David N.C. Tse
Curriculum Vitae

A. Academic History:

- Ph.D. (1994) in electrical engineering, Massachusetts Institute of Technology, Cambridge, MA.
- M.S. (1992) in electrical engineering, Massachusetts Institute of Technology, Cambridge, MA.
- B.A.Sc. (1989) in systems design engineering, University of Waterloo, Canada.

Scholarships and Honors:

- Canadian Natural Science and Engineering Research Council 1967 Graduate Fellowship (1989-1993).
- University of Waterloo Alumni Gold Medal for top graduate in engineering school (1989).

B. Employment History:

- Thomas Kailath and Guanghan Xu Professor, School of Engineering, Stanford University, June 2017 - present.
- Professor, Department of Electrical Engineering, Stanford University, March, 2014 - present.
- Professor, Department of Electrical Engineering and Computer Sciences, University of California at Berkeley, July, 2002 - February, 2014.
- Associate Professor, Department of Electrical Engineering and Computer Sciences, University of California at Berkeley, July, 2000 - June 2002.
- Assistant Professor, Department of Electrical Engineering and Computer Sciences, University of California at Berkeley, Nov. 1995 - June 2000.
- Systems engineer, Qualcomm Inc., San Diego, Jan.-May, 1999.
- Postdoctoral member of technical staff, A.T. & T. Bell. Laboratories, Oct. 1994- Oct. 1995.

C. Public and Professional Services:

- Academic Advisory Board, Institute for Data, Systems and Society, MIT, 2018 to present.
- Member, Claude E. Shannon Award Committee, Information Theory Society, 2017 to present.
- Member, visiting committee, Faculty of Engineering, Chinese University of Hong Kong, 2017.
- Chair, IEEE Koji Kobayashi Computers and Communications Award committee, 2016-17.
- General co-chair, IEEE International Symposium on Information Theory, 2015.
- Co-chair, Information theory program, Simons Institute, Berkeley, Spring 2015.
- Technical program co-chair, IEEE Smart Grid Comm, 2013.
- Session co-organizer, NAE Frontiers of Engineering meeting, 2013.
- Member, Board of Advisors, ShanghaiTech University, Shanghai, China.
- Member, visiting committee, Faculty of Engineering, Chinese University of Hong Kong, 2013.
- Member, Chair Professor Group in Wireless Communication, Tsinghua University, Beijing, China, 2009-2012.

- Board of Governors, IEEE Information Theory Society, 2003 to 2008, 2010 - 2013.
- Technical program committee co-chair, IEEE International Symposium on Information Theory, 2004.
- Associate Editor, IEEE Transactions on Information Theory, 2001-2003.
- Program committee member: 1999 and 2000 INFOCOM conferences, 2000, 2001,2002, 2003, 2008 International Symposia on Information Theory.
- Guest editor: IEEE Transactions on Information Theory special issue on Multiscale Signal Analysis and its Applications, April 1999; *Automatica* special issue on Control Methods for Communication Networks, Dec. 1999.

