Venugopal V. Veeravalli
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EDUCATION

University of Illinois at Urbana-Champaign, Ph.D. in *Electrical Engineering*, October, 1992
Dissertation: *Topics in Decentralized Detection*
Advisors: Prof. H. Vincent Poor and Prof. Tamer Başar

Carnegie-Mellon University, Pittsburgh, PA, M.S. in *Electrical Engineering,* May, 1987
Thesis: *Detection of Digital Signals in Erased Magnetic Disks*

Indian Institute of Technology, Bombay, B. Tech. (B.S.) in *Electrical Engineering,* May, 1985

PROFESSIONAL EXPERIENCE

Professor, (2005-present), Department of ECE; also affiliated with Department of Statistics, Coordinated Science Laboratory, and Discovery Partners Institute, *University of Illinois at Urbana-Champaign*.

Director, (2007-2015), *Illinois Center for Wireless Systems*, University of Illinois at Urbana-Champaign.

Program Director, (2003-2005), CISE/CCF/TF, *National Science Foundation*, Arlington, VA

Associate Professor, (2000-2005), Department of ECE, and Coordinated Science Laboratory, *University of Illinois at Urbana-Champaign*

Visiting Professor, Spring 2009, *IISc Bangalore, India*; Fall 2008, *MIT*, Cambridge, MA

Assistant Professor, (1996-2000), School of Electrical Engineering, *Cornell University*. (Also member of graduate fields of Applied Mathematics and Statistical Science.)

Visiting Assistant Professor, (1994-1996), ECE Department, *Rice University*

Assistant Professor, (1993-1994), EE Department, *City College and Graduate School, CUNY*

Postdoctoral Fellow, (1992-1993), Division of Applied Sciences, *Harvard University*

AWARDS AND HONORS

Padovani Lecturer, IEEE Information Theory Society, 2026.

Distinguished Alumnus Award, Indian Institute of Technology (IIT) Bombay, 2025.

Distinguished Lecturer, IEEE Information Theory Society, 2025-2026

Fellow of the Institute of Mathematical Statistics (IMS), 2024, "for outstanding contributions to sequential hypothesis testing and quickest change detection."

Fellow of the Asia-Pacific Artificial Intelligence Association (AAIA), 2024.

Fulbright-Nokia Distinguished Chair in Information and Communications Technologies, 2023.

Abraham Wald Prize in Sequential Analysis, 2015 and 2019.

Distinguished Lecturer, IEEE Signal Processing Society , 2010-2011.

List of Teachers Ranked as Excellent by their Students, University of Illinois, 17 times since 2007.

IEEE Signal Processing Society Young Author Best Paper Award, 2006 (with Jean-Francois Chamberland) for "Decentralized Detection in Sensor Networks," (see publication [J27]).

Fellow of the IEEE, 2006, "for contributions to wireless communications and sensor networks."

Xerox Award for Faculty Research, College of Engineering, Illinois, 2003.

Beckman Associate of the Center for Advanced Study, Illinois, 2002-2003.

Michael Tien Excellence in Teaching Award, College of Engineering, Cornell University, 1999.

PECASE (Presidential Early Career Award for Scientists and Engineers), 1999, to recognize outstanding research in wireless communications and for innovations in teaching. This is "the highest honor bestowed by the U.S. government on outstanding new scientists and engineers who are in the early stages of establishing their independent research careers."

CAREER Award, National Science Foundation, 1998.

IEEE Browder J. Thompson Prize Award, 1996, an award given to an outstanding paper by authors under the age of 30 selected from all the publications of the IEEE. The award winning paper: "A Sequential Procedure for Multihypothesis Testing" (see publication [J9]).

Institute Silver Medal, IIT, Bombay, 1985.

MEMBERSHIPS

Fellow, *IEEE*, and member of IEEE *Information Theory, Communications, Signal Processing* societies. **Chair** of the Ithaca Section of the IEEE, 1998-2000.

