

LIST OF PUBLICATIONS⁴

Thesis

- T. Weissman, “Universal Prediction in the Presence of Noise,” Ph.D. thesis, Technion—I.I.T., September 2001 (Advisor: N. Merhav).

Refereed Journal Articles

Published

1. T. Weissman, N. Merhav, and A. Somekh-Baruch, “Twofold universal prediction schemes for achieving the finite-state predictability of a noisy individual binary sequence,” *IEEE Trans. Inform. Theory*, vol. IT-47, no. 5, pp. 1849-1866, July 2001.
2. T. Weissman and N. Merhav, “Universal prediction of binary individual sequences in the presence of noise,” *IEEE Trans. Inform. Theory*, vol. IT-47, no. 6, pp. 2151-2173, September 2001.
3. T. Weissman and N. Merhav, “Tradeoffs between the excess-code-length exponent and the excess-distortion exponent in lossy source coding,” *IEEE Trans. Inform. Theory*, vol. IT-48, no. 2, pp. 396-415, February 2002.
4. T. Weissman and N. Merhav, “On limited-delay lossy coding and filtering of individual sequences,” *IEEE Trans. Inform. Theory*, vol. IT-48, no. 3, pp. 721-733, March 2002.
5. N. Merhav and T. Weissman, “Scanning and Prediction in Multi-Dimensional Data Arrays,” *IEEE Trans. Inform. Theory*, vol. IT-49, no. 1, pp. 65-82, January 2003.
6. A. Dembo and T. Weissman, “The Minimax Distortion Redundancy in Noisy Source Coding,” *IEEE Trans. Inform. Theory*, vol. IT-49, pp. 3020-3030, November 2003.
7. T. Weissman and N. Merhav, “On Competitive Prediction and its Relation to Rate-Distortion Theory,” *IEEE Trans. Inform. Theory*, vol. 49, no. 12, pp. 3185-3194, December 2003.
8. T. Weissman and N. Merhav, “Universal prediction of random binary sequences in a noisy environment,” *Annals of Applied Probability*, vol. 14, no. 1, pp. 54-89, February 2004.
9. T. Weissman, “Universally Attainable Error-Exponents for Rate-Distortion Coding of Noisy Sources,” *IEEE Trans. Inform. Theory*, vol. 50, no. 6, pp. 1229-1246, June 2004.
10. T. Weissman, E. Ordentlich, G. Seroussi, S. Verdú and M. Weinberger, “Universal Discrete Denoising: Known Channel,” *IEEE Trans. Inform. Theory*, vol. 51, no. 1, pp. 5-28, January 2005. **Received the 2006 Paper Award of the IEEE Joint IT/Com Societies.**

⁴A coauthor whose name is boldfaced is/was a PhD student under my supervision and the paper is part of his/her thesis.

11. A. Dembo and T. Weissman, “Universal Denoising for the Finite-Input-General-Output Channel”, *IEEE Trans. Inform. Theory*, vol. 51, no. 4, pp. 1507-1517, April 2005.
12. T. Weissman and N. Merhav, “On Causal Source Codes with Side Information”, *IEEE Trans. Inform. Theory*, vol. 51, no. 11, pp. 4003-4013, November 2005.
13. **R. Zhang** and T. Weissman, “Discrete Denoising for Channels with Memory”, *Comm. in Information and Systems*, vol. 5, no. 2, pp. 257-288, 2005.
14. T. Weissman and E. Ordentlich, “The empirical distribution of rate-constrained codes”, *IEEE Trans. Inform. Theory*, vol. 51, no. 11, pp. 3718-3733, November 2005.
15. E. Ordentlich and T. Weissman, “On the Optimality of Symbol by Symbol Fitering and Denoising”, *IEEE Trans. Inform. Theory*, vol. 52, no. 1, pp. 19-40, January 2006.
16. **G. Gemelos, S. Sigurjonsson** and T. Weissman, “Algorithms for Discrete Denoising under Channel Uncertainty”, *IEEE Trans. Signal Processing*, vol. 54, no. 6, pp. 2263-2276, June 2006.
17. **G. Gemelos, S. Sigurjonsson** and T. Weissman, “Universal Minimax Discrete Denoising under Channel Uncertainty”, *IEEE Trans. Inform. Theory*, vol. 52, no. 8, pp. 3476-3497, August 2006.
18. N. Merhav and T. Weissman, “Coding for the feedback Gel’fand-Pinsker channel and the feedforward Wyner-Ziv source”, *IEEE Trans. Inform. Theory*, vol. 52, no. 9, pp. 4207 - 4211, September 2006.
19. **G. Gemelos** and T. Weissman, “On the Entropy Rate of Pattern Processes”, *IEEE Trans. Inform. Theory*, vol. 52, no. 9, pp. 3994 - 4007, September 2006.
20. T. Weissman and A. El Gamal, “Source Coding with Limited Side Information Lookahead at the Decoder”, *IEEE Trans. Inform. Theory*, vol. 52, no. 12, pp. 5218 - 5239, December 2006.
21. **S. Matloub** and T. Weissman, “Universal Zero-Delay Joint Source-Channel Coding”, *IEEE Trans. Inform. Theory*, vol. 52, no. 12, pp. 5240 - 5250, December 2006.
22. **S. Pereira** and T. Weissman, “Denoising and filtering under the probability of excess loss criterion”, *IEEE Trans. Inform. Theory*, vol. 53, no. 4, pp. 1265 - 1281, April 2007.
23. T. Weissman, E. Ordentlich, M. Weinberger, A. Somekh-Baruch and N. Merhav, “Universal Filtering via Prediction”, *IEEE Trans. Inform. Theory*, vol. 53, no. 4, pp. 1253 - 1264, April 2007.
24. E. Ordentlich, G. Seroussi, S. Verdú, M. Weinberger and T. Weissman, “Reflections on the DUDE”, *IEEE Information Theory Society Newsletter*, vol. 57, no. 2, pp. 5-10, June 2007 (invited).
25. **A. Cohen**, N. Merhav and T. Weissman, “Scanning and sequential decision making for multi-dimensional data, Part I: the noiseless case”, *IEEE Trans. Inform. Theory*, vol. 53, no. 9, pp. 3001 - 3020, September 2007.

26. **T. Moon** and T. Weissman, “Discrete Universal Filtering via Hidden Markov Modeling”, *IEEE Trans. Inform. Theory*, vol. 54, no. 2, pp. 692 – 708, February 2008.
27. **H. Permuter**, P. Cuff, B. Van Roy and T. Weissman, “Capacity of the Trapdoor Channel with Feedback,” *IEEE Trans. Inform. Theory*, vol. 54, no. 7, pp. 3150–3165, July 2008.
28. T. Weissman, “How to filter an ‘individual sequence with feedback’,” *IEEE Trans. Inform. Theory*, vol. 54, no. 8, pp. 3831–3841, August 2008.
29. N.C. Martins and T. Weissman, “Coding Schemes for Additive White Noise Channels with Feedback Corrupted by Quantization or Bounded Noise”, *IEEE Trans. Inform. Theory*, vol. 54, no. 9, pp. 4274–4282, September 2008.
30. S. Verdú and T. Weissman, “The Information Lost in Erasures,” *IEEE Trans. Inform. Theory*, vol. 54, no. 11, pp. 5030–5058, November 2008.
31. **A. Cohen**, T. Weissman and N. Merhav, “Scanning and sequential decision making for multi-dimensional data, Part II: the noisy case,” *IEEE Trans. Inform. Theory*, vol. 54, no. 12, pp. 5609–5631, December 2008.
32. **K. Sivaramakrishnan** and T. Weissman, “Universal denoising of discrete-time continuous-amplitude signals,” *IEEE Trans. Inform. Theory*, vol. 54, no. 12, pp. 5632–5660, December 2008.
33. **T. Moon** and T. Weissman, “Universal FIR MMSE filtering,” *IEEE Trans. Sig. Proc.*, vol. 57, no. 3, pp. 1068–1083, December 2008.
34. **H. Permuter**, T. Weissman and A. Goldsmith, “Finite-state channels with time-invariant deterministic feedback”, *IEEE Trans. Inform. Theory*, vol. 55, no. 2, pp. 644–662, February 2009.
35. **K. Sivaramakrishnan** and T. Weissman, “A Context Quantization Approach to Universal denoising”, *IEEE Trans. Sig. Proc.*, vol. 57, no. 6, pp. 2110–2129, June 2009.
36. **H. Permuter**, T. Weissman and J. Chen, “Capacity Region of the Multiple Access Channel With or Without Feedback,” *IEEE Trans. Inform. Theory*, vol. 55, no. 6, pp. 2455–2477, June 2009.
37. **T. Moon** and T. Weissman, “Discrete Denoising with Shifts,” *IEEE Trans. Inform. Theory*, vol. 55, no. 11, pp. 5284–5301, November 2009.
38. **S. Jalali**, S. Verdú and T. Weissman, “A Universal Scheme for Wyner-Ziv Coding of Discrete Sources,” *IEEE Trans. Inform. Theory*, vol. 56, no. 4, pp. 1737–1750, April 2010.
39. V.F. Farias, C.C. Moallemi, B. Van Roy and T. Weissman, “Universal Reinforcement Learning,” *IEEE Trans. Inform. Theory*, vol. 56, no. 5, pp. 2441–2454, May 2010.
40. H. Permuter, Y. Steinberg and T. Weissman, “Two-way Source Coding with a Helper,” *IEEE Trans. Inform. Theory*, vol. 56, no. 6, pp. 2905–2919, June 2010.
41. J. Chen, **H. Permuter** and T. Weissman, “Tighter Bounds on the Capacity of Finite-State Channels via Markov Set-Chains,” *IEEE Trans. Inform. Theory*, vol. 56, no. 8, pp. 3660–3691, August 2010.