D. Post-Degree Awards and Honors:

- 2019 IEEE Richard W. Hamming Medal.
- Member, U.S. National Academy of Engineering, 2018 to present.
- 2017 Claude E. Shannon Award, IEEE Information Theory Society.
- Fellow, IEEE, 2009 to present.
- 2015 IEEE Communication and Information Theory Societies' Joint Paper Award (for [J27]).
- 2013 IEEE Communications and Information Theory Societies' Joint Paper Award (for [J37]).
- 2013 Stephen O. Rice Prize in the Field of Communications Theory (for [J36]).
- 2012 Gilbreth Lectureship from the National Academy of Engineering.
- IEEE Information Theory Society Distinguished Lecturer, 2011 - 2012.
- 2012 Signal Processing Society Best Paper Award (for [J50]).
- 2012 EURASIP Best Paper Award (for [J44]).
- 2009 Frederick Emmons Terman Award from the American Society for Engineering Education.
- 2008 Outstanding Teaching Award, Department of Electrical Engineering and Computer Sciences, U.C. Berkeley
- 2003 IEEE Information Theory Society Paper Award (for [J71]).
- 2001 IEEE Communications and Information Theory Societies' Joint Paper Award (for [J84]).
- Best Paper Awards in 1998 and 2001 IEEE INFOCOM conferences (for [C135] and [C114]).
- 2000 Erlang Prize from the INFORMS Applied Probability Society for researchers under the age of 35.
- 1998 Early Faculty CAREER Award from National Science Foundation
- Plenary speaker for international conferences and workshops:
  - AI Summit, Hong Kong, 2018.
  - Information Theory Workshop, Guangzhou, 2018.
  - SPCOM, India Institute of Science, Bangalore, India, 2016.
  - International Symposium on Turbo Codes and Iterative Information Processing, 2014.
  - Iranian Workshop on Communications and Information Theory, Tehran, 2014
  - Information Theory and Applications Workshop, San Diego, 2014
  - Allerton Conference, 2012
  - International Symposium on Wireless Communication Systems, 2012
  - Canadian Information Theory Workshop, 2011

- IEEE Workshop on Signal Processing Advances for Wireless Communications (SPAWC) 2003, 2008 and 2011.
- IEEE Information Theory Workshop, Cairo, 2010
- IEEE International Symposium on Information Theory (ISIT) 2009
- IEEE Communication Theory Workshop (CTW) 2009
- Conference on Information Sciences and Systems (CISS) 2008
- ACM International Conference on Mobile Computing and Networking (MobiCom) 2007
- IEEE International Conference on Acoustics, Speech and Signal Processing 2006
- Workshop on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt), 2003

E. Publications:

Total number of citations (according to Google scholar, as of March 16, 2018): 61,000.

Five most cited publications: [J62] (12909 citations), [B1] (9724), [J67] (4533), [J68] (3548),[J69] (3116).

In most of the publications below where a student is involved, the student or non-faculty researcher responsible for the research appears first in the author ordering, and the faculty appears last. In a few of the publications which involve multiple students and/or multiple faculty where the student(s) and the faculty have equal contribution, the ordering is alphabetical.

Patents

[P1] Systems, apparatus and methods for enhancing overall throughput in wireless communication based on delayed channel gain information, U.S. Patent #8743995, June 3, 2014.

[P2] "Systems, apparatus and methods for enhancing overall throughput in wireless communication based on delayed channel gain information", filed, December 20, 2011.

[P3] "Methods and apparatus for transmitting information between a basestation and multiple mobile stations " , U.S. Patent #6694147, February 17, 2004.

[P4] "Transmitter directed, multiple receiver system using path diversity to equitably maximize throughput", U.S. Patent #6449490, September 10, 2002.

[P5] "Renegotiated bit-rate service system and method", U.S. Patent #5604731, Feb. 18, 1997.

[P6] "Data segmentation within a renegotiated bit-rate service transmission system", U.S. Patent #5559798, Sept. 24, 1996.

Refereed Journal Publications

[J1] Aslan Tchamkerten, Razvan Cristescu, Ehsan Ebrahimzadeh, David Tse, Maggie Engler, "Somatic Mutations Render Human Exome and Pathogen DNA more Similar",to appear in PLOS ONE.

[J2] **Jesse M Zhang**, Jue Fan, H Christina Fan, David Rosenfeld, N Tse David, "An interpretable framework for clustering single-cell RNA-Seq datasets" , BMC bioinformatics, Vol. 19, Issue. 93, pp. 93, Dec. 2018.

[J3] Changho Suh, Jaewoong Cho, David Tse, "Two-way interference channel capacity: How to have the cake and eat it too", IEEE Transactions on Information Theory, Vol 64, Issue, 6, pp. 4259- 4281, June 2018.