Fellow, Institute of Mathematical Statistics (IMS)

Member, *Bernoulli* Society

MAJOR CONSULTING ACTIVITIES

Sidley Austin LLP expert witness consulting with deposition experience, Chicago, IL 2017, 2018.

Marshall, Gerstein & Borun expert witness consulting, Chicago, IL, 2012 and 2013.

WilmerHale expert witness consulting with deposition experience, Boston, MA, 2011, 2012, 2013 and 2014.

Qualcomm, Inc, San Diego, CA, 2009 and 2010

Bartlit-Beck, expert witness consulting, Chicago, IL, 2001 and 2002.

Nortel Networks, Richardson, TX. 1995 and 1996.

MAJOR EXTERNAL SERVICE ACTIVITIES

Editor-in-Chief, *IEEE Transactions on Information Theory*, 2023-2025

Program Director, (2003-2005), CISE/CCF/TF, *National Science Foundation*, Arlington, VA

Technical Program Committee Co-Chair, *IEEE International Symposium on Information Theory*, Paris, France, 2019.

General Co-Chair, *IEEE International Symposium on Information Theory*, Honolulu, Hawaii, June 2014.

Technical Program Chair, *IEEE Communication Theory Workshop*, Maui, Hawaii, May 2012.

Coorganizer of the *National Academy of Engineering*, 2001 Frontiers of Engineering Conference

Invited Participant in the *National Academy of Engineering*, Frontiers of Engineering Conference, Irvine, CA, September 2000

Member of the Board of Governors of the *IEEE Information Theory Society,* 2004-2007, 2023-present.

Member of the Big Data SIG of the *IEEE Signal Processing Society*, 2017 - 2019

Member of the SPTM Technical Committee of the *IEEE Signal Processing Society,* 2011 - 2016.

Guest Editor, *IEEE JSAIT Special Issue on Sequential, Active and Reinforcement Learning,* 2021.

Guest Editor, *IEEE JSTSP Special Issue on Learning-Based Decision Making*, October 2013.

Guest Editor, *IEEE JSTSP Special Issue on Anomalous Pattern Discovery*, February 2013.

Guest Editor, *EURASIP Journal on Advances in Signal Processing (JASP) on Wireless Location Estimation and Tracking,* May 2008.

Guest Editor, *IEEE Signal Processing Magazine, Special Issue on Resource-Constrained Signal Processing, Communications, and Networking,* May 2007.

Associate Editor, *Sequential Analysis,* 2025-present.

Area Editor for Statistics and Machine Learning for *IEEE Transactions on Information Theory*, 2022-2023.

Senior Area Editor for *IEEE Open Journal of Signal Processing*, 2019-2022

Associate Editor, Detection & Estimation for *IEEE Transactions on Information Theory*, 2000-2004

Associate Editor for *IEEE Transactions on Wireless Communications*, 2000-2001

Editorial Board Member for *Journal of Statistical Theory and Practice*, 2007-2011

Editorial Board Member for *Journal of Advances in Information Fusion*, 2003-2008.

Editorial Board Member for *Communications in Information and Systems (CIS)*, 2001-present

Chair, IEEE Ithaca Section, 1999 – 2000

General Co-Chair for *2003, 2004 Allerton Conference on Communication, Control, and Computing*

Tutorial Chair for *IEEE ISIT 2004,* Chicago, IL, June-July, 2004

MAJOR CAMPUS SERVICE ACTIVITIES

Chair, Faculty Search Committee, ECE Department, 2025-present

Member, Executive Committee, Discovery Partners Institute, 2023-2025

Member, Coordinated Science Laboratory, Policy and Planning Committee, 2023-2025

Chair, Distinguished Colloquium Committee, ECE Department, 2016-2017, 2020-2024

Chair, Curriculum Committee, ECE Department, 2014-2015

Chair, Faculty Professional Recognition Committee, ECE Department, 2010-2013

Member, Senate and Senate Committee on Information Technology, 2011-2014

Chair, Vodafone Awards Committee, College of Engineering, 2003-2008

RESEARCH ACTIVITIES

Summary: Veeravalli's research interests span the theoretical areas of statistical inference, machine learning, and information theory, with applications to AI, data science, wireless communications, sensor networks and cyberphysical systems.

