80. 3.1.0.1

[AW02] R. Ahlswede and A. Winter, *Strong converse for identification via quantum channels*, IEEE Trans. Inform. Theory **48** (2002), no. 3, 569–579. 1.3, 1.4.1, 2.5

[BDHS11] G. Ballard, J. Demmel, O. Holtz, and O. Schwartz, *Minimizing Communication in Numerical Linear Algebra*, SIAM J. Matrix Anal. Appl. **32** (2011), 866–901. 5.1

[BDMI11] C. Boutsidis, P. Drineas, and M. Magdon-Ismail, *Near optimal column-based matrix reconstruction*, Proc. 52nd IEEE Symposium on Foundations of Computer Science (FOCS), 2011, IEEE, 2011, pp. 305–314. 1.1, 1.2, 4.2.1, 4.2.1.1, 4.2.1.2, 4.7, 6.11, 6.8.1

[BF12] A. L. Bertozzi and A. Flenner, *Diffuse interface models on graphs for classification of high dimensional data*, Multiscale Model. Simul. **10** (2012), 1090–1118. 6.7

[BL13] K. Bache and M. Lichman, *UCI Machine Learning Repository*, 2013, http://www.ics.uci.edu/~mlearn/MLRepository.html, Retrieved June 10, 2013. 6.2

[BLM03] S. Boucheron, G. Lugosi, and P. Massart, *Concentration inequalities using the entropy method*, Ann. Probab. **31** (2003), 1583–1614. 3.1, 3.6, 4.1.3

[BMD09] C. Boutsidis, M. W. Mahoney, and P. Drineas, *An Improved Approximation Algorithm for the Column Selection Problem*, Proc. 20th ACM-SIAM Symposium on Discrete Algorithms (SODA 2009), 2009. 4.2.1, 4.2.2, 4.8

[BSS09] J. Batson, D. Spielman, and N. Srivastava, *Twice-Ramanujan Sparsifiers*, Proc. 41st ACM Symposium on Theory of Computing, 2009, pp. 255–262. 3, 3.1.0.1

[BW09] M. Belabbas and P. J. Wolfe, *Spectral methods in machine learning and new strategies for very large datasets*, Proc. Nat. Acad. Sci. **106** (2009), 369–374. 6.3, 6.9.2

[CC00] T. F. Cox and M. A. A. Cox, *Multidimensional Scaling*, 2nd ed., Chapman and Hall/CRC, 2000. 1

[CD05] Z. Chen and J. J. Dongarra, *Condition numbers of Gaussian random matrices*, SIAM J. Matrix Anal. Appl. **27** (2005), 603–620. 1.3

[CD11] J. Chiu and L. Demanet, *Sublinear randomized algorithms for skeleton decompositions*, Preprint, arXiv:1110.4193, 2011. 1.4.4, 6.1, 6.7, 6.2

[CH92] T. F. Chan and P. C. Hansen, *Some Applications of the Rank Revealing QR Factorization*, SIAM J. Sci. Comput. **13** (1992), 727–741. 1

[Cha07] S. Chatterjee, *Stein's method for concentration inequalities*, Probab. Theory Relat. Fields **138** (2007), 305–321. 1.3

[CM08] D. Christofides and K. Markström, *Expansion properties of random Cayley graphs and vertex transitive graphs via matrix martingales*, Random Structures Algorithms **32** (2008), 88–100. 1.3

[Cor96] P. I. Corke, *A Robotics Toolbox for MATLAB*, IEEE Robotics and Automation Magazine **3** (1996), 24–32. 6.2

[CP11] E. Candès and Y. Plan, *A probabilistic and RIPless theory of compressed sensing*, IEEE Trans. Inf. Theory **57** (2011), 7235–7254. 4.1.3

[CR09] E. Candès and B. Recht, *Exact Matrix Completion via Convex Optimization*, Found. Comput. Math. **9** (2009), 717–772. 1.4.4, 5.5.1