42. T. Weissman, “The Relationship Between Causal and Non-Causal Mis-matched Estimation in Continuous-Time AWGN Channels”, *IEEE Trans. Inform. Theory*, vol. 56, no. 9, pp. 4256–4273, September 2010.
43. T. Weissman, “Capacity of Channels with Action-Dependent States”, *IEEE Trans. Inform. Theory*, vol. 56, no. 11, pp. 5396–5411, November 2010.
44. Y.H. Kim, A. Lapidot and T. Weissman, “Error Exponents for the Gaussian Channel with Active Noisy Feedback”, *IEEE Trans. Inform. Theory*, vol. 57, no. 3, pp. 1223–1236, March 2011.
45. H. H. Permuter, Y. H. Kim and T. Weissman, “Interpretations of Directed Information in Portfolio Theory, Data Compression, and Hypothesis Testing,” *IEEE Trans. Inform. Theory*, vol. 57, no. 6, pp. 3248–3259, June 2011.
46. T. Weissman and H. Permuter, “Source Coding with a Side Information ‘Vending Machine’”, *IEEE Trans. Inform. Theory*, vol. 57, no. 7, pp. 4530–4544, June 2011.
47. **H. Asnani**, H. H. Permuter and T. Weissman, “Probing Capacity,” *IEEE Trans. Inform. Theory*, vol. 57, no. 11, pp. 7317–7332, November 2011.
48. **Y. K. Chia**, H. H. Permuter and T. Weissman, “Cascade, Triangular and Two Way Source Coding with Degraded Side Information at the Second User,” *IEEE Trans. Inform. Theory*, vol. 58, no. 1, pp. 189–206, January 2012.
49. R. Atar and T. Weissman, “Mutual Information, Relative Entropy, and Estimation in the Poisson Channel,” *IEEE Trans. Inform. Theory*, vol. 58, no. 3, pp. 1302–1318, March 2012.
50. **S. Jalali**, A. Montanari and T. Weissman, “Lossy Compression of Discrete Sources via the Viterbi Algorithm,” *IEEE Trans. Inform. Theory*, vol. 58, no. 4, pp. 2475–2489, April 2012.
51. **S. Jalali** and T. Weissman, “Denoising via MCMC-based Lossy Compression,” *IEEE Trans. Sig. Proc.*, vol. 60, no. 6, pp. 3092–3100, June 2012.
52. H. H. Permuter and T. Weissman, “Cascade and Triangular Source Coding with Side Information at the First Two Nodes,” *IEEE Trans. Inform. Theory*, vol. 58, no. 6, pp. 3309–3349, June 2012.
53. **S. Jalali** and T. Weissman, “Block and Sliding-Block Lossy Compression via MCMC,” *IEEE Trans. on Communications*, vol. 60, no. 8, pp. 2187–2198, August 2012.
54. **K. Venkat** and T. Weissman, “Pointwise Relations between Information and Estimation in Gaussian Noise,” *IEEE Trans. Inform. Theory*, vol. 58, no. 10, pp. 6264–6281, October 2012.
55. D. Baron and T. Weissman, “An MCMC Approach to Universal Lossy Compression of Analog Sources,” *IEEE Trans. Sig. Proc.*, vol. 60, no. 10, pp. 5230–5240, October 2012.
56. A. Gupta, S. Verdú and T. Weissman, “Achievable Complexity-Performance Tradeoffs in Lossy Compression,” *Problems of Information Transmission*, vol. 48, no. 4, pp. 352–375, October 2012. (Original Russian Text: *Problemy Peredachi Informatsii*, vol. 48, no. 4, pp. 62–87.)

57. T. Weissman, Y. H. Kim and H. H. Permuter, "Directed Information, Causal Estimation, and Communication in Continuous Time," *IEEE Trans. Inform. Theory*, vol. 59, no. 3, pp. 1271–1287, March 2013.
58. **H. Asnani** and T. Weissman, "On Real Time Coding with Limited Lookahead," *IEEE Trans. Inform. Theory*, vol. 59, no. 6, pp. 3582–3606, June 2013.
59. **Y.K. Chia, H. Asnani** and T. Weissman, "Multiterminal Source Coding with Action Dependent Side Information," *IEEE Trans. Inform. Theory*, vol. 59, no. 6, pp. 3653–3667, June 2013.
60. D. Pavlichin, G. Yona and T. Weissman, "The Human Genome Contracts Again," *Bioinformatics*, vol. 29, no. 17, pp. 2199–2202, June 2013.
61. **I. Ochoa, H. Asnani**, D. Bharadia, M. Chowdhury, T. Weissman, and G. Yona "QualComp: a new lossy compressor for quality scores based on rate distortion theory," *BMC Bioinformatics*, 2013, 14:187. Highly accessed.
62. **H. Asnani**, H. H. Permuter and T. Weissman, "Successive Refinement with Decoder Cooperation and its Channel Coding Duals," *IEEE Trans. Inform. Theory*, vol. 59, no. 9, pp. 5511–5533, September 2013.
63. **J. Jiao**, L. Zhao, H. H. Permuter, Y. H. Kim and T. Weissman, "Universal Estimation of Directed Information," *IEEE Trans. Inform. Theory*, vol. 59, no. 10, pp. 6220–6242, October 2013.
64. **Y.K. Chia**, R. Soundararajan and T. Weissman, "Estimation with a Helper who Knows the Interference," *IEEE Trans. Inform. Theory*, vol. 59, no. 11, pp. 7097–7117, November 2013.
65. R. Mirghaderi, A. Goldsmith and T. Weissman, "Achievable Error Exponents in the Gaussian Channel with Rate-Limited Feedback," *IEEE Trans. Inform. Theory*, vol. 59, no. 12, pp. 8144–8156, December 2013.
66. T. A. Courtade and T. Weissman, "Multiterminal Source Coding under Logarithmic Loss," *IEEE Trans. Inform. Theory*, vol. 60, no. 1, pp. 796–807, January 2014.
67. **L. Zhao, Y.K. Chia** and T. Weissman, "Compression with Actions," *IEEE Trans. Inform. Theory*, vol. 60, no. 2, pp. 740–761, February 2014.
68. **V. Misra** and T. Weissman, "The Porosity of Additive Noise Sequences," *IEEE Trans. Inform. Theory*, vol. 60, no. 6, pp. 3144–3162, June 2014.
69. **A. No** and T. Weissman, "Minimax Filtering via Relations Between Information and Estimation," *IEEE Trans. Inform. Theory*, vol. 60, no. 8, pp. 4832–4847, August 2014.
70. **H. , H. H. Permuter** and T. Weissman, "To Feed or Not to Feed Back," *IEEE Trans. Inform. Theory*, vol. 60, no. 9, pp. 5150–5172, September 2014.
71. H. H. Permuter, **H. Asnani** and T. Weissman, "Capacity of a POST Channel with and without Feedback," *IEEE Trans. Inform. Theory*, vol. 60, no. 10, pp. 6041–6057, October 2014.
72. **J. Jiao**, T. Courtade, **A. No**, **K. Venkat** and T. Weissman, "Information Measures: the Curious Case of the Binary Alphabet," *IEEE Trans. Inform. Theory*, vol. 60, no. 12, pp. 7616–7626, October 2014.