Current Research Topics

- Non-stationary bandits, Markov decision processes and reinforcement learning
- Compression for distributed learning and inference
- Nonparametric methods for quickest change detection
- Robust inference and learning
- Network event detection and inference
- Out-of-distribution detection in machine learning
- Hallucination detection in LLMs
- Multiuser multi-armed bandits for dynamic spectrum access

PUBLICATIONS

Note: Many of these publications are available on http://vvv.ece.illinois.edu

Books

[B2] P. Moulin and V.V. Veeravalli. *Statistical Inference for Engineers and Data Scientists.* Cambridge University Press, 2019.

[B1] V.V. Veeravalli and A. ElGamal. *Interference Management in Wireless Networks: Fundamental Bounds and the Role of Cooperation.* Cambridge University Press, 2018.

Book Chapters

[BC11] N. Bastian, S. Jha, P. Tabuada, V.V. Veeravalli, and G. Verma. "Principles of Robust Learning and Inference for IoBTs." In *IoT for Defense and National Security,* R. Douglass, K. Gremban, S. Gerali and A. Swami, eds. John Wiley & Sons, 2023.

[BC10] S. Jha, S. A. Seshia, P. Tabuada and V.V. Veeravalli. "Resilient Machine Learning for IoBTs." In *Modeling and design of secure internet of things,* C.A. Kamhoua, L.L. Njilla, A. Kott, and S. Shetty, eds., John Wiley & Sons, 2020.

[BC9] A.D. Dominguez-Garcia and V.V. Veeravalli. "Detection and Isolation of Power System Transmission Line Outages." In *Advanced Data Analytics for Power Systems,* A. Tajer, S.M. Perlaza, and H.V. Poor (Eds.), Cambridge University Press, 2020.

[BC8] V.V. Veeravalli and T. Banerjee. "Quickest Change Detection." In *E-Reference Signal Processing.* Elsevier, 2013. Also available at `http://arxiv.org/pdf/1210.5552v1.pdf`.

[BC7] V.V. Veeravalli. "Fundamentals of Detection Theory." In *Mathematical Foundations for Signal Processing, Communications and Networking*, T. Chen, D. Rajan, and E. Serpedin (Eds.), Cambridge University Press, 2011.

[BC6] S. Sundhar Ram, V. V. Veeravalli and A. Nedic, "Distributed and Recursive Estimation." In *Sensor Networks: When Theory meets Practice*, G. Ferrari, (Ed.), Springer 2010.

[BC5] J. Fuemmeler and V.V. Veeravalli. "Smart Sleeping Policies for Energy-Efficient Tracking in Sensor Networks." In *Networked Sensing Information and Control,* V. Saligrama, (Ed.), Springer 2008.

[BC4] V.V. Veeravalli and J.-F. Chamberland. "Detection in Sensor Networks." In *Wireless Sensor Networks. Signal Processing and Communications Perspectives*, A. Swami et al (Eds.), Wiley, 2007.

[BC3] C. Pandit, J. Huang, S. Meyn, M. Medard, and V.V. Veeravalli, "Entropy, Inference, and Channel Coding." *Wireless Communications, The IMA Volumes in Mathematics and its Applications,* P. Agrawal et al (Eds.), Springer, 2007.

[BC2] A.G. Tartakovsky and V.V. Veeravalli. "Change-Point Detection in Multichannel and Distributed Systems With Applications." In *Applied Sequential Methodologies: An Edited Volume,* N. Mukhopadhyay, S. Datta, and S. Chattopadhyay (Eds.), Marcel-Dekker, 2004.