[CW09] K. L. Clarkson and D. P. Woodruff, *Numerical Linear Algebra in the Streaming Model*, Proc. 41st ACM Symposium on Theory of Computing, 2009, pp. 205–214. 1, 5.1

[CW12] ———, *Low Rank Approximation and Regression in Input Sparsity Time*, Preprint, arXiv:1207.6365, 2012. 5.1

[d'A11] A. d'Aspremont, *Subsampling Algorithm for Semidefinite Programming*, Stoch. Syst. **2** (2011), no. 1, 274–305. 1.1

[DDF+90] S. Deerwester, S. T. Dumais, G. W. Furnas, T. K. Landauer, and R. Harshman, *Indexing by latent semantic analysis*, J. Am. Soc. Inf. Sci. Technol. **41** (1990), 391–407. 1

[DG98] V. De la Peña and E. Giné, *Decoupling: From Dependence to Independence*, Probability and its Applications, Springer, 1998. 2.6

[DK01] P. Drineas and R. Kannan, *Fast Monte-Carlo Algorithms for Approximate Matrix Multiplication*, Proc. 42nd IEEE Symposium on the Foundations of Computer Science, 2001, pp. 452–459. 1.1, 4.1.3

[DK03] _____, *Pass efficient algorithms for approximating large matrices*, Symposium on Discrete Algorithms, 2003, pp. 223–232. 1.1

[DKM06a] P. Drineas, R. Kannan, and M. W. Mahoney, *Fast Monte Carlo Algorithms for Matrices I: Approximating Matrix Multiplication*, SIAM J. Comput. **36** (2006), no. 1, 132–157. 1.1, 4.1.3

[DKM06b] _____, *Fast Monte Carlo Algorithms for Matrices II: Computing Low-Rank Approximations to a Matrix*, SIAM J. Comput. **36** (2006), no. 1, 158–183. 1.1, 5.1

[DKM06c] _____, *Fast Monte Carlo Algorithms for Matrices III: Computing an Efficient Approximate Decomposition of a Matrix*, SIAM J. Comput. **36** (2006), no. 1, 184–206. 1.1

[DM05] P. Drineas and M. W. Mahoney, *On the Nyström Method for Approximating a Gram Matrix for Improved Kernel-Based Learning*, J. Mach. Learn. Res. **6** (2005), 2153–2175. 6.3, 6.1, 6.13, 6.9.3.4

[DM09] _____, *CUR matrix decompositions for improved data analysis*, Proc. Nat. Acad. Sci. USA **106** (2009), 697–702. 6.2, 6.6.1, 6.15

[DM10] _____, *Effective Resistances, Statistical Leverage, and Applications to Linear Equation Solving*, Preprint, arXiv:1005.3097, 2010. 1.1, 6.2

[DMIMW12] P. Drineas, M. Magdon-Ismail, M. W. Mahoney, and D. P. Woodruff, *Fast approximation of matrix coherence and statistical leverage*, J. Mach. Learn. Res. **13** (2012), 3475–3506. 6.2, 6.14

[DMM08] P. Drineas, M. W. Mahoney, and S. Muthukrishnan, *Relative-Error CUR Matrix Decompositions*, SIAM J. Matrix Anal. Appl. **30** (2008), 844–881. 1.1, 6.15

[DMMS11] P. Drineas, M. W. Mahoney, S. Muthukrishnan, and T. Sarlós, *Faster least squares approximation*, Numer. Math. **117** (2011), 219–249. 1.3

[Dri02] P. Drineas, *Randomized Algorithms for Matrix Operations*, Ph.D. thesis, Yale University, 2002. 5.3.2

[DRVW06] A. Deshpande, L. Rademacher, S. Vempala, and G. Wang, *Matrix Approximation and Projective Clustering via Volume Sampling*, Theory Comput. **2** (2006), 225–247. 1.1