[J4] **Sudeep Kamath**, Venkatachalam Anantharam, David Tse, Chih-Chun Wang, "The two-unicast problem", IEEE Transactions on Information Theory, Vol. 64, Issue 5, pp. 3865-3882, May 2018.

[J5] Antonio A Ginart, Joseph Hui, Kaiyuan Zhu, Ibrahim Numanagić, Thomas A Courtade, S Cenk Sahinalp, N Tse David, "Optimal compressed representation of high throughput sequence data via light assembly", Nature communications, Vol. 9, Issue. 1, pp. 566. Feb. 2018.

[J6] I. Shomorony, **G.M. Kamath**, F. Xia, T. Courtade and D. Tse, HINGE: Long-Read Assembly Achieves Optimal Repeat Resolution, Genome Research, Vol 27(5), May 2017.

[J7] A Bhaskar, A Javanmard, TA Courtade, D Tse, Novel probabilistic models of spatial genetic ancestry with applications to stratification correction in genome-wide association studies, Bioinformatics, btw720, 2016.

[J8] I Shomorony, T Courtade, D Tse. Fundamental Limits of Genome Assembly under an Adversarial Error Model, IEEE Transactions on Molecular, Biological and Multi-Scale Communications, Vol 2(2), 2016.

[J9] Ntranos V, **Kamath GM**, **Zhang JM**, Pachter L, Tse, D. Fast and accurate single-cell RNA-Seq analysis by clustering of transcript-compatibility counts. Genome biology. 2016 May 26;17(1):1.

[J10] I. Shomorony, S. H. Kim, T. A. Courtade and D. Tse, Information-optimal genome assembly via sparse read-overlap graphs, Bioinformatics. 2016 Sep 1;32(17):i494-i502.

[J11] **KK Lam,** K LaButti, A Khalak, D Tse, FinisherSC: a repeat-aware tool for upgrading de novo assembly using long reads, Bioinformatics vol. 31 (19), pp. 3207-3209

[J12] Chen K, Li B, Shen H, Jin J, Tse D. Reduce the Complexity of List Decoding of Polar Codes by Tree-Pruning. IEEE Communications Letters. 2016 Feb;20(2):204-7.

[J13] **B. Zhang**, R. Rajagopal, D. Tse, Network Risk Limiting Dispatch: Optimal Control and Price of Uncertainty, IEEE Transactions on Automatic Control, vol 59(9), pp. 2442-2457, September,2014.

[J14] **G. Bresler**, D. Cartwright, D. Tse, Feasibility of Interference Alignment for the MIMO Interference Channel, IEEE Transactions on Information Theory, Vol. 60(9), pp. 5573- 5587, September 2014.

[J15] **K.K. Lam**, A. Khalak and D. Tse, Near-optimal Assembly for Shotgun Sequencing with Noisy Reads, BMC Bio- informatics, 2014.

[J16] **B. Zhang**, A. Lam, A. Dominguez-Garcia, D. Tse, An Optimal and Distributed Method for Voltage Regulation in Power Distribution Systems,IEEE Transactions on Power Systems, vol 29, p.1-13, 2014.

[J17] Kosut, O.; Tong, L.; D. Tse, "Polytope Codes Against Adversaries in Networks," Information Theory, IEEE Transactions on , vol.60, no.6, pp.3308,3344, June 2014

[J18] Lavaei, J.; D. Tse; **B. Zhang**, "Geometry of Power Flows and Optimization in Distribution Networks," Power Systems, IEEE Transactions on , vol.29, no.2, pp.572,583, March 2014

[J19] Motahari, A.S.; **Bresler, G**.; D. Tse, "Information Theory of DNA Shotgun Sequencing," Information Theory, IEEE Transactions on , vol.59, no.10, pp.6273,6289, Oct. 2013.