[BC1] V.V. Veeravalli, T. Başar and H.V. Poor. "Decentralized Sequential Detection with a Fusion Center Performing the Sequential Test." *IEEE Transactions on Information Theory,* 39(2): 433-442, March 1993. *Reprinted as pages 186–195 in "Selected Papers on Sensor and Data Fusion," F. A. Sadjadi (Edt.), SPIE Milestone Series, Volume MS 124, SPIE Engineering Press, 1996.*

Journal Papers Under Review

[P2] Y-H. Huang, A. Gerogiannis, S. Bose and V.V. Veeravalli. "Detection Augmented Bandit Procedures for Piecewise Stationary MABs: A Modular Approach." Submitted to *IEEE Transactions on Information Theory,* October 2025.

[P1] Y.-H. Huang and V.V. Veeravalli. "Finite-Horizon Quickest Change Detection Balancing Latency with False Alarm Probability." Submitted to *Sequential Analysis*, October 2025.

Journal Publications

[J121] A.M. Subramaniam, A. Gerogiannis, J.Z. Hare and V.V. Veeravalli. "Track-MDP: Reinforcement Learning for Target Tracking with Controlled Sensing." To appear in *IEEE Transactions on Signal Processing,* 2026.

[J120] T. Halme, V.V. Veeravalli, and V. Koivunen. "Quickest Change Detection for Multiple Data Streams Using the James-Stein Estimator." *IEEE Transactions on Information Theory,* 75(10): 7802 - 7814, October 2025.

[J119] J.Z. Hare, Y. Liang, L. Kaplan and V.V. Veeravalli. "Bayesian Two-Sample Hypothesis Testing using the Uncertain Likelihood Ratio: Improving the Generalized Likelihood Ratio Test." *IEEE Transactions on Signal Processing,* 73(2): 1410-1425, July 2025.

[J118] Y. Liang and V.V. Veeravalli. "Quickest Change Detection with Post-Change Density Estimation." *IEEE Transactions on Information Theory,* 70(11): 8072 - 8086, Nov 2024.

[J117] N. Dahlin, S. Bose, and V.V. Veeravalli. "Controlling a Markov Decision Process with an Abrupt Change in the Transition Kernel." *Journal Applied and Computational Mathematics,* Special Issue on Control, Teams, and Games in honor of Prof. Tamer Başar, vol. 23, no. 03, pp. 325-345, 2024.

[J116] A. Subramaniam, A. Magesh, and V.V. Veeravalli. "Adaptive Step-size Procedures for Compressed SGD." In *IEEE Transactions on Signal Processing,* vol. 72, pp. 2394-2406, April 2024.

[J115] V.V. Veeravalli, G. Fellouris, and G.V. Moustakides. "Quickest Change Detection with Controlled Sensing." *IEEE Journal on Selected Areas in Information Theory,* Special Issue Dedicated to the Memory of Toby Berger: Data, Physics, and Life Through the Lens of Information Theory, vol. 5, pp. 1-11, Feb 2024.

[J114] A. Magesh, V.V. Veeravalli, A. Roy, and S. Jha. "Principled Out-of-Distribution Detection via Multiple Testing." *Journal of Machine Learning Research,* 24(378):1-35, Nov 2023.

[J113] A. Deshmukh, J. Liu and V.V. Veeravalli. "Robust Mean Estimation in High Dimensions: An Outlier-Fraction Agnostic and Efficient Algorithm." *IEEE Transactions on Information Theory,* 69(7): 4675-4690, July 2023.

[J112] A. Deshmukh, J. Liu, V.V. Veeravalli and G. Verma. "Information Flow Optimization for Estimation in Linear Models Using a Sensor Network." *IEEE Signal Processing Letters,* vol. 30, pp. 170-174, 2023.

[J111] Y. Liang, A.G. Tartakovsky and V.V. Veeravalli. "Quickest Change Detection with Non-Stationary

Post-Change Observations." *IEEE Transactions on Information Theory,* 69(5): 3400-3414, May 2023.

[J110] Y. Liang and V.V. Veeravalli. "Non-Parametric Quickest Mean-Change Detection." *IEEE Transactions on Information Theory,* 68 (12): 8040-8052, Dec 2022.