[DZ11] P. Drineas and A. Zouzias, *A note on element-wise matrix sparsification via a matrix-valued Bernstein inequality*, Inform. Process. Lett. **111** (2011), 385–389. 1.1, 1.3, 1.4.2, 3.7

[Far10] B. Farrell, *Limiting Empirical Singular Value Distribution of Restrictions of Discrete Fourier Transform Matrices*, J. Fourier Anal. Appl. (2010), 1–21. 2.7

[FBCM04] C. Fowlkes, S. Belongie, F. Chung, and J. Malik, *Spectral Grouping Using the Nyström Method*, IEEE Trans. Pattern Anal. Mach. Intell. **26** (2004), 214–225. 6.7

[FKV98] A. Frieze, R. Kannan, and S. Vempala, *Fast Monte-Carlo Algorithms for finding low-rank approximations*, Proc. 39th Symposium on Foundations of Computer Science, 1998, pp. 378–390. 1.1, 5.1

[FKV04] _____, *Fast Monte-Carlo algorithms for finding low-rank approximations*, J. ACM **51** (2004), 1025–1041. 1.1

[FNL+09] P. Freeman, J. Newman, A. Lee, J. Richards, and C. Schafer, *Photometric redshift estimation using spectral connectivity analysis*, Mon. Not. R. Astron. Soc. **398** (2009), 2012–2021. 6.7

[GB12] A. Gittens and C. Boutsidis, *Improved matrix algorithms via the Subsampled Randomized Hadamard Transform*, SIAM J. Matrix Anal. Appl., to appear. Preprint available at arXiv:1204.0062, 2012. 1

[GE96] M. Gu and S. C. Eisenstat, *Efficient Algorithms for Computing a Strong Rank-Revealing QR Factorization*, SIAM J. Sci. Comput. **17** (1996), 848–869. 5.5.3

[Gen02] M. Genton, *Classes of Kernels for Machine Learning: A Statistics Perspective*, J. Mach. Learn. Res. **2** (2002), 299–312. 6.9.1

[GGBHD05] I. Guyon, S. R. Gunn, A. Ben-Hur, and G. Dror, *Result analysis of the NIPS 2003 feature selection challenge*, Advances in Neural Information Processing Systems 17, MIT Press, 2005. 6.2

[GH08] S. Gurevich and R. Hadani, *The statistical restricted isometry property and the Wigner semicircle distribution of incoherent dictionaries*, Preprint, arXiv:0812.2602, 2008. 2.7

[Git11] A. Gittens, *The spectral norm error of the naive Nystrom extension*, Preprint, arXiv:1110.5305. Submitted to SIAM J. Matrix Anal. Appl., 2011. 1

[GM13a] A. Gittens and Mahoney M., *Revisiting the Nyström Method for Improved Large-Scale Machine Learning*, Preprint, arXiv:1303.1849, 2013. 1

[GM13b] A. Gittens and M. Mahoney, *Revisiting the Nyström method for improved large-scale machine learning*, Proc. 30th International Conference on Machine Learning, 2013. 1

[GN10] D. Gross and V. Nesme, *Note on sampling without replacing from a finite collection of matrices*, Preprint, arXiv:1001.2738, January 2010. 4.1.3

[Gro11] D. Gross, *Recovering low-rank matrices from few coefficients in any basis*, IEEE Trans. Inform. Theory **57** (2011), 1548–1566. 1.3, 4.1.3, 4.1.3

[GSP+06] A. M. Gustafson, E. S. Snitkin, S. C. J. Parker, C. DeLisi, and S. Kasif, *Towards the identification of essential genes using targeted genome sequencing and comparative analysis*, BMC Genomics **7** (2006), 265. 6.2

[GT09] A. Gittens and J. A. Tropp, *Error bounds for random matrix approximation schemes*, Preprint, arXiv:0911.4108, 2009. 1

[GT11] ———, *Tail bounds for all eigenvalues of a sum of random matrices*, Preprint, arXiv:1104.4513, 2011. 1