73. **I. Ochoa**, M. Hernaez and T. Weissman, “Aligned Genomic Data Compression via Improved Modeling,” *Journal of Bioinformatics and Computational Biology*, vol. 12, no. 6, 17 pages, December 2014.
74. **Y. Carmon**, S. Shamai and T. Weissman, “Comparison of the Achievable Rates in OFDM and Single Carrier Modulation with I.I.D. Inputs,” *IEEE Trans. Inform. Theory*, vol. 61, no. 4, pp. 1795–1818, April 2015.
75. A. Ingber, T. Courtade and T. Weissman, “Compression for Quadratic Similarity Queries,” *IEEE Trans. Inform. Theory*, vol. 61, no. 5, pp. 2729–2747, May 2015.
76. **J. Jiao**, **K. Venkat**, **Y. Han** and T. Weissman, “Minimax Estimation of Functionals of Discrete Distributions ,” *IEEE Trans. Inform. Theory*, vol. 61, no. 5, pp. 2835–2885, May 2015.
77. **I. Ochoa**, M. Hernaez and T. Weissman, “iDoComp: A Compression Scheme for Assembled Genomes,” *Bioinformatics*, vol. 31, no. 5, pp. 626–633, May 2015.
78. **H. Asnani**, I. Shomorony, S. Avestimehr and T. Weissman, “Network Compression: Worst-Case Analysis,” *IEEE Trans. Inform. Theory*, vol. 61, no. 7, pp. 3980–3995, July 2015.
79. **J. Jiao**, T. Courtade, **K. Venkat** and T. Weissman, “Justification of Logarithmic Loss via the Benefit of Side Information,” *IEEE Trans. Inform. Theory*, vol. 61, no. 10, pp. 5357–5365, October 2015.
80. G. Malysa , M. Hernaez, M. Rao , K. Ganesan, **I. Ochoa** and T. Weissman, “QVZ: lossy compression of quality values,” *Bioinformatics*, vol. 31, no. 19, pp. 3122–3129, October 2015.
81. Z. Wang, T. Weissman and O. Milenkovic, “smallWig: Parallel Compression of RNA-seq WIG Files,” *Bioinformatics*, advance access, October 2015.
82. **Y. Han**, **J. Jiao** and T. Weissman, “Minimax Estimation of Discrete Distributions under ℓ_1 Loss,” *IEEE Trans. Inform. Theory*, vol. 61, no. 11, pp. 6343–6354, July 2015.
83. S. Deorowicz, S. Grabowski, **I. Ochoa**, Mikel Hernaez and T. Weissman “Comment on: ‘ERGC: An efficient referential genome compression algorithm’ ”, *Bioinformatics*, November 2015.
84. A. Kipnis, A. Goldsmith, T. Weissman and Y. Eldar, “Distortion Rate Function of Sub-Nyquist Sampled Gaussian Processes,” *IEEE Trans. Inform. Theory*, vol. 62, no. 1, pp. 401–429, January 2016.
85. **I. Ochoa**, M. Hernaez, R. Goldfeder, E. Ashley and T. Weissman, “Effect of lossy compression of quality scores on variant calling,” *Briefings in Bioinformatics*, vol. 17, no. 2, March 2016.
86. F. Steiner, S. Dempfle, A. Ingber and T. Weissman, “Compression for Quadratic Similarity Queries: Finite Blocklength and Practical Schemes,” *IEEE Trans. Inform. Theory*, vol. 62, no. 5, pp. 2737–2747, May 2016.
87. **A. No**, A. Ingber and T. Weissman, “Strong Successive Refinability and Rate-Distortion-Complexity Tradeoff,” *IEEE Trans. Inform. Theory*, vol. 62, no. 6, pp. 3618–3635, June 2016.

88. **K. Venkat**, T. Weissman, **Y. Carmon** and S. Shamai, “Information, Estimation and Lookahead in the Gaussian Channel,” *IEEE Trans. Signal Processing*, vol. 64, no. 14, pp. 3605–3618, July 2016.
89. K. Kittichokechai, Y.K. Chia, T. J. Oechtering, M. Skoglund and T. Weissman, “Secure Source Coding with a Public Helper,” *IEEE Trans. Inform. Theory*, vol. 62, no. 7, pp. 3930–33949, July 2016.
90. **K. S. Tatwawadi**, **I. Ochoa**, M. Hernaez and T. Weissman, “Fast retrieval from compressed collections of genomic variants,” *Bioinformatics*, vol. 32, pp. 479–486, September 2016.
91. **A. No** and T. Weissman, “Rateless Lossy Compression via the Extremes,” *IEEE Trans. Inform. Theory*, vol. 62, no. 10, pp. 5484–5495, October 2016.
92. R. Xu, J. Chen, T. Weissman and J. Zhang, “When is Noisy State Information at the Encoder as Useless as No Information or as Good as Noise-Free State?” *IEEE Trans. Inform. Theory*, vol. 63, no. 2, pp. 960–974, February 2017.
93. **J. Jiao**, **K. Venkat** and T. Weissman, “Relations between Information and Estimation in Discrete-Time Lévy Channels,” *IEEE Trans. Inform. Theory*, vol. 63, no. 6, pp. 3579–3594, June 2017.
94. B. Lee, T. Moon, S. Yoon and T. Weissman, “DUDE-Seq: Fast, flexible, and robust denoising for targeted amplicon sequencing,” *PLOS ONE*, vol. 12, no. 7, July 2017.
95. **J. Jiao**, **K. Venkat** and T. Weissman, “Maximum Likelihood Estimation of Functionals of Discrete Distributions,” *IEEE Trans. Inform. Theory*, vol. 63, no. 10, pp. 6774–6798, February 2017.
96. **S. Chandak**, **K. Tatwawadi** and T. Weissman, “Compression of genomic sequencing reads via hash-based reordering: Algorithm and Analysis”, *Bioinformatics*, Volume 34, Issue 4, Pages 558–567, February 2018.
97. **Y. Han**, **J. Jiao** and T. Weissman, “Generalizations of Maximal Inequalities to Arbitrary Selection Rules,” *Statistics and Probability Letters*, vol. 137, pp. 19–25, June 2018.
98. **J. Jiao**, **K. Venkat** and T. Weissman, “Mutual Information, Relative Entropy and Estimation Error in Semi-martingale Channels,” *IEEE Trans. Inform. Theory*, vol. 64, no. 10, pp. 6662 – 6671, October 2018.
99. **Y. Han**, **J. Jiao** and T. Weissman, “Minimax Estimation of the L_1 Distance,” *IEEE Trans. Inform. Theory*, vol. 64, no. 10, pp. 6672 – 6706, October 2018.
100. **S. Chandak**, **K. S. Tatwawadi**, I. Ochoa, M. Hernaez and T. Weissman, “SPRING: A next-generation compressor for FASTQ data,” *Bioinformatics*, December 2018.
101. D. Pavlichin, **J. Jiao** and T. Weissman, “Approximate Profile Maximum Likelihood,” *Journal of Machine Learning Research*, 20(122), pp. 1–55, 2019.
102. **Y. Han**, **J. Jiao**, **I. Fischer-Hwang** and T. Weissman, “Estimating the Fundamental Limits is Easier than Achieving the Fundamental Limits,” *IEEE Trans. Inform. Theory. IEEE Trans. Inform. Theory*, vol. 65, no. 10, pp. 6704 – 6715, October 2019.

103. **J. Mardia, J. Jiao**, E. Tanczos, R. D. Nowak and T. Weissman, “Concentration inequalities for the empirical distribution of discrete distributions: beyond the method of types,” *Information and Inference*, November 2019.
104. **Y. Han, J. Jiao**, T. Weissman and Y. Wu, “Optimal rates of entropy estimation over Lipschitz balls,” *Annals of Statistics*, Vol. 48, No. 6, 3228–3250, 2020.
105. **Y. Han, J. Jiao** and T. Weissman, “Minimax Rate-Optimal Estimation of Divergences between Discrete Distributions,” *IEEE Journal on Selected Areas in Information Theory*, vol. 1, no. 3, pp. 814 – 823, November 2020.
106. **S. Chandak, K. S. Tatwawadi**, S. Srivatsan and T. Weissman, “Impact of lossy compression of nanopore raw signal data on basecalling and consensus accuracy,” *Bioinformatics*, December 2020.

In Press/Accepted⁵

1. **Y. Han**, A. Ozgur and T. Weissman, “Geometric Lower Bounds for Distributed Parameter Estimation under Communication Constraints,” to appear in *IEEE Trans. on Information Theory*.
2. **Y. Han, K. Tatwawadi**, Z. Zhou, G. Kurri, V. Prabhakaran and T. Weissman, “Optimal Communication Rates and Combinatorial Properties for Common Randomness Generation”, to appear in *IEEE Trans. on Information Theory*.

Submitted (under review)⁶

1. **Y. Han**, Z. Zhou, A. Flores, E. Ordentlich and T. Weissman “Learning to Bid Optimally and Efficiently in Adversarial First-price Auctions,” submitted to *Operations Research* and available on arxiv.
2. **Y. Han**, Z. Zhou and T. Weissman “Optimal No-regret Learning in Repeated First-price Auctions,” submitted to *Management Science* and available on arxiv.
3. D. Pavlichin, H. Lee, S. Greer, S. Grimes, T. Weissman and H. Ji “KmerKeys: a web resource for searching indexed genome assemblies and variants,” submitted to *Nucleic Acids Research*.
4. M. Zhang, **I. T. Fischer-Hwang**, K. Li, J. Bai, J. Chen, T. Weissman, J. Y. Zou and Z. Lu “Classification and clustering of RNA crosslink-ligation data reveal complex structures and homodimers,” submitted to *Genome Research*.
5. B. Lau, **S. Chandak**, S. Roy, **K. Tatwawadi**, M. Wootters, T. Weissman and H.P. Ji “Magnetic DNA random access memory with nanopore readouts and exponentially-scaled combinatorial addressing,” submitted to *Science Advances*.
6. P. Flicek, H. Li, E. Kenny, T. Marschall, V. Schneider, A. Felsenfeld, A. Phillippy, C. Hutter, H. Sofia, M. Smith, E. Jarvis, K. Howe, H. Ji, T. Weissman, B. Paten, D. Haussler, J. Lucas, M. Chaisson, M. Asri, K. Miga,

⁵Manuscripts available upon request.

⁶Manuscripts available upon request.