[J20] Nagpal, V.; **Wang, I.H.**; Jorgovanovic, M.; D. Tse; Nikolic, B., "Coding and system design for quantize-map-and-forward relaying," Selected Areas in Communications, IEEE Journal on , vol.31, no.8, pp.1423,1435, Aug. 2013

[J21] **G. Bresler**, M. Bresler, D. Tse, "Optimal assembly for high throughput shotgun sequencing", BMC Bioinformatics 2013, 14(Suppl 5).

[J22] **B. Zhang**; Tse, D., "Geometry of injection regions of power networks," Power Systems, IEEE Transactions on , vol.28, no.2, pp.788,797, May 2013

[J23] V. Chandar, A. Tchamkerten, D. Tse, "Asynchronous Capacity per Unit Cost," *IEEE Transactions on Information Theory* , vol.59, no.3, pp.1213-1226, March 2013

[J24] A. Ozgur, O. Leveque, D. Tse, "Spatial Degrees of Freedom of Large Distributed MIMO Systems and Wireless Ad Hoc Networks," IEEE Journal on Selected Areas in Communications, vol.31, no.2, pp.202-214, February 2013

[J25] D. Tse and R.D. Yates, "Fading Broadcast Channels With State Information at the Receivers," *IEEE Transactions on Information Theory* , vol.58, no.6, pp.3453-3471, June 2012

[J26] Bin Li, Hui Shen, D. Tse, "An Adaptive Successive Cancellation List Decoder for Polar Codes with Cyclic Redundancy Check," IEEE Communications Letters, vol.16, no.12, pp.2044-2047, December 2012

[J27] M.A. Maddah-Ali and D. Tse, "Completely Stale Transmitter Channel State Information is Still Very Useful," *IEEE Transactions on Information Theory* , vol.58, no.7, pp.4418-4431, July 2012

[J28] P. Minero, M. Franceschetti, D. Tse: "Random Access: An Information-Theoretic Perspective",*IEEE Transactions on Information Theory* 58(2): 909-930 (2012)

[J29] D. Shah, D. Tse, John Tsitsiklis, "Hardness of low delay network scheduling", *IEEE Transactions on Information Theory*, Vol. 57, No. 12, December 2011, pp. 7810-7818.

[J30] A.S.Y. Poon and D. Tse, "Degree-of-Freedom Gain From Using Polarimetric Antenna Elements," *IEEE Transactions on Information Theory* , vol.57, no.9, pp.5695-5709, Sept. 2011

[J31] **L. Grokop**, D. Tse, Roy D. Yates," Interference Alignment for Line-of-Sight Channels",*IEEE Transactions on Information Theory* 57(9), 2011, pp. 5820-5839.

[J32] Francois Bacelli, Abbas El Gamal, D. Tse, "Interference Networks with Point-to-point Codes", *IEEE Transactions on Information Theory*, vol. 57(5), May 2011.

[J33] Soheil Mohajer, Suhas N. Diggavi, Christina Fragouli, D. Tse, "Approximate Capacity of Gaussian Interference-Relay Networks with Weak Cross Links", *IEEE Transactions on Information Theory*, vol. 57(5), May 2011.

[J34] **I-Hsiang Wang**, D. Tse, "Interference Mitigation Through Limited Receiver Cooperation", *IEEE Transactions on Information Theory*, vol. 57(5), May 2011.

[J35] **I-Hsiang Wang**, D. Tse, "Interference Mitigation through Limited Transmitter Cooperation", *IEEE Transactions on Information Theory*, vol. 57(5), May 2011.

[J36] **Changho Suh**, Minnie Ho, D.Tse, "Downlink Interference Alignment", *IEEE Transactions on Communications*, vol. 59, no. 9, Sept. 2011.

[J37] **S. Avestimehr**, S. Diggavi and D. Tse, "Wireless network information flow: a deterministic approach" ,*IEEE Transactions on Information Theory*, vol. 57(4), April, 2011.

[J38] Randall A. Berry, D. Tse, "Shannon Meets Nash on the Interference Channel", *IEEE Transactions on Information Theory*, vol. 57(5), May 2011.