[GV96] G. H. Golub and C. F. Van Loan, *Matrix Computations*, 3rd ed., Johns Hopkins University Press, 1996. 4.2.2.1, 4.2.2.1, 5.1, 6.7

[Han90] P. C. Hansen, *Truncated Singular Value Decomposition Solutions to Discrete Ill-Posed Problems with Ill-Determined Numerical Rank*, SIAM J. Sci. Comput. **11** (1990), 503–518. 1

[HJ85] R. A. Horn and C. R. Johnson, *Matrix Analysis*, Cambridge University Press, 1985. 2.1

[HLMS04] J. Ham, D. D. Lee, S. Mika, and B. Schölkopf, *A kernel view of the dimensionality reduction of manifolds*, Proc. 21th International Conference on Machine Learning, 2004. 1

[HMT11] N. Halko, P. G. Martinsson, and J. A. Tropp, *Finding Structure with Randomness: Probabilistic Algorithms for Constructing Approximate Matrix Decompositions*, SIAM Rev. **53** (2011), 217–288. 1.2, 1.4.3, 4.2.1, 4.2.2, 5.1, 5.1, 5.2, 5.2.1, 5.2.1, 5.2.1, 5.2.1, 5.3, 5.4, 6.1, 6.1.1, 6.4.1, 6.4.2, 6.4.2, 6.6.2, 6.6.3, 6.10

[Hoe63] W. Hoeffding, *Probability inequalities for sums of bounded random variables*, J. Amer. Statist. Assoc. **58** (1963), 13–30. 4.1.3

[HP06] S. Har-Peled, *Low rank matrix approximation in linear time*, Manuscript, 2006. 1.1

[HTF08] T. Hastie, R. Tibshirani, and J. Friedman, *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*, 2nd ed., Springer, 2008. 1

[IW12] I. F. Ipsen and T. Wentworth, *The Effect of Coherence on Sampling from Matrices with Orthonormal Columns, and Preconditioned Least Squares Problems*, Preprint, arXiv:1203.4809, March 2012. 6.8.2

[Kar94a] D. R. Karger, *Random sampling in cut, flow, and network design problems*, Proc. 26th ACM Symposium on Theory of Computing, May 1994, pp. 648–657. 3.1.0.1

[Kar94b] ———, *Using randomized sparsification to approximate minimum cuts*, Proc. 5th Annual ACM-SIAM Symposium on Discrete Algorithms, January 1994, pp. 424–432. 3.1.0.1

[Kar95] ———, *Random Sampling in Graph Optimization Problems*, Ph.D. thesis, Stanford University, 1995. 3.1.0.1

[Kar96] ———, *Approximating s–t minimum cuts in $\tilde{O}(n^2)$ time*, Proc. 28th ACM Symposium on Theory of Computing, May 1996, pp. 47–55. 3.1.0.1

[KMT09a] S. Kumar, M. Mohri, and A. Talwalkar, *On sampling-based approximate spectral decomposition*, Proc. 26th International Conference on Machine Learning, 2009. 6.9.3.2

[KMT09b] ———, *Sampling Techniques for the Nyström Method*, Proc. 12th International Workshop on Artificial Intelligence and Statistics, 2009, pp. 304–311. 6.9.3.2

[KMT12] ———, *Sampling Methods for the Nyström Method*, J. Mach. Learn. Res. **13** (2012), 981–1006. 6.3, 6.9.2, 6.9.3.2, 6.9.3.4

[KW92] J. Kuczynski and H. Wozniakowski, *Estimating the largest eigenvalue by the power and Lanczos algorithms with a random start*, SIAM J. Matrix Anal. Appl. **13** (1992), 1094–1122. 5.1

[KY04] B. Klimt and Y. Yang, *The Enron Corpus: A New Dataset for Email Classification Research*, Proc. 15th European Conference on Machine Learning, 2004, pp. 217–226. 6.2