E. Eichler, E. Garrison, J. McMichael, L. Antonacci-Fulton, R. Fulton, T. Lindsay, T. Wang, H. Lawson, C. Carson, D. Purushotham, I. Hall, H. Heine, A. Beecher Popejoy and R. Cook-Deegan “The Human Pangenome Project: A Global Resource to Map Genomic Diversity,” submitted to *Nature*.

Refereed Conference/Symposia Proceedings

Published

1. T. Weissman and N. Merhav, "On prediction of individual noisy sequences relative to a set of experts under general loss functions," *Proc. COLT '99*, pp. 19–28, Santa Cruz, July 1999.
2. T. Weissman and N. Merhav, "Universal prediction of individual binary sequences in the presence of arbitrarily varying, memoryless, additive noise," *Proc. Int. Symp. Inf. Th. 2000*, p. 97, Sorrento, Italy, June 2000.
3. T. Weissman and S. Mannor, "On Universal Compression of Multi-Dimensional Data Arrays Using Self-Similar Curves," *Proc. 38th Annu. Allerton Conf. Communication, Control, and Computing*, pp. 470–479, Monticello, IL, October 4-6, 2000 (invited).
4. T. Weissman and N. Merhav, "On limited-delay lossy coding of individual sequences," *Proc. Int. Symp. Inf. Th. 2001*, p. 97, Washington D.C., USA, June 2001.
5. N. Merhav and T. Weissman, "Scanning and Prediction in Multi-Dimensional Data Arrays," *Proc. Int. Symp. Inf. Th. 2002*, p. 317, Lausanne, Switzerland, June 2002.
6. A. Dembo and T. Weissman, "The Minimax Distortion Redundancy in Noisy Source Coding," *Proc. Int. Symp. Inf. Th. 2002*, p. 318, Lausanne, Switzerland, June 2002.
7. T. Weissman and N. Merhav, "On Causal Source Codes with Side Information," *Proc. 40th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, October 4-6, 2002 (invited).
8. T. Weissman, E. Ordentlich, G. Seroussi, S. Verdú and M. Weinberger, "Universal Discrete Denoising," *Proc. IEEE 2002 Information Theory Workshop*, Bangalore, India, October 20-25, 2002.
9. T. Weissman, "Context-Based Denoising: Universally Optimal and Practical Schemes," *Proc. 7th Purdue International Symposium on Statistics*, p. 56, Purdue University, June 19-24, 2003.
10. T. Weissman, "Universally Attainable Error-Exponents for Rate-Distortion Coding of Noisy Sources," *Proc. Int. Symp. Inf. Th. ,* p. 194, Pacifico Yokohama, Yokohama, Japan, June-July 2003.
11. T. Weissman, E. Ordentlich, G. Seroussi, S. Verdú and M. Weinberger, "Universal Discrete Denoising: Known Channel," *Proc. Int. Symp. Inf. Th. ,* p. 84, Pacifico Yokohama, Yokohama, Japan, June-July 2003.
12. T. Weissman and N. Merhav, "On Competitive Prediction and its Relation to Rate-Distortion Theory and to Channel Capacity Theory," *Proc. Int. Symp. Inf. Th. ,* p. 81, Pacifico Yokohama, Yokohama, Japan, June-July 2003.
13. E. Ordentlich, G. Seroussi, S. Verdú, M. Weinberger and T. Weissman, "A universal discrete image denoiser and its application to binary images," *Proc. IEEE Int. Conf. on Image Processing*, p. 117-120, vol. 1, Catalonia, Spain, September 2003.

14. **S. Matloub** and T. Weissman, “On Competitive Zero-Delay Joint Source-Channel Coding”, *Proc. 38th Annu. Conf. on Information Sciences and Systems, CISS 2004*, Princeton, NJ, March 17-19, 2004.
15. E. Ordentlich, T. Weissman, M. Weinberger, A. Somekh-Baruch and N. Merhav, “Discrete Universal Filtering Through Incremental Parsing”, *Proc. Data Compression Conference (DCC 2004)*, Snowbird, Utah, pp. 352–361, March 23-25, 2004.
16. E. Ordentlich, G. Seroussi, S. Verdú, K. Viswanathan, M. Weinberger and T. Weissman, “Channel Decoding of Systematically Encoded Unknown Redundant Sources,” *Proc. Int. Symp. Inf. Th.* p. 165, Chicago, IL, June-July 2004.
17. E. Ordentlich and T. Weissman, “On the Optimality of Symbol by Symbol Fitering and Denoising,” *Proc. Int. Symp. Inf. Th.* p. 200 , Chicago, IL, June-July 2004.
18. A. Dembo and T. Weissman, “Universal Denoising for the Finite-Input-General-Output Channel,” *Proc. Int. Symp. Inf. Th.* p. 201, Chicago, IL, June-July 2004.
19. **G. Gemelos**, S. Sigurjonsson and T. Weissman, “Universal Minimax Discrete Denoising under Channel Uncertainty,” *Proc. Int. Symp. Inf. Th.* p. 199, Chicago, IL, June-July 2004.
20. T. Weissman and E. Ordentlich, “The empirical distribution of rate-constrained codes,” *Proc. Int. Symp. Inf. Th.* p. 464, Chicago, IL, June-July 2004.
21. **R. Zhang** and T. Weissman, “On discrete denoising for the burst noise channel”, *Proc. 42nd Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, September 29 - October 1, 2004 (invited).
22. **G. Gemelos**, S. Sigurjonsson and T. Weissman, “Universal minimax binary image denoising under channel uncertainty”, *Proc. 11th Int. Conf. on Image Processing, ICIP 2004*, October 24-27, Singapore.
23. E. Ordentlich and T. Weissman, “Asymptotics for the entropy rate of a hidden Markov process”, *Proc. 2004 IEEE Inf. Th. workshop*, San Antonio, Texas, October 24-29, 2004.
24. E. Ordentlich, M. Weinberger and T. Weissman, “Efficient pruning of multi-directional context trees with applications to universal denoising and compression”, *Proc. 2004 IEEE Inf. Th. workshop*, San Antonio, Texas, October 24-29, 2004.
25. **G. Gemelos** and T. Weissman, “On the Entropy Rate of Pattern Sequences,” *Proc. Data Compression Conference (DCC 2005)*, p. 233-242, Snowbird, Utah March 29-31, 2005.
26. V.F. Farias, C.C. Moallemi, B. Van Roy and T. Weissman, “A Universal Scheme for Learning,” *Proc. Int. Symp. Inf. Th.*, p. 1158–1162, Adelaide, Australia, September 2005.
27. **T. Moon** and T. Weissman, “Discrete Universal Filtering via Hidden Markov Modelling,” *Proc. Int. Symp. Inf. Th.*, p. 1285–1289, Adelaide, Australia, September 2005.

28. N. Merhav and T. Weissman, "Coding for the feedback Gel'fand-Pinsker channel and the feedforward Wyner-Ziv source," *Proc. Int. Symp. Inf. Th.*, p. 1506–1510, Adelaide, Australia, September 2005.
29. E. Ordentlich and T. Weissman, "Approximations for the Entropy Rate of a Hidden Markov Process," *Proc. Int. Symp. Inf. Th.*, p. 2198–2202, Adelaide, Australia, September 2005.
30. E. Ordentlich, M. Weinberger and T. Weissman, "Multi-Directional Context Sets with Applications to Universal Denoising and Compression," *Proc. Int. Symp. Inf. Th.*, p. 1270-1274, Adelaide, Australia, September 2005.
31. C. Nair, E. Ordentlich and T. Weissman, "On asymptotic filtering and entropy rate for a hidden Markov process in the rare transitions regime," *Proc. Int. Symp. Inf. Th.*, p. 1838–1842, Adelaide, Australia, September 2005.
32. **G. Gemelos** and T. Weissman, "On the relationship between process and pattern entropy rate," *Proc. Int. Symp. Inf. Th.*, p. 2208–2212, Adelaide, Australia, September 2005.
33. A. El Gamal and T. Weissman, "Source Coding with Causal Side Information at the Decoder," *Proc. 43rd Annu. Allerton Conf. Communication, Control, and Computing*, p. 826–835, Monticello, IL, September 28 - 30, 2005 (invited).
34. **S. Pereira** and T. Weissman, "Denoising and filtering under the probability of excess loss criterion," *Proc. 43rd Annu. Allerton Conf. Communication, Control, and Computing*, p. 426–435, Monticello, IL, September 28 - 30, 2005.
35. T. Weissman, "Compound sequential decisions against the well-informed antagonist", *Proc. 2006 IEEE Inf. Th. workshop (ITW2006)*, Punta del Este, Uruguay, March 13-17, 2006 (invited).
36. **K. Sivaramakrishnan** and T. Weissman, "Universal denoising of discrete-time continuous-amplitude signals," *Proc. Int. Symp. Inf. Th.*, Seattle, Washington, July 2006.
37. **H. Permuter**, T. Weissman and A. Goldsmith, "Capacity of finite-state channels with time-invariant deterministic feedback," *Proc. Int. Symp. Inf. Th.*, Seattle, Washington, July 2006.
38. S. Verdú and T. Weissman, "Erasure Entropy," *Proc. Int. Symp. Inf. Th.*, Seattle, Washington, July 2006.
39. A. El Gamal and T. Weissman, "Source Coding with Limited Side Information Lookahead at the Decoder," *Proc. Int. Symp. Inf. Th.*, Seattle, Washington, July 2006.
40. **A. Cohen**, N. Merhav and T. Weissman, "Universal scanning and sequential decision making for multi-dimensional data," *Proc. Int. Symp. Inf. Th.*, Seattle, Washington, July 2006.
41. Y.H. Kim, A. Lapidoth and T. Weissman, "On Error Exponents for Channels with Noisy Feedback", *Proc. 44th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, September 27 – 29th, 2006 (invited).