[J39] **Changho Suh**, D. Tse, "Feedback Capacity of the Gaussian Interference Channel to within 2 Bits", *IEEE Transactions on Information Theory*, vol. 57(5), May 2011. (Conference version of this paper won the Best Student Paper Award.)

[J40] **G. Bresler**, A. Parekh and D. Tse, "Approximate Capacity of Many-to-One and One-to-Many Interference Channels", *IEEE Transactions on Information Theory*, vol. 56(9), Sept. 2010, pp. 4566-4592.

[J41] **L. Grokop**, D. Tse, "Spectrum Sharing Between Wireless Networks", *IEEE/ACM Transactions on Networking* , 18(5), 2010, pp. 1401-1412.

[J42] A. Ozgur, R. Johari, D. Tse and O. Leveque, "Information Theoretic Operating Regimes for Large Wireless Networks", *IEEE Transactions on Information Theory*, vol. 56(1), Jan. 2010, pp. 427-437.

[J43] **L. Grokop** and D. Tse, "Diversity-Multiplexing Tradeoff of ISI Channels", *IEEE Transactions on Information Theory*, VOL. 55(1), Jan. 2009, pp. 109-135.

[J44] S. Jing, D. Tse, J. Soriaga, J. Hou, J. Smee, and R. Padovani, " Multicell Downlink Capacity with Coordinated Processing," *Journal on Wireless Communications and Networking*, 2008.

[J45] **R. Etkin**, D. Tse and H. Wang, "Gaussian Interference Channel Capacity to Within One Bit", *IEEE Transactions on Information Theory*, vol 54(12), Dec. 2008, pp. 5534 - 5562.

[J46] **Ye Xia** and D. Tse, "On the Large Deviations of Resequencing Queue Size: 2-M/M/1 Case" . *IEEE Transactions on Information Theory*, vol. 54, no. 9, September 2008. Page 4107-4118.

[J47] **G. Bresler** and D. Tse, "The Two-User Gaussian Interference Channel: A Deterministic View", vol 19, *European Transactions in Telecommunications*, pp. 333-354, April 2008.

[J48] A. Ozgur, O. Leveque and D. Tse, "Hierarchical Cooperation Achieves Optimal Capacity Scaling in Ad Hoc Networks", *IEEE Transactions on Information Theory*, vol 53, no. 10, pp. 3549 - 3572, October 2007.

[J49] J. Tsao, D. Porrat and D. Tse, "Prediction and Modeling for the Time-Evolving Ultra-Wideband Channel" *IEEE Journal of Selected Topics in Signal Processing*, Volume 1, Issue 3, pp. 340-356, Oct. 2007.

[J50] R. Wilson, D. Tse and R. Scholtz,"Channel Identification: Secret Sharing using Reciprocity in UWB Channels", *IEEE Transactions on Information Forensics and Security*, pp. 364-375, September 2007.

[J51] A. **S. Avestimehr** and D. Tse, "Outage capacity of the fading relay channel in the low-SNR regime," *IEEE Trans. Information Theory*, vol. 53, no. 4, pp. 1401-1415, April 2007.

[J52] **R. Etkin**, A. Parekh, and D. Tse, "Spectrum sharing for unlicensed bands," *IEEE J. Selected Areas in Communications*, vol. 25, no. 3, pp. 517-528, April 2007.

[J53] L. Zheng, D. Tse, and M. Medard, "Channel coherence in the low-SNR regime," *IEEE Trans. Information Theory*, vol. 53, no. 3, pp. 976-997, March 2007.

[J54] M. Franceschetti, O. Dousse, D. Tse, and P. Thiran, "Closing the gap in the capacity of wireless networks via percolation theory," *IEEE Trans. Information Theory*, vol. 53, no. 3, pp. 1009-1018, March 2007.