[Lat05] R. Latała, *Some estimates of norms of random matrices*, Proc. Amer. Math. Soc. **133** (2005), 1273–1282. 1.3, 1.4.2, 3, 3.6, 3.6

[Led96] M. Ledoux, *On Talagrand's deviation inequalities for product measures*, ESAIM Probab. Stat. **1** (1996), 63–87. 4.1

[Lie73] E. H. Lieb, *Convex trace functions and the Wigner–Yanase–Dyson conjecture*, Adv. Math. **11** (1973), no. 3, 267–288. 2.4

[LKF07] J. Leskovec, J. Kleinberg, and C. Faloutsos, *Graph Evolution: Densification and Shrinking Diameters*, ACM Transactions on Knowledge Discovery from Data **1** (2007). 6.2

[LPP91] F. Lust-Piquard and G. Pisier, *Noncommutative Khintchine and Paley Inequalities*, Ark. Mat. **29** (1991), 241–260. 1.3

[LS05] E. H. Lieb and R. Seiringer, *Stronger subadditivity of entropy*, Phys. Rev. A **71** (2005), no. 6. 2.4, 2.4

[LT91] M. Ledoux and M. Talagrand, *Probability in Banach Spaces*, Springer-Verlag, 1991. 3.2, 4.1.3

[Mah11] M. Mahoney, *Randomized algorithms for matrices and data*, Foundations and Trends in Machine Learning **3** (2011), 123–224, Preprint, arXiv:1104.5557, 2011. 6.2, 6.4, 6.6.1

[Mah12] ———, *Combinatorial scientific computing*, ch. Algorithmic and Statistical Perspectives on Large-Scale Data Analysis, Chapman and Hall/CRC, 2012. 6.4

[Mec04] M. W. Meckes, *Concentration of norms and eigenvalues of random matrices*, J. Funct. Anal. **211** (2004), 508–524. 1.3

[MJC+12] L. Mackey, M. I. Jordan, R. Y. Chen, B. Farrell, and J. A. Tropp, *Matrix Concentration Inequalities via the Method of Exchangeable Pairs*, Preprint, arXiv:1201.6002., 2012. 1.3

[MP06] S. Mendelson and A. Pajor, *On singular values of matrices with independent rows*, Bernoulli **12** (2006), 761–773. 1.3

[MRT06] P.-G. Martinsson, V. Rohklin, and M. Tygert, *A Randomized Algorithm for the Approximation of Matrices*, Tech. report, Yale, 2006. 1.1, 1.2

[MRT11] P.-G. Martinsson, V. Rokhlin, and M. Tygert, *A randomized algorithm for the decomposition of matrices*, Appl. Comput. Harmon. Anal. **30** (2011), 47–68. 1.1, 1.2

[MTJ12] L. Mackey, A. Talwalkar, and M. I. Jordan, *Divide-and-Conquer Matrix Factorization*, Advances in Neural Information Processing Systems (NIPS) 24, 2012, Technical arXiV:1107.0789, August 2011. 6.6.1

[MZ11] A. Magen and A. Zouzias, *Low Rank Matrix-valued Chernoff Bounds and Approximate Matrix Multiplication*, ACM-SIAM Symposium on Discrete Algorithms (SODA), 2011. 5.1, 5.2.1

[NDT09] N. H. Nguyen, T. T. Do, and T. D. Tran, *A fast and efficient algorithm for low-rank approximation of a matrix*, Proc. 41st ACM Symposium on Theory of Computing, 2009, pp. 215–224. 1.2, 5.1, 5.1, 5.2, 5.2.1, 5.4

[NDT10] N. H. Nguyen, P. Drineas, and T. D. Tran, *Tensor sparsification via a bound on the spectral norm of random tensors*, Preprint, arXiv:1005.4732, 2010. 1.1, 1.3, 1.4.2, 3.7