42. T. Weissman, "Sequential Filtering of an Individual Sequence with Feedback", *Proc. 44th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, September 27 – 29th, 2006 (invited).
43. N.C. Martins and T. Weissman, "Coding Schemes for Additive White Noise Channels with Feedback Corrupted by Quantization or Bounded Noise", *Proc. 44th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, September 27 – 29th, 2006 (invited).
44. **H. Permuter**, P. Cuff, B. Van Roy and T. Weissman, "Capacity of the Trapdoor Channel with Feedback", *Proc. 44th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, September 27 – 29th, 2006.
45. **K. Sivaramakrishnan** and T. Weissman, "Universal denoising of continuous-valued signals with applications to images," *Proc. Int. Conf. Image Proc.*, Atlanta, Georgia, October 2006.
46. Y.H. Kim, A. Lapidot and T. Weissman, "Upper Bounds on Error Exponents of Channels with Feedback", *Proc. 24th IEEE Conf. Electrical and Electronics Engineers* Eilat, Israel, November 15 – 17th, 2006 (invited).
47. **A. Cohen**, N. Merhav and T. Weissman, "Universal Scanning of Mixing Random Fields and the Performance of the Peano-Hilbert Scan," *Proc. 24th IEEE Conf. Electrical and Electronics Engineers* Eilat, Israel, November 15 – 17th, 2006. **Received the Best Student Paper Award**.
48. **K. Sivaramakrishnan** and T. Weissman, "New denoising techniques for analogue data: Theory and algorithms", *Proc. 2nd Annu. Workshop on Information Theory and its Applications* (ITA07), UCSD, San Diego, California, January 29th – February 2nd, 2007.
49. **A. Cohen**, N. Merhav and T. Weissman, "Scanning and sequential decision making for multi-dimensional data", *Proc. 2nd Annu. Workshop on Information Theory and its Applications* (ITA07), UCSD, San Diego, California, January 29th – February 2nd, 2007.
50. **S. Jalali**, S. Verdú and T. Weissman, "A Universal Wyner-Ziv Scheme for Discrete Sources," *Proc. Int. Symp. Information Theory*, Nice, France, July 2007.
51. **K. Sivaramakrishnan** and T. Weissman, "A Context Quantization Approach to Universal Denoising," *Proc. Int. Symp. Information Theory*, Nice, France, July 2007.
52. **S. Jalali** and T. Weissman, "New Bounds on the Rate-Distortion Function of a Binary Markov Source," *Proc. Int. Symp. Information Theory*, Nice, France, July 2007.
53. Y.-H. Kim, A. Lapidot and T. Weissman, "The Gaussian Channel with Noisy Feedback," *Proc. Int. Symp. Information Theory*, Nice, France, July 2007.
54. **T. Moon** and T. Weissman, "Competitive On-line Linear FIR MMSE Filtering," *Proc. Int. Symp. Information Theory*, Nice, France, July 2007.
55. **H. Permuter**, P.W. Cuff, B. Van Roy and T. Weissman, "Capacity and Zero-Error Capacity of the Chemical Channel with Feedback," *Proc. Int. Symp. Information Theory*, Nice, France, July 2007.

56. **A. Cohen**, N. Merhav and T. Weissman, “Scanning, Filtering, and Prediction for Random Fields Corrupted by Gaussian Noise,” Proc. Int. Symp. Information Theory, Nice, France, July 2007.
57. **H. Permuter** and T. Weissman, “On Separation in the Presence of Feedback,” Proc. 2007 IEEE Inf. Th. Workshop (ITW2007), Lake Tahoe, California, September 2-6, 2007 (invited).
58. **T. Moon** and T. Weissman, “Discrete Denoising with Shifts,” *Proc. 45th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, September 26 – 28th, 2007 (invited).
59. **S. Jalali** and T. Weissman, “Lossy Source Coding via Markov Chain Monte Carlo,” *Proc. 2008 International Zurich Seminar on Communications*, p. 80–83, Zurich, Switzerland, March 12–14, 2008.
60. **S. Jalali** and T. Weissman, “Near Optimal Lossy Source Coding and Compression-Based Denoising via Markov Chain Monte Carlo,” *Proc. 42nd Annu. Conf. on Information Sciences and Systems (CISS 2008)*, Princeton, NJ, March 19 – 21st, 2008 (invited).
61. S. Bross and T. Weissman, “On successive refinement for the Wyner-Ziv problem with partially cooperating decoders,” Proc. Int. Symp. Information Theory, Toronto, Ontario, Canada, July 2008.
62. A. Gupta, S. Verdú and T. Weissman, “Linear-Time Near-Optimal Lossy Compression,” Proc. Int. Symp. Information Theory, Toronto, Ontario, Canada, July 2008.
63. **H. Permuter**, T. Weissman and J. Chen, “On the Capacity of Finite-State Channels,” Proc. Int. Symp. Information Theory, Toronto, Ontario, Canada, July 2008.
64. **H. Permuter** and T. Weissman, “New Bounds for the Capacity Region of the Finite-State Multiple Access Channel,” Proc. Int. Symp. Information Theory, Toronto, Ontario, Canada, July 2008.
65. **S. Jalali** and T. Weissman, “Rate Distortion Coding of Discrete Sources via Markov Chain Monte Carlo,” Proc. Int. Symp. Information Theory, Toronto, Ontario, Canada, July 2008.
66. **H. Permuter**, Y. H. Kim and T. Weissman, “On Directed Information and Gambling,” Proc. Int. Symp. Information Theory, Toronto, Ontario, Canada, July 2008.
67. H. Permuter, Y. Steinberg and T. Weissman, “Rate-Distortion with Common Rate-Limited Side Information to the Encoder and Decoder”, *Proc. 25th IEEE Conf. Electrical and Electronics Engineers* Eilat, Israel, December 3 – 5th, 2008.
68. T. Weissman, “Action in Information Theory”, *Proc. 4th Annu. Workshop on Information Theory and its Applications* (ITA09), UCSD, San Diego, California, February 8-13, 2009 (invited).
69. **S. Jalali**, A. Montanari and T. Weissman, “An Implementable Scheme for Universal Lossy Compression of Discrete Markov Sources,” *Proc. Data Compression Conference (DCC 2009)*, Snowbird, Utah March 16-18, 2009.

70. **S. Jalali**, A. Montanari and T. Weissman, "An Iterative Scheme for Near Optimal and Universal Lossy Compression," *Proc. 2009 IEEE Inf. Th. workshop (ITW2009)*, Volos, Greece, June 10-12, 2009 (invited).
71. H. Permuter, Y. Steinberg and T. Weissman, "Problems We Can Solve with a Helper", *Proc. 2009 IEEE Inf. Th. workshop (ITW2009)*, Volos, Greece, June 10-12, 2009.
72. H. Permuter and T. Weissman, "Source Coding with a Side Information 'Vending Machine' at the Decoder," *Proc. Int. Symp. Information Theory*, Seoul, Korea, June 28th-July 3rd, 2009.
73. H. Permuter, Y. Steinberg and T. Weissman, "Two-Way Source Coding with a Rate-Limited Helper", *Proc. Int. Symp. Information Theory*, Seoul, Korea, June 28th-July 3rd, 2009.
74. T. Weissman, "Capacity of Channels with Action-Dependent States," *Proc. Int. Symp. Information Theory*, Seoul, Korea, June 28th-July 3rd, 2009.
75. S. Bross and T. Weissman, "An Outer Bound for Side-Information Scalable Source Coding with Partially Cooperating Decoders," *Proc. Int. Symp. Information Theory*, Seoul, Korea, June 28th-July 3rd, 2009.
76. Y. H. Kim, H. Permuter and T. Weissman, "Directed Information and Causal Estimation in Continuous Time," *Proc. Int. Symp. Information Theory*, Seoul, Korea, June 28th-July 3rd, 2009.
77. Y. H. Kim, H. Permuter and T. Weissman, "Directed Information, Causal Estimation and Communication in Continuous Time," *Proc. Control over Communication Channels (ConCom 2009)*, Seoul, Korea, June 27th, 2009.
78. **S. Jalali** and T. Weissman, "Multiple Description Coding of Discrete Ergodic Sources," *Proc. 47th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, September 30 – October 2, 2009.
79. T. Weissman, "The Relationship Between Causal and Non-Causal Mismatched Estimation in Continuous-Time AWGN Channels," *Proc. 2010 IEEE Inf. Th. workshop (ITW2010)*, Cairo, Egypt, January 6-8, 2010.
80. H. Permuter and T. Weissman, "Cascade Source Coding with Side Information at the First Two Nodes," *Proc. 2010 IEEE Inf. Th. workshop (ITW2010)*, Cairo, Egypt, January 6-8, 2010 (invited).
81. Y.H. Kim, A. Lapidot and T. Weissman, "Error Exponents for the Gaussian Channel with Noisy Active Feedback," *Proc. 2010 IEEE Inf. Th. workshop (ITW2010)*, Cairo, Egypt, January 6-8, 2010 (invited).
82. D. Baron and T. Weissman, "An MCMC approach to Lossy Compression of Continuous Sources," *Proc. Data Compression Conference (DCC 2010)*, Snowbird, Utah March 24-26, 2010.
83. H. Permuter and T. Weissman, "Cascade and Triangular Source Coding with Side Information at the First Two Nodes," *Proc. Int. Symp. Information Theory*, Austin, Texas, June 13-18, 2010.
84. L. Zhao, H. H. Permuter, Y. H. Kim and T. Weissman, "Universal Estimation of Directed Information," *Proc. Int. Symp. Information Theory*, Austin, Texas, June 13-18, 2010.