[J55] D. Porrat, D. Tse, and S. Nacu, "Channel uncertainty in ultra-wideband communication systems," IEEE Trans. Information Theory, vol. 53, no. 1, pp. 194-208, Jan. 2007.

[J56] **Y. Xia** and D. Tse, "Inference of link delay in communication networks," IEEE J. Selected Areas in Communications, vol. 24, no. 12, pp. 2235-2248, Dec. 2006.

[J57] M. Chen and D. Tse, "An upper bound on the convergence rate of uplink power control in DS-CDMA systems," IEEE Communications Letters, vol. 10, no. 4, pp. 231-233, April 2006.

[J58] **A. Poon**, D. Tse and R. Brodersen, "Impact of Scattering on the Capacity, Diversity and Propagation Range of Multiple Antenna Channels", *IEEE Transactions on Information Theory*, vol. 52(2), March 2006.

[J59] **R. Etkin** and D. Tse, " Degrees of Freedom in Underspread MIMO Fading Channels", *IEEE Transactions on Information Theory*, vol 52(3) March 2006.

[J60] S. Diggavi, M. Grossglauser and D. Tse, " Even One-Dimensional Mobility Increases Adhoc Wireless Capacity" , *IEEE Transactions on Information Theory*, vol 51(11), Nov. 2005.

[J61] **A. Poon**, R. Brodersen and D. Tse, "Degrees of Freedom in Multiple Antenna Channels: A Signal Space Approach", *IEEE Transactions on Information Theory*, vol.51, no.2, February 2005, pp. 523-536.

[J62] N. Laneman, D. Tse and G. Wornell, " Cooperative Diversity in Wireless Networks: Efficient Protocols and Outage Behavior", *IEEE Transactions on Information Theory*, vol.50, no. 11, November 2004.

[J63] D. Tse, P. Viswanath and L. Zheng "Diversity-Multiplexing Tradeoff in Multiple Access Channels", *IEEE Transactions on Information Theory*, vol.50, no.9, Sept. 2004, pp.1859-74.

[J64] **A. Poon**, D. Tse and R. Brodersen, "An Adaptive Multi-antenna Transceiver for Slowly Flat Fading Channels", *IEEE Transactions on Communications*, vol.51, no.11, Nov. 2003, pp.1820-7.

[J65] M. Grossglauser and D. Tse, "A Time-Scale Decomposition Approach to Measurement-Based Admission Control", *IEEE/ACM Transactions on Networking*, vol.11, no.4, Aug. 2003, pp.550-63.

[J66] P. Viswanath and D. Tse, " Sum Capacity of the Multiple Antenna Gaussian Broadcast Channel and Uplink-Downlink Duality" , *IEEE Transactions on Information Theory*, vol 49(8), August, 2003, pp. 1912-1921.

[J67] **L. Zheng** and D. Tse, "Diversity and Multiplexing: A Fundamental Tradeoff in Multiple Antenna Channels" *IEEE Transactions on Information Theory*, vol. 49(5), May 2003.

[J68] M. Grossglauser and D. Tse, "Mobility Increases the Capacity of Adhoc Wireless Networks", *IEEE/ACM Transactions on Networking*, August 2002.

[J69] P. Viswanath, D. Tse and R. Laroia, "Opportunistic Beamforming using Dumb Antennas", *IEEE Transactions on Information Theory*, vol. 48(6), June, 2002.

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[J71] **L. Zheng** and D. Tse, "Communicating on the Grassmann Manifold: A Geometric Approach to Noncoherent Multi-antenna Channels", *IEEE Transactions on Information Theory* , vol. 48(2), February 2002, pp. 359-383.

[J72] D. Starobinski , Tse D. Probabilistic methods for Web caching. Performance Evaluation, vol.46, no.2-3, Oct. 2001, pp.125-37.

[J73] S. Hanly and D. Tse, "Resource Pooling and Effective Bandwidths in CDMA Systems with Multiuser Receivers and Spatial Diversity", *IEEE Transactions on Information Theory* , vol. 47(4), May 2001, pp. 1328-1351.