[NWL+02] T. O. Nielsen, R. B. West, S. C. Linn, O. Alter, M. A. Knowling, J. X. O'Connell, S. Zhu, M. Fero, G. Sherlock, J. R. Pollack, P. O. Brown, D. Botstein, and M. van de Rijn, *Molecular characterisation of soft tissue tumours: a gene expression study*, The Lancet **359** (2002), 1301–1307. 6.2

[Oli09] R. I. Oliveira, *Concentration of the adjacency matrix and of the Laplacian in random graphs with independent edges*, Preprint, arXiv:0911.0600, 2009. 1.3

[Oli10] ———, *Sums of random Hermitian matrices and an inequality due to Rudelson*, Elect. Comm. in Probab. **15** (2010), 203–212. 1.3

[PMT13] D. Paulin, L. Mackey, and J. A. Tropp, *Deriving Matrix Concentration Inequalities from Kernel Couplings*, Preprint, arXiv:1305.0612, 2013. 1.3

[PRTV00] C. H. Papadimitriou, P. Raghavan, H. Tamaki, and S. Vempala, *Latent semantic indexing: a probabilistic analysis*, J. Comput. System Sci. **61** (2000), 217–235. 1.2

[PZB+07] P. Paschou, E. Ziv, E. G. Burchard, S. Choudhry, W. Rodriguez-Cintron, M. W. Mahoney, and P. Drineas, *PCA-Correlated SNPs for Structure Identification in Worldwide Human Populations*, PLoS Genetics **3** (2007), 1672–1686. 6.2, 6.6.1

[Rec11] B. Recht, *A Simpler Approach to Matrix Completion*, J. Mach. Learn. Res. **12** (2011), 3413–3430, . 1.3, 4.1.3

[Roh00] J. Rohn, *Computing the Norm $\|A\|_{\infty\to 1}$ is NP-Hard*, Linear Multilinear Algebra **47** (2000), 195–204. 3.1

[RT08] V. Rokhlin and M. Tygert, *A fast randomized algorithm for overdetermined linear least-squares regression*, Proc. Natl. Acad. Sci. USA **105** (2008), no. 36, 13212–13217. 5.1

[Rud99] M. Rudelson, *Random Vectors in the Isotropic Position*, J. Funct. Anal. **164** (1999), no. 1, 60–72. 1.3, 2.8

[RV07] M. Rudelson and R. Vershynin, *Sampling from large matrices: An approach through geometric functional analysis*, J. ACM **54** (2007), no. 4. 1.1, 1.3, 2.7, 3

[RV08] _____, *The least singular value of a random square matrix is $O(n^{-1/2})$*, C. R. Math. Acad. Sci. Paris **346** (2008), 893–896. 1.3

[SAJ10] N. Srebro, N. Alon, and T. S. Jaakkola, *Generalization Error Bounds for Collaborative Prediction with Low-Rank Matrices*, Proc. 13th International Conference on Artificial Intelligence and Statistics, 2010. 1

[Sar06] T. Sarlós, *Improved Approximation Algorithms for Large Matrices via Random Projections*, Proc. 47th IEEE Symposium on Foundations of Computer Science, IEEE Computer Society, 2006, pp. 143–152. 1.2, 4.1.3

[SS08] D. A. Spielman and N. Srivastava, *Graph Sparsification by Effective Resistances*, Proc. 40th ACM Symposium on Theory of Computing, 2008. 3.1.0.1

[Ste77] G. W. Stewart, *On the Perturbation of Pseudo-inverses, Projections and Linear Least Squares Problems*, SIAM Rev. **19** (1977), 634–662. 6.4.2

[SV] N. Srivastava and R. Vershynin, *Covariance estimation for distributions with $2+\varepsilon$ moments*, Ann. Probab., to appear. Preprint, arXiv:1106.2775. 2.8

[Sza76] S. J. Szarek, *On the best constants in the Khintchin inequality*, Studia Math **58** (1976), 197–208. 3.2