[J109] A. Magesh and V.V. Veeravalli. "Decentralized Heterogeneous Multi-Player Multi-Armed Bandits with Non-Zero Rewards on Collisions." *IEEE Transactions on Information Theory,* 68(4): 2622-2634, April 2022.

[J108] Y. Bu, W. Gao, S. Zou and V.V. Veeravalli. "Population Risk Improvement with Model Compression: An Information-Theoretic Approach." *Entropy, Special Issue on Information Theory for Machine Learning,* 23(10), 2021. Available online at: https://www.mdpi.com/1099-4300/23/10/1255.

[J107] M.-J. Youssef, V.V. Veeravalli, J. Farah, C.A. Nour, and C. Douillard. "Resource Allocation in NOMA-based Self-Organizing Networks using Stochastic Multi-Armed Bandits." *IEEE Transactions on Communications,* 69(9): 6003-6017, June 2021.

[J106] G. Rovatsos, V.V. Veeravalli, D. Towsley, and A. Swami. "Quickest Detection of Anomalies of Varying Location and Size in Sensor Networks." *IEEE Transactions on Aerospace and Electronic Systems,* Special Issue on Meta-level and Adversarial Tracking, 57(4): 2109 - 2120, August 2021.

[J105] G. Rovatsos, G.V. Moustakides and V.V. Veeravalli. "Quickest Detection of Moving Anomalies in Sensor Networks." *IEEE Journal on Selected Areas in Information Theory,* Special Issue on Sequential Active and Reinforcement Learning, 2(2): 762-773, June 2021.

[J104] L. Xie, S. Zou, Y. Xie, and V.V. Veeravalli. "Sequential (Quickest) Change Detection: Classical Results and New Directions." *IEEE Journal on Selected Areas in Information Theory,* Special Issue on Sequential Active and Reinforcement Learning, 2(2): 494-514, June 2021.

[J103] A. Deshmukh, V. V. Veeravalli and S. Bashyam. "Sequential Controlled Sensing for Composite Multihypothesis Testing." *Sequential Analysis*. 40(2): 259-289, May 2021.

[J102] M. Bande, A. Magesh, and V.V. Veeravalli. "Dynamic Spectrum Access using Stochastic Multi-User Bandits." *IEEE Wireless Communication Letters*, 10(5): 953-956, May 2021.

[J101] M. Bande and V.V. Veeravalli. "Design of a Heterogeneous Cellular Network with a Wireless Backhaul." *IEEE Transactions on Wireless Communication,* 20(1): 243-253, January 2021.

[J100] Y. Bu, S. Zou and V.V. Veeravalli. "Tightening Mutual Information Based Bounds on Generalization Error." *IEEE Journal on Selected Areas in Information Theory,* 1(1): 121-130, May 2020.

[J99] G. Rovatsos, S. Zou, and V. V. Veeravalli. "Sequential Algorithms for Moving Anomaly Detection in Networks." *Sequential Analysis,* Vol. 39, No. 1, 2020.

[J98] H. Xu, A.D. Dominguez-Garcia, P. Sauer, and V.V. Veeravalli. "Data-driven Voltage Regulation in Radial Power Distribution Systems." *IEEE Transactions on Power Systems, 2020,* 35(3): 2133-2143, May 2020.

[J97] S. Zou, V.V. Veeravalli, J. Li, and D. Towsley. "Quickest Detection of Dynamic Events in Networks." *IEEE Transactions on Information Theory,* 66 (4): 2280-2295, April 2020.

[J96] C. Wilson, Y. Bu, and V.V. Veeravalli. "Adaptive Sequential Machine Learning." *Sequential Analysis,* Vol. 38, No. 4, 545 - 568, 2019. **Wald Prize in Sequential Analysis.**

[J95] M. Bande, A. El Gamal, and V.V. Veeravalli. "Degrees of Freedom in Wireless Interference Networks with Cooperative Transmission and Backhaul Load Constraints." *IEEE Transactions on Information Theory,* 65(9): 5816-5832, September 2019.