85. H.I. Su and T. Weissman, "Universal Lossless Compression-based Denoising," *Proc. Int. Symp. Information Theory*, Austin, Texas, June 13-18, 2010.
86. **Y. K. Chia**, H. H. Permuter and T. Weissman, "Cascade, Triangular and Two Way Source Coding with Degraded Side Information at the Second User," *Proc. 48th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, September 29 - October 1, 2010.
87. **H. Asnani**, H. H. Permuter and T. Weissman, "To Observe or Not to Observe the Channel State," *Proc. 48th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, September 29 - October 1, 2010 (invited).
88. H. H. Permuter, **H. Asnani** and T. Weissman, "Multiple Access Channel with Partial-Cribbing Encoders," *Proc. 26th IEEE Conf. Electrical and Electronics Engineers* (IEEEEI 2010), Eilat, Israel, November 17 – 20th, 2010.
89. T. Moon, T. Weissman and J.Y. Kim, "Computationally Efficient Denoising for Heterogeneous Images using Quadtree and Space-Filling Curves," 17th International Conference on Digital Signal Processing (DSP2011), July 6-8, 2011, Corfu, Greece.
90. R. Atar and T. Weissman, "Mutual Information, Relative Entropy, and Estimation in the Poisson Channel," *Int. Symp. Information Theory*, Saint-Petersburg, Russia, July 31 - August 5, 2011.
91. **Y.K. Chia** and T. Weissman, "Cascade and Triangular source coding with causal side information," *Int. Symp. Information Theory*, Saint-Petersburg, Russia, July 31 - August 5, 2011.
92. **H. Asnani**, H.H. Permuter and T. Weissman, "To Feed or Not to Feed Back," *Int. Symp. Information Theory*, Saint-Petersburg, Russia, July 31 - August 5, 2011. **Finalist for best student authored paper award.**
93. T. Moon, T. Weissman and J.Y. Kim, "Discrete denoising of heterogeneous two-dimensional data," *Int. Symp. Information Theory*, Saint-Petersburg, Russia, July 31 - August 5, 2011.
94. **Y.K. Chia**, **H. Asnani** and T. Weissman, "Multi-terminal source coding with action dependent side information," *Int. Symp. Information Theory*, Saint-Petersburg, Russia, July 31 - August 5, 2011.
95. **H. Asnani** and T. Weissman, "On Real Time Coding with Limited Lookahead," *Proc. 49th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, September 2011.
96. **L. Zhao**, **Y.K. Chia** and T. Weissman, "Compression with Actions," *Proc. 49th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, September 2011.
97. Y. H. Kim, H. H. Permuter and T. Weissman, "Continuous-Time Directed Information and Its Role in Communication," *Proc. of IEEE Information Theory Workshop*, Paraty, Brazil, October 2011.
98. T. Weissman, "New Estimators of Directed Information", *Proc. 7th Annu. Workshop on Information Theory and its Applications* (ITA09), UCSD, San Diego, California, February 5-10, 2012 (invited).

99. **K. Venkat** and T. Weissman, "Some Old and New Relations between Information and Estimation," *Proc. 2012 International Zurich Seminar on Communications*, Zurich, Switzerland, February 29 – March 2, 2012 (invited).
100. **J. Jiao**, H. H. Permuter, L. Zhao, Y. H. Kim and T. Weissman, "Universal Estimation of Directed Information via Sequential Probability Assignments," *Int. Symp. Information Theory*, Cambridge, MA, July 1 - July 6, 2012.
101. T. Courtade and T. Weissman, "Multiterminal Source Coding under Logarithmic Loss," *Int. Symp. Information Theory*, Cambridge, MA, July 1 - July 6, 2012. **Best student authored paper award**.
102. **K. Venkat** and T. Weissman, "Pointwise Relations between Information and Estimation," *Int. Symp. Information Theory*, Cambridge, MA, July 1 - July 6, 2012. **Best student authored paper award**.
103. **A. No, K. Venkat** and T. Weissman, "Joint Source-Channel Coding of one Random Variable over the Poisson Channel," *Int. Symp. Information Theory*, Cambridge, MA, July 1 - July 6, 2012.
104. **Y. K. Chia**, R. Soundararajan and T. Weissman, "Estimation with a Helper who Knows the Interference," *Int. Symp. Information Theory*, Cambridge, MA, July 1 - July 6, 2012.
105. **V. Misra** and T. Weissman, "The Porosity of Additive Noise Sequences," *Int. Symp. Information Theory*, Cambridge, MA, July 1 - July 6, 2012.
106. Y. Steinberg and T. Weissman, "The Degraded Broadcast Channel with Action-Dependent States," *Int. Symp. Information Theory*, Cambridge, MA, July 1 - July 6, 2012.
107. **H. Asnani**, H. H. Permuter and T. Weissman, "Successive Refinement with Cribbing Decoders and its Channel Coding Duals," *Int. Symp. Information Theory*, Cambridge, MA, July 1 - July 6, 2012.
108. B. Chern, A. Manolakos, **A. No, I. Ochoa, K. Venkat** and T. Weissman, "Reference Based Genome Compression," *Proc. 2012 IEEE Inf. Th. workshop (ITW2012)*, Lausanne, Switzerland, September 3 - September 7, 2012.
109. I. Shomorony, S. Avestimehr, **H. Asnani** and T. Weissman, "Worst-Case Source for Distributed Compression with Quadratic Distortion," *Proc. 2012 IEEE Inf. Th. workshop (ITW2012)*, Lausanne, Switzerland, September 3 - September 7, 2012 (invited).
110. **K. Venkat**, T. Weissman, Y. Carmon and S. Shamai, "Lookahead, Estimation and Information in the Gaussian channel," *Proc. 50th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, October 2012.
111. **M. Chowdhury**, A. Goldsmith and T. Weissman, "The Per-User Number of Receive Antennas in Uncoded Non-Cooperating Transmissions can be Arbitrarily Small," *Proc. 50th Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, October 2012.

112. Y. Carmon, S. Shamai and T. Weissman, "Disproof of the Shamai-Laroia Conjecture", *Proc. 27th IEEE Conf. Electrical and Electronics Engineers* Eilat, Israel, November 14 – 17th, 2012 (invited).
113. A. Ingber, T. Courtade and T. Weissman, "Quadratic Similarity Queries on Compressed Data," *Proc. Data Compression Conference (DCC 2013)*, Snowbird, Utah March 20-22, 2013.
114. **A. No** and T. Weissman, "Minimax Filtering Regret via Relations Between Information and Estimation," *Int. Symp. Information Theory*, Istanbul, Turkey, July 7 - July 12, 2013.
115. K. Kittichokechai, Y.K. Chia, T. J. Oechtering, M. Skoglund and T. Weissman, "Secure Source Coding with a Public Helper," *Int. Symp. Information Theory*, Istanbul, Turkey, July 7 - July 12, 2013.
116. A. Ingber, T. Courtade and T. Weissman, "Compression for Exact Match Identification," *Int. Symp. Information Theory*, Istanbul, Turkey, July 7 - July 12, 2013.
117. **J. Jiao, K. Venkat** and T. Weissman, "Pointwise relations Between Information and Estimation in the Poisson Channel," *Int. Symp. Information Theory*, Istanbul, Turkey, July 7 - July 12, 2013.
118. **K. Venkat**, T. Weissman, Y. Carmon and S. Shamai, "The Role of Lookahead in Estimation under Gaussian Noise," *Int. Symp. Information Theory*, Istanbul, Turkey, July 7 - July 12, 2013.
119. **H. Asnani**, H. Permuter and T. Weissman, "Capacity of a POST Channel with and without Feedback," *Int. Symp. Information Theory*, Istanbul, Turkey, July 7 - July 12, 2013.
120. **H. Asnani**, I. Shomorony, S. Avestimehr and T. Weissman, "Network Compression: Worst-Case Analysis," *Int. Symp. Information Theory*, Istanbul, Turkey, July 7 - July 12, 2013.
121. **V. Misra** and T. Weissman, "Unsupervised Learning and Universal Communication," *Int. Symp. Information Theory*, Istanbul, Turkey, July 7 - July 12, 2013.
122. M. Chowdhury, A. Goldsmith and T. Weissman, "Reliable Uncoded Communication in the SIMO MAC via Low-Complexity Decoding," *Int. Symp. Information Theory*, Istanbul, Turkey, July 7 - July 12, 2013.
123. **H. Asnani**, I. Shomorony, S. Avestimehr and T. Weissman, "Operational Extremality of Gaussianity in Network Compression, Communication, and Coding," *Proc. 2013 IEEE Inf. Th. workshop (ITW2013)*, Seville, Spain, September 9 - September 13, 2013 (invited).
124. **I. Ochoa**, A. Ingber and T. Weissman, "Efficient Similarity Queries via Lossy Compression," *Proc. 51st Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, October 2 - October 4, 2013.
125. **A. No**, A. Ingber and T. Weissman, "Complexity and Rate-Distortion Tradeoff via Successive Refinement," *Proc. 51st Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, October 2 - October 4, 2013.