[Sza90] S. J. Szarek, *Spaces with Large Distance to ℓ_∞^n and Random Matrices*, Amer. J. Math. **112** (1990), 899–942. 1.3

[Tal95] M. Talagrand, *Concentration of measure and isoperimetric inequalities in product spaces*, Inst. Hautes Études Sci. Publ. Math. **81** (1995), 73–205. 1.3

[Tal05] _____, *The Generic Chaining: Upper and Lower Bounds of Stochastic Processes*, Springer, 2005. 1.3

[TKR08] A. Talwalkar, S. Kumar, and H. Rowley, *Large-scale manifold learning*, 2008 Proc. IEEE Conference on Computer Vision and Pattern Recognition, 2008. 6.9.3.2

[TR10] A. Talwalkar and A. Rostamizadeh, *Matrix Coherence and the Nyström Method*, Proc. 26th Conference on Uncertainty in Artifical Intelligence (UAI 2010), 2010. 1.4.4, 5.5.1, 6.3, 6.10, 6.9.2

[Tro08] J. A. Tropp, *On the conditioning of random subdictionaries*, Appl. Comput. Harmon. Anal. **25** (2008), no. 1, 1–24. 2.7

[Tro09] _____, *Column subset selection, matrix factorization, and eigenvalue optimization*, Proc. 19th Annual ACM-SIAM Symposium on Discrete Algorithms, 2009, pp. 978–986. 3

[Tro11a] _____, *Freedman's inequality for matrix martingales*, Electron. Commun. Probab. **16** (2011), 262–270. 1.3

[Tro11b] _____, *Improved analysis of the subsampled randomized Hadamard transform*, Adv. Adapt. Data Anal., special issue, "Sparse Representation of Data and Images" **3** (2011), 115–126. 4.2, 5.3.1, 5.3.1, 5.6, 5.3.1, 5.3.1, 5.3.2, 6.6.2

[Tro11c] _____, *User-Friendly Tail Bounds for Matrix Martingales*, Tech. report, California Institute of Technology, 2011, http://www.acm.caltech.edu/~jtropp/reports/Tro10-User-Friendly-Martingale-TR.pdf, retrieved June 13, 2011. 1.3

[Tro12] _____, *User-Friendly Tail Bounds for Sums of Random Matrices*, Found. Comput. Math. **12** (2012), 389–434. 1.3, 1.4.1, 2.1, 2.4, 2.4, 2.4, 2.4, 2.5, 2.5, 2.5, 2.6, 2.6, 2.6, 4.1.3

[Ver11a] R. Vershynin, *Compressed sensing: Theory and applications*, ch. Introduction to the non-asymptotic analysis of random matrices, Cambridge University Press, 2011. 2.8, 2.8

[Ver11b] ———, *How close is the sample covariance matrix to the actual covariance matrix?*, J. Theoret. Probab. (2011), 1–32. 2.8, 2.8.2

[vW96] A. W. van der Vaart and J. A. Wellner, *Weak Convergence and Empirical Processes: With Applications to Statistics*, Springer, 1996. 3.2

[WLRT08] F. Woolfe, E. Liberty, V. Rokhlin, and M. Tygert, *A fast randomized algorithm for the approximation of matrices*, Appl. Comput. Harmon. Anal. **25** (2008), no. 3, 335–366. 1.1, 1.2, 5.1, 5.1, 5.2.1, 5.4, 5.5.3

[WS01] C. K. I. Williams and M. Seeger, *Using the Nyström Method to Speed Up Kernel Machines*, Annual Advances in Neural Information Processing Systems 13, 2001, pp. 682–688. 1.1, 1.4.4, 6.1, 6.1, 6.7

[YMS+13] C.-W. Yip, M. W. Mahoney, A. S. Szalay, I. Csabai, T. Budavári, R. F. G. Wyse, and L. Dobos, *Objective Identification of Informative Wavelength Regions in Galaxy Spectra*, Manuscript submitted for publication. (2013). 6.2, 6.6.1