[J74] J. Zhang, E. Chong and D. Tse, "Output MAI Distributions of Linear MMSE Multiuser Receivers in CDMA Systems", *IEEE Transactions on Information Theory*, vol. 47(3), March 2001, pp. 1128-1144.

[J75] **P. Viswanath**, D. Tse and V. Anantharam, "Asymptotically Optimal Waterfilling in Vector Multiple Access Channels", *IEEE Transactions on Information Theory*, vol. 47(1), January 2001, pp. 241-267.

[J76] D. Tse and S. Verdu, "Optimum Asymptotic Multiuser Efficiency for Randomly Spread CDMA" , *IEEE Transactions on Information Theory*, vol. 46(7), November 2000, pp. 2718-2722.

[J77] J.S. Evans and D. Tse, "Large System Performance of Linear Multiuser Receivers in Multipath Fading Channels", *IEEE Transactions on Information Theory*, vol. 46(6), Sept 2000, pp. 2059-2078.

[J78] Kiran and D. Tse, "Effective Bandwidths and Effective Interference for Linear Multiuser Receivers in Asynchronous CDMA Systems", *IEEE Transactions on Information Theory*, vol 46(4), July 2000, pp. 1426-1447.

[J79] E. Telatar and D. Tse, "Capacity and Mutual Information of Wideband Multipath Fading Channels", *IEEE Transactions on Information Theory* , vol 46(4), July 2000, pp. 1384-1400.

[J80] D. Tse and O. Zeitouni, "Linear Multiuser Receivers in Random Environments", *IEEE Transactions on Information Theory* , vol 46(1), Jan. , 2000, pp. 171-188.

[J81] S. Hanly and D. Tse, "Power Control and Capacity of Spread-Spectrum Wireless Networks", *Automatica*, vol.35, (no.12), Dec. 1999. p.1987-2012.

[J82] M. Grossglauser and D. Tse, "A Framework for Robust Measurement-Based Admission Control", *IEEE/ACM Transactions on Networking*, v. 7, No. 3, June 1999, pp. 293-309.

[J83] **P. Viswanath**, V. Anantharam and D. Tse, "Optimal Sequences, Power Control and Capacity of Synchronous CDMA Systems with Linear MMSE Multiuser Receivers", *IEEE Transactions on Information Theory*, v. 45(6), Sept., 1999, pp. 1968-1983.

[J84] D. Tse and S. Hanly, "Linear Multiuser Receivers: Effective Interference, Effective Bandwidth and User Capacity", *IEEE Transactions on Information Theory*, v.45, No. 2, Mar. 1999, pp. 641-657.

[J85] D. Tse and S. Hanly, "Multi-Access Fading Channels: Part I: Polymatroid Structure, Optimal Resource Allocation and Throughput Capacities", *IEEE Transactions on Information Theory*, v. 44, No. 7, Nov., 1998, pp. 2796-2815.

[J86] S. Hanly and D. Tse,"Multi-Access Fading Channels: Part II: Delay-Limited Capacities", *IEEE Transactions on Information Theory*,v. 44, No. 7, Nov., 1998, pp. 2816-2831.

[J87] M. Grossglauser, S. Keshav and D. Tse, "RCBR: A Simple and Efficient Service for Multiple Time-Scale Traffic ", *IEEE/ACM Transactions on Networking*, December 1997, pp. 741-755.

[J88] A. Elwalid, G. Freundlich, P. Gerhardt, H. Hagirahim, K.G. Ramakrishnan and D. Tse, "An Overview of the Multimedia Communications Exchange (MMCX) and its Performance Characterization", *Bell Laboratories Technical Journal*, vol. 2, no. 2, 1997, pp. 15-30.