126. M. Chowdhury, A. Goldsmith and T. Weissman, "Reliable Uncoded Communication in the Underdetermined SIMO MAC," *Proc. 51st Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, October 2 - October 4, 2013.
127. A. Kipnis, A. Goldsmith, T. Weissman and Y. Eldar, "Distortion Rate Function of Sub-Nyquist Sampled Gaussian Sources Corrupted by Noise," *Proc. 51st Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, October 2 - October 4, 2013.
128. Y. Carmon, S. Shamai and T. Weissman, "OFDM vs. Single Carrier Modulation – an Achievable Rate Perspective," *Proc. 2014 International Zurich Seminar on Communications*, Zurich, Switzerland, February 26 – 28, 2014.
129. H. Permuter, **H. Asnani** and T. Weissman, "Capacity of Binary Symmetric POST Channels," *Proc. 2014 International Zurich Seminar on Communications*, Zurich, Switzerland, February 26 – 28, 2014 (invited).
130. T. Courtade, **J. Jiao** and T. Weissman, "On an Extremal Data Processing Inequality for long Markov Chains," *Proc. 2014 International Zurich Seminar on Communications*, Zurich, Switzerland, February 26 – 28, 2014 (invited).
131. A. Ingber, T. Courtade, **I. Ochoa** and T. Weissman, "Compression for Similarity Queries," *Proc. 2014 International Zurich Seminar on Communications*, Zurich, Switzerland, February 26 – 28, 2014 (invited).
132. **I. Ochoa**, A. Ingber and T. Weissman, "Compression Schemes for Similarity Queries," *Proc. Data Compression Conference (DCC 2014)*, Snowbird, Utah March 26-28, 2014.
133. **J. Jiao**, T. Courtade, **K. Venkat** and T. Weissman, "Justification of Logarithmic Loss via the Benefit of Side Information," Int. Symp. Information Theory, Honolulu, HI, USA, June 29 - July 4, 2014.
134. **J. Jiao**, T. Courtade, **K. Venkat** and T. Weissman, "Information Divergences and the Curious Case of the Binary Alphabet," Int. Symp. Information Theory, Honolulu, HI, USA, June 29 - July 4, 2014.
135. **J. Jiao**, **K. Venkat** and T. Weissman "Relations between Information and Estimation in Scalar Lévy Channels," Int. Symp. Information Theory, Honolulu, HI, USA, June 29 - July 4, 2014.
136. F. Steiner, S. Dempfle, A. Ingber and T. Weissman, "Compression for Quadratic Similarity Queries via Shape-Gain Quantizers," Int. Symp. Information Theory, Honolulu, HI, USA, June 29 - July 4, 2014.
137. **A. No**, A. Ingber and T. Weissman, "Strong Successive Refinability: Sufficient Conditions," Int. Symp. Information Theory, Honolulu, HI, USA, June 29 - July 4, 2014.
138. **A. No** and T. Weissman, "Rateless Lossy Compression via the Extremes," *Proc. 52nd Annu. Allerton Conf. Communication, Control, and Computing*, Monticello, IL, October 1 - October 3, 2014.
139. **I. Ochoa**, M. Hernaez and T. Weissman, "Aligned Genomic Data Compression via Improved Modeling," *Proc. GIW/ISCB-Asia 2014*, Tokyo, Japan December 15-17, 2014.

140. A. Ingber and T. Weissman, "Compression for Similarity Identification: Computing the Error Exponent," *Proc. Data Compression Conference (DCC 2015)*, Snowbird, Utah, April 7–9, 2015.
141. G. Malysa , M. Hernaez, M. Rao , K. Ganesan, **I. Ochoa** and T. Weissman, "QVZ: lossy compression of quality values that may improve genotyping," *RECOMB 2015*, Warsaw, Poland, April 12–15, 2015.
142. **J. Jiao, K. Venkat, Y. Han** and T. Weissman, "Maximum Likelihood Estimation of Information Measures," Int. Symp. Information Theory, Hong Kong, June 14 - 19, 2015.
143. **J. Jiao, K. Venkat, Y. Han** and T. Weissman, "Minimax Estimation of Information Measures," Int. Symp. Information Theory, Hong Kong, June 14 - 19, 2015.
144. **Y. Han, J. Jiao** and T. Weissman, "Adaptive Estimation of Shannon Entropy," Int. Symp. Information Theory, Hong Kong, June 14 - 19, 2015.
145. **Y. Han, J. Jiao** and T. Weissman, "Does Dirichlet Prior Smoothing Solve the Shannon Entropy Estimation Problem?," Int. Symp. Information Theory, Hong Kong, June 14 - 19, 2015.
146. **Y. Han, J. Jiao** and T. Weissman, "Minimax Estimation of Discrete Distributions," Int. Symp. Information Theory, Hong Kong, June 14 - 19, 2015.
147. **I. Ochoa**, M. Hernaez, R. Goldfeder, T. Weissman and E. Ashley, "Denoising of Quality Scores for Boosted Inference and Reduced Storage", *Proc. Data Compression Conference (DCC 2016)*, Snowbird, Utah, March 29–April 1, 2016.
148. M. Hernaez, **I. Ochoa** and T. Weissman, "A cluster-based approach to compression of Quality Scores", *Proc. Data Compression Conference (DCC 2016)*, Snowbird, Utah, March 29–April 1, 2016.
149. **A. No** and T. Weissman, "Universality of Logarithmic Loss in Lossy Compression," Int. Symp. Information Theory, Hong Kong, June 14 - 19, 2015.
150. D. Pavlichin and T. Weissman, "Chained Kullback-Leibler Divergences," Int. Symp. Information Theory, Barcelona, Spain, July 10 - 15, 2016.
151. **Y. Han, J. Jiao** and T. Weissman, "Minimax Estimation of the L_1 Distance," Int. Symp. Information Theory, Barcelona, Spain, July 10 - 15, 2016.
152. **K. Venkat, J. Jiao** and T. Weissman, "Mutual Information, Relative Entropy and Estimation Error in Semi-Martingale Channels," Int. Symp. Information Theory, Barcelona, Spain, July 10 - 15, 2016.
153. R. Xu, J. Chen, T. Weissman and J. Zhangand, "When is Noisy State Information at the Encoder as Useless as No Information or as Good as Noise-Free State?," Int. Symp. Information Theory, Barcelona, Spain, July 10 - 15, 2016.
154. **K. S. Tatwawadi, I. Ochoa**, M. Hernaez and T. Weissman, "Fast retrieval from compressed collections of genomic variants," *Proc. of 15th European Conference on Computational Biology (ECCB 2016)*, The Hague, Netherlands, September 3-7, 2016.