[J94] Y. Bu, S. Zou, and V.V. Veeravalli. "Linear-Complexity Exponentially-Consistent Tests for Universal Outlying Sequence Detection." *IEEE Transactions on Signal Processing,* 67(8):2115 - 2128, April 2019.

[J93] S. Zou, G. Fellouris, and V.V. Veeravalli."Quickest Change Detection under Transient Dynamics: Theory and Asymptotic Analysis." *IEEE Transactions on Information Theory,* 65(3): 1397-1412, March 2019.

[J92] C. Wilson, V.V. Veeravalli and A. Nedic. "Adaptive Sequential Stochastic Optimization." *IEEE Transactions on Automatic Control*, 64(2): 496-509, February 2019.

[J91] T.S. Lau, W.P. Tay, and V.V. Veeravalli."A Semi-Parametric Binning Approach to Quickest Change Detection." *IEEE Transactions on Signal Processing,* 67(3):609-621, Feb 2019.

[J90] Y. Bu, S. Zou, Y. Liang and V.V. Veeravalli. "Estimation of KL Divergence: Optimal Minimax Rate." *IEEE Transactions on Information Theory,* 64(4): 2648 - 2674, April 2018.

[J89] Y. Li, S. Nitinawarat and V.V. Veeravalli. "Universal Sequential Outlier Hypothesis Testing. " *Sequential Analysis*, 36(3): 309-344, September 2017.

[J88] G. Rovatsos, X. Jiang, A.D. Dominguez-Garcia, and V.V. Veeravalli. "Statistical Power System Line Outage Detection Under Transient Dynamics." *IEEE Transactions on Signal Processing*, 65(11):2787-2797, June 2017.

[J87] S. Nitinawarat and V.V. Veeravalli. "Universal Scheme for Optimal Search and Stop." *Bernoulli*, 23(3): 1759-1783, March 2017.

[J86] M. Kim, X. Zhang, J.G. Ligo, F. Farnoud, V.V. Veeravalli, O. Milenkovic. "MetaCRAM: An Integrated Pipeline for Metagenomic Taxonomy Identification and Compression." *BMC Bioinformatics*, February 2016.

[J85] Y.C. Chen, T. Banerjee, A.D. Dominguez-Garcia, and V.V. Veeravalli. "Quickest Line Outage Detection and Identification." *IEEE Transactions on Power Systems*, 31(1): 749-758, January 2016.

[J84] T. Banerjee and V.V. Veeravalli. "Data-Efficient Minimax Quickest Change Detection with Composite Post-change Hypothesis." *IEEE Transactions on Information Theory*, 61(9): 5172 - 5184, September, 2015.

[J82] T. Banerjee and V.V. Veeravalli. "Data-Efficient Quickest Change Detection in Sensor Networks." *IEEE Transactions on Signal Processing*, 63(14): 3727-3735, July 2015.

[J82] T. Banerjee and V.V. Veeravalli. "Data-Efficient Minimax Quickest Change Detection in a Decentralized System." *Sequential Analysis*, 34(2): 148-170, May 2015. **Wald Prize in Sequential Analysis.**

[J81] S. Nitinawarat and V.V. Veeravalli. "Controlled Sensing for Sequential Multihypothesis Testing with Controlled Markovian Observations and Non-Uniform Control Cost." *Sequential Analysis*, 34(1): 1-24, February 2015.

[J80] J. Ligo, G. Atia, and V.V. Veeravalli. "A Controlled Sensing Approach to Graph Classification." *IEEE Transactions on Signal Processing*, 62(24): 6468-6480, December 2014.

[J79] A. Tajer, V.V. Veeravalli and H.V. Poor. "Outlying Sequence Detection in Large Data Sets: A data-driven approach". *IEEE Signal Processing Magazine, Special Issue on Signal Processing for Big Data*, 31(5): 44-56, September, 2014.