[J89] D. Tse, R.G. Gallager and J.N. Tsitsiklis, "Statistical Multiplexing of Multiple Time-scale Markov Streams", *IEEE Journal on Selected Areas in Communications*, special issue on Advances in the Fundamentals of Networking, vol. 13, no. 6., Aug. 1995, pp. 1028-1039.

[J90] M.A. Dahleh, E.D. Sontag, D. Tse, J.N. Tsitsiklis, "Worst-Case Identification of Nonlinear Fading Memory Systems", *Automatica*, vol.31, no. 3, Mar. 1995, pp. 503-508.

[J91] S.R. Kulkarni and D. Tse, "A Paradigm for Class Identification Problems", *IEEE Transactions on Information Theory*, vol.40, no.1, May 1994, pp. 696-705.

[J92] D. Tse, M.A. Dahleh, J.N. Tsitsiklis, "Optimal Asymptotic Identification Under Bounded Disturbances", *IEEE Transactions on Automatic Control*, vol.38, no.8, Aug. 1993, pp. 1176-90.

[J93] D. Tse and G.R. Heppler, "Shape Determination for Large Flexible Satellites via Stereo Vision", *AIAA Journal of Spacecraft and Rockets*, vol. 29, no. 1, Jan-Feb. 1992.

Invited Publications

[IJ1] D. Tse, "The Spirit of Information Theory", *Information Theory Society Newsletter*, Sept 2017, pp. 3-17. (This is an invited paper for the Shannon lecture I gave at the 2017 International Symposium on Information Theory.)

[IJ2] D. Tse, "It's Easier to Approximate", *Information Theory Society Newsletter*, March 2010, pp. 6-11. (This is an invited paper for the plenary talk I gave at the 2009 International Symposium on Information Theory.)

Refereed Conference Publications

[C1] **Farzan Farnia, Jesse M Zhang**, David Tse, "Generalizable Adversarial Training via Spectral Normalization", arXiv preprint arXiv:1811.07457. Nov. 2018 (to appear in International Conference on Learning Representations, 2019)

[C2] **Jesse Min Zhang, Govinda M Kamath**, N Tse David, "Towards a post-clustering test for differential expression", bioRxiv, 2018. (to appear in RECOMB 2019)

[C3] **Bagaria, Vivek, Govinda Kamath**, Vasilis Ntranos, **Martin Zhang**, and David Tse. "Medoids in Almost-Linear Time via Multi-Armed Bandits." In International Conference on Artificial Intelligence and Statistics, pp. 500-509. April 2018.

[C4] Soheil Feizi, Hamid Javadi, **Jesse Zhang**, David Tse, "Porcupine Neural Networks: Approximating Neural Network Landscapes", Advances in Neural Information Processing Systems, pp. 4836-4846, 2018.

[C5] **Farzan Farnia**, David Tse, "A Convex Duality Framework for GANs", Advances in Neural Information Processing Systems, pp. 5254-5263, 2018.

[C6] S. Feizi and D. Tse, "Maximally Correlated Principal Component Analysis", Under Review at Journal of Machine Learning Research (JMLR). Presented at Information Theory and Applications (ITA) Workshop, San Diego, 2017. Available on arXiv:1702.05471.

[C7] S. Feizi, H. Javadi and D. Tse, "Tensor Biclustering", Neural Information Processing Systems, 2017.

[C8] F. Xia, **M. Zhang**, J. Zou and D. Tse, "NeuralFDR: Learning Discovery Thresholds from Hypothesis Features", Neural Information Processing Systems, 2017.

[C9] S Mao, S Mohajer, K Ramachandran, D Tse, S Kannan, "abSNP: RNA-Seq SNP Calling in Repetitive Regions via Abundance Estimation", LIPIcs-Leibniz International Proceedings in Informatics 88.

[C10] Soheil Feizi, Hamid Javadi, **Zhang Jesse**, David Tse, "Porcupine Neural Networks: (Almost) All Local Optima are Global", Allerton conference, 2017.

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