155. **I. Ochoa, A. No**, M. Hernaez and T. Weissman, “CROMqs: rateless lossy compression of quality scores,” *Proc. 2016 IEEE Inf. Th. workshop (ITW2016)*, Cambridge, United Kingdom, September 11-14, 2016.
156. **Y. Han, J. Jiao** and T. Weissman, “Minimax Rate-Optimal Estimation of KL Divergence between Discrete Distributions,” International Symposium on Information Theory and its Applications (ISITA2016), Monterey, CA, October 30 - November 2, 2016. **Best student authored paper award.**
157. R. Long, M. Hernaez, **I. Ochoa** and T. Weissman, “GeneComp, a New Reference-Based Compressor for SAM Files”, *Proc. Data Compression Conference (DCC 2017)*, Snowbird, Utah, April 4–7, 2017.
158. D. S. Pavlichin, A. Ingber and T. Weissman, “Compressing Tabular Data via Pairwise Dependencies”, *Proc. Data Compression Conference (DCC 2017)*, Snowbird, Utah, April 4–7, 2017.
159. **Y. Han, J. Jiao** and T. Weissman, “Dependence Measures Bounding the Exploration Bias for General Measurements,” Int. Symp. Information Theory, Aachen, Germany, June 25 - 30, 2017.
160. **K. Tatwawadi, J. Jiao** and T. Weissman, “Minimax redundancy for Markov chains with large state space,” Int. Symp. Information Theory, Vail, Colorado, USA, June 17-22, 2018.
161. **K. Tatwawadi, S.S. Bidokhti** and T. Weissman, “On Universal Compression with Constant Random Access,” Int. Symp. Information Theory, Vail, Colorado, USA, June 17-22, 2018.
162. **Y. Han**, P. Mukherjee, A. Ozgur and T. Weissman, “Distributed Statistical Estimation of High-Dimensional and Nonparametric Distributions,” Int. Symp. Information Theory, Vail, Colorado, USA, June 17-22, 2018.
163. **Y. Han, J. Jiao** and T. Weissman, “Local moment matching: A unified methodology for symmetric functional estimation and distribution estimation under Wasserstein distance,” Proceedings of Computational Learning Theory (COLT) conference, Stockholm, Sweden, July 6–9, 2018.
164. **Y. Han**, A. Ozgur and T. Weissman, “Geometric Lower Bounds for Distributed Parameter Estimation under Communication Constraints,” Proceedings of Computational Learning Theory (COLT) conference, Stockholm, Sweden, July 6–9, 2018.
165. **Y. Han, J. Jiao**, C. Lee, T. Weissman, Y. Wu and T. Yu, “Entropy Rate Estimation for Markov Chains with Large State Space”, NeurIPS, Montral, Canada, December 2018.
166. A. Bhowm, S. Mukherjee, S. Yang, **S. Chandak, I. Fischer-Hwang, K. Tatwawadi** and T. Weissman, “Humans are still the best lossy image compressors”, *Proc. Data Compression Conference (DCC 2019)*, Snowbird, Utah, March 26–29, 2019.
167. **S. Chandak, K. Tatwawadi**, B. Lau, **J. Mardia**, M. Kubit, J. Neu, P. Griffin, M. Wootters, T. Weissman and H. Ji, “Improved read/write cost tradeoff in DNA-based data storage using LDPC codes”, *Proc. 57th Annu. Allerton Conf. Communication, Control, and Computing*, pp. 147-156, Monticello, IL, October 2 - October 4, 2019.

168. K. Choi, **K. Tatwawadi**, S. Ermon and T. Weissman, “Neural Joint-Source Channel Coding”, Thirty-sixth International Conference on Machine Learning (ICML), June 2019.
169. **Chandak, S., Tatwawadi, K.**, Wen, C., Wang, L., Aparicio, J., and Weissman, T. (2019). “LFZip: Lossy compression of multivariate floating-point time series data via improved prediction”, Data Compression Conference (DCC), March 2020.
170. **Chandak, S.**, Neu, J., **Tatwawadi, K.**, Mardia, J., Lau, B., Kubit, M., Hulett, R., Griffin, P., Wootters, M., Weissman, T. and Ji, H., 2019. “Overcoming high nanopore basecaller error rates for DNA storage via basecaller-decoder integration and convolutional codes”, 45th International Conference on Acoustics, Speech, and Signal Processing (ICASSP), May 2020.
171. R. Prabhakar, R. Liang, H. Nguyen, C. Chiu, **K. Tatwawadi, S. Chandak** and T. Weissman, “Reducing latency and bandwidth for video streaming using keypoint extraction and digital puppetry”, *Proc. Data Compression Conference (DCC 2021)*, Snowbird, Utah, March, 2021.
172. **Y. Han, K. Tatwawadi**, Z. Zhou, G. Kurri, V. Prabhakaran and T. Weissman, “Optimal Communication Rates and Combinatorial Properties for Distributed Simulation”, *International Symposium on Information Theory, July 2021*.
173. **W. Zhang**, B. Kitts, **Y. Han**, Z. Zhou, T. Mao, H. He, S. Pan, A. Flores, S. Gultekin and T. Weissman, “MEOW: A Space-Efficient Non-Parametric Bid Shading Algorithm”, in research track of the 27th SIGKDD Conference on Knowledge Discovery and Data Mining, August 14 - 18, 2021, Singapore.

Accepted:

- 1.

Submitted (under review)⁷

- 1.

Book Chapters

Published:

- E. Ordentlich and T. Weissman, “Bounds on the Entropy Rate of Binary Hidden Markov Processes,” in *Entropy of Hidden Markov Processes and Connections to Dynamical Systems*, Cambridge University Press, B. Marcus, K. Petersen and T. Weissman (eds.), July 2011, pp. 117–171.
- **H. Asnani, K. Venkat** and T. Weissman, “Relations between Information and Estimation in the presence of Feedback,” in *Information and Control in Networks*, Springer, G. Como, B. Bernhardsson and A. Rantzer (eds.), January 2014, pp. 157–175.

⁷Manuscripts available upon request.

Books

Published:

- B. Marcus, K. Petersen and T. Weissman (eds.) *Entropy of Hidden Markov Processes and Connections to Dynamical Systems*, Cambridge University Press, July 2011.

In Preparation:

- T. Weissman, *A Crash Course in Information Theory*, Springer.
- T. Weissman, *A Course in Statistical Signal Processing*, Springer.

Research Reports and Other Publications⁸

1. T. Weissman and N. Merhav, “Universal prediction of individual binary sequences in the presence of noise,” *Technion – I.I.T.*, CC Pub. no. 293, EE Pub. no. 1224, October 1999.
2. T. Weissman and N. Merhav, “Tradeoffs between the excess–code-length exponent and the excess–distortion exponent in lossy source coding,” Technical Report, CCIT Pub. no. 341, EE Pub. no. 1275, Technion – I.I.T., April 2001.
3. T. Weissman and N. Merhav, “On Competitive Prediction and its Relation to Rate-Distortion Theory and to Channel Capacity Theory,” *Technion – I.I.T.*, CC Pub. no. 372, EE Pub. no. 1309, February 2002.
4. T. Weissman, “Universally Attainable Error-Exponents for Rate-Constrained Denoising of Noisy Sources,” HP Laboratories Technical Report, HPL-2002-214, August 2002.
5. T. Weissman, E. Ordentlich, G. Seroussi, S. Verdú, and M. Weinberger, “Inequalities for the L_1 Deviation of the Empirical Distribution,” HP Laboratories Technical Report, HPL-2003-97R1, June 2003.
6. **G. Gemelos** and T. Weissman, “On the Entropy Rate of Pattern Sequences,” HP Laboratories Technical Report, HPL-2004-159, September 2004.
7. T. Weissman, “Not all universal codes are pointwise universal”, unpublished manuscript available upon request and at
<http://www.stanford.edu/~tsachy/papers.html>
8. S. Verdú and T. Weissman “2006 Kailath Lecture and Colloquia”, Newsletter article in the IEEE Information Theory Society Newsletter, Vol. 56, No. 4, December 2006.
9. D. Pavlichin and T. Weissman, “The Quest To Save Genomics,” *IEEE Spectrum*, September 2018.
10. **I. Hwang, S. Chandak, K. Tatwawadi** and T. Weissman, “Forget JPEG, How Would a Person Compress a Picture?,” *IEEE Spectrum*, October 2021.

⁸Only those containing material not covered by the journal and/or conference publications.

Patents (Inventor or Co-Inventor)

Granted U.S. and E.P.O. Patents

1. "Method for correcting noise errors in a digital signal", Patent US7047472. Issued: 05/16/2006
2. "Method and system for determining an optimal or near optimal set of contexts by constructing a multi-directional context tree", Patent US7123172, Issued: 10/17/2006
3. "Discrete universal denoising with reliability information", Patent US7269781, Issued: 09/11/2007
4. "Context-based denoiser that simultaneously updates probabilities for multiple contexts", Patent US7271749, Issued: 09/18/2007
5. "Denoising video", Patent US7420487. Issued: 09/02/2008
6. "Enhanced denoising system utilizing incremental parsing", Patent US7433427. Issued: 10/07/2008
7. "Method and system for optimizing denoising parameters using compressibility", Patent US7436969. Issued: 10/14/2008
8. "Discrete universal denoising with error correction coding", Patent EP1766832, Issued: 12/10/2008
9. "Methods for compression using a denoiser", Patent US7474793. Issued: 01/06/2009
10. "Context identification using a denoised signal", Patent US7498961, Issued: 03/03/2009
11. "Method and system for producing variable length context models", Patent US7624009. Issued: 11/24/2009.
12. "Denoising and error correction for finite input general output channel", Patent US200404580. Issued: 5/10/2012.
13. "Universal lossy compression methods", Patent US 8,320,687. Issued 11/27/2012.

Pending

1. "Enhanced denoising system", U.S. Application US20050163267.
2. "Discrete denoising using blended counts", U.S. Application US20060045218.
3. "Method and system for denoising noisy signals", PCT Application WO2009017698. Patent reference 700207080US01.
4. "Method for lossy compression of analogue data via Markov chain Monte Carlo", Provisional patent application number 61/260436.
5. S. Chandak, K. Tatwawadi, I. Ochoa, M. Hernaez and T. Weissman. Systems and Methods for Compressing Genetic Sequencing Data and Uses Thereof, Patent application filed.
6. Wen, L. Wang, J. Aparicio, S. Chandak, K. Tatwawadi and T. Weissman. Embedded Deep Compression for Time Series Data, Patent application filed.
7. HoJoon Lee, Hanlee P. Ji, Tsachy Weissman and Dmitri Pavlichin Methods and Systems for Improved K-mer Storage and Retrieval, Patent application filed.