[J78] C. Wilson and V.V. Veeravalli. "Degrees of Freedom for the Constant MIMO Interference Channel with CoMP Transmission." *IEEE Transactions on Communications*, 62(8): 2894 - 2904, August 2014.

[J77] Y. Li, S. Nitinawarat and V.V. Veeravalli. "Universal Outlier Hypothesis Testing." *IEEE Transactions on Information Theory*, 60(7): 4066-4082, July 2014.

[J76] A. ElGamal, V.S. Annapureddy, and V.V. Veeravalli. "Interference Channels with CoMP: Degrees of Freedom, Message Assignment, and Fractional Reuse." *IEEE Transactions on Information Theory*, 60(6): 3483-3498, June 2014.

[J75] T. Banerjee and V.V. Veeravalli. "Data-Efficient Quickest Change Detection." *Sri Lankan Journal of Applied Statistics, Special Issue: Modern Statistical Methodologies in the Cutting Edge of Science*, pp 183-208, Nov 2014. (**Invited.**)

[J74] V. Raghavan and V.V. Veeravalli. "Ensemble Properties of RVQ-Based Limited-Feedback Beamforming Codebooks." *IEEE Transactions on Information Theory*, 59(12): 8224-8249, December 2013.

[J73]] T. Banerjee and V.V. Veeravalli. "Data-Efficient Quickest Change Detection in Minimax Settings."

IEEE Transactions on Information Theory, 59(10): 6917 - 6931, October 2013.

[J72] V. Raghavan, S. Hanly and V.V. Veeravalli. "Statistical Beamforming on the Grassmann Manifold for the Two-User Broadcast Channel." *IEEE Transactions on Information Theory*, 59(10): 6464 - 6489, October 2013.

[J71] S. Nitinawarat, G. Atia and V.V. Veeravalli. "Controlled Sensing for Multihypothesis Testing." *IEEE Transactions on Automatic Control*, 58(10): 2451 - 2464, October 2013.

[J70] A. Nayyar, T. Basar, D. Teneketsis, and V. V. Veeravalli. "Optimal Strategies for Communication and Remote Estimation with an Energy Harvesting Sensor." *IEEE Transactions on Automatic Control*, 58(9): 2246 - 2260, September 2013.

[J69] C. Wilson and V.V. Veeravalli. "A Convergent Version of the Max SINR Algorithm for the MIMO Interference Channel." *IEEE Transactions on Wireless Communication*, 12(6):2952-2961, June 2013.

[J68] V.S. Annapureddy, A. ElGamal and V.V. Veeravalli. "Degrees of Freedom of Interference Channels with CoMP Transmission and Reception." *IEEE Transactions on Information Theory*, 58(9): 5740-5760, September 2012.

[J67] S. Sundhar Ram, A. Nedich, V. V. Veeravalli. "A New Class of Distributed Optimization Algorithms: Application to Regression of Distributed Data." *Optimization Methods and Software,* 27(1): 71-88, February 2012.

[J66] T. Banerjee and V.V. Veeravalli. "Data Efficient Quickest Change Detection with On-Off Observation Control." *Sequential Analysis*, 31: 1-38, January 2012.

[J65] V.V. Veeravalli and P.K. Varshney, "Distributed Inference in Wireless Sensor Networks." *Philosophical Transactions of the Royal Society A,* 370: 100-117, January 2012. (**Invited survey paper.**)

[J64] G.K. Atia, V.V. Veeravalli and J.A. Fuemmeler. "Sensor Scheduling for Energy-Efficient Target Tracking in Sensor Networks ." *IEEE Transactions on Signal Processing*, 59(10): 4923 - 4937 , October 2011.

[J63] J.A. Fuemmeler, G.K. Atia and V.V. Veeravalli. "Sleep Control for Tracking in Sensor Networks." *IEEE Transactions on Signal Processing*, 59(9): 4354 - 4366, September 2011.

[J62] V.S. Annapureddy and V.V. Veeravalli. "Sum Capacity of MIMO Interference Channels in the Low Interference Regime." *IEEE Transactions on Information Theory,* 57(5): 2565 - 2581, May 2011.

[J61] R. Tandra, A. Sahai, and V.V. Veeravalli. "Unified Space-Time Metrics to Evaluate Spectrum Sensing." *IEEE Communications Magazine,* 49(3): 54 - 61, March 2011

[J60] J. Unnikrishnan, D. Huang, S.P. Meyn, A. Surana and V.V. Veeravalli. "Universal and Composite Hypothesis Testing via Mismatched Divergence." *IEEE Transactions on Information Theory,* 57(3): . 1587-1603, March 2011.

[J59] V. Raghavan, A.M. Sayeed, and V.V. Veeravalli. "Semiunitary Precoding for Spatially Correlated MIMO Channels." *IEEE Transactions on Information Theory,* 57(3): 1284-1298, March 2011.

[J58] J. Unnikrishnan, V.V. Veeravalli and S.P. Meyn. "Minimax Robust Quickest Change Detection." *IEEE Transactions on Information Theory,* 57(3): 1604-1614, March 2011.

[J57] C. Lin, V.V. Veeravalli and S.P. Meyn. "A Random Search Framework for Convergence Analysis of Distributed Beamforming with Feedback." *IEEE Transactions on Information Theory,* 56(12): 6133-6141, December 2010.

[J56] S. Sundhar Ram, A Nedic and V. V. Veeravalli. "Distributed Stochastic Subgradient Projection Algorithms for Convex Optimization." *Journal of Optimization Theory and Applications,* 147(3):516-545, July 2010.

[J55] J. Fuemmeler and V.V. Veeravalli. "Energy Efficient Multi-Object Tracking in Sensor Networks." *IEEE Transactions on Signal Processing*, 58(7): 3742-3750, July 2010.

[J54] V. Raghavan and V.V. Veeravalli. "Quickest Change Detection of a Markov Process Across a Sensor

Array." *IEEE Transactions on Information Theory,* 56(4): 1961-1981, April 2010.

[J53] S. Sundhar Ram, V. V. Veeravalli and A. Nedic. "Distributed and Recursive Parameter Estimation in Parametrized Linear State-Space Models." *IEEE Transactions on Automatic Control,* 55(2): 488-492, February 2010.

[J52] J. Unnikrishnan and V.V. Veeravalli. "Algorithms for Dynamic Spectrum Access with Learning for Cognitive Radio." *IEEE Transactions on Signal Processing,* 58 (2):750-760, February 2010.

[J51] V. S. Annapureddy and V.V. Veeravalli. "Gaussian Interference Networks: Sum Capacity in the Low Interference Regime and New Outer Bounds on the Capacity Region." *IEEE Transactions on Information Theory,* 55(7): 3032–3050, July 2009.

[J50] S. Sundhar Ram, A. Nedic and V.V. Veeravalli. "Incremental Stochastic Subgradient Algorithms for Convex Optimization." *SIAM Journal on Optimization*, 20 (2): 691-717, February 2009.

[J49] V. Raghavan, V.V. Veeravalli and A.M. Sayeed. "Quantized Multimode Precoding in Spatially Correlated Multi-Antenna Channels." *IEEE Transactions on Signal Processing,* 56(12): 6017-6030, December 2008.

[J48] A.G. Tartakovsky and V.V. Veeravalli. "Asymptotically Optimal Quickest Change Detection in Distributed Sensor Systems." *Sequential Analysis,* 27(4): 441-475, October 2008.

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Conference Publications and Presentations

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[C288] Y.-H. Huang and V.V. Veeravalli. "Sequential Change Detection for Learning in Piecewise Stationary Bandit Environments." In *Proc. IEEE ISIT*, Ann Arbor, MI, June 2025.

[C287] A. Gerogiannis, Y.-H. Huang and V.V. Veeravalli. "Is Prior-Free Black-Box Non-Stationary Reinforcement Learning Feasible?" *Proc. Artificial Intelligence and Statistics (AISTATS),* Mai Khao, Thailand, May 2025.

[C286] J.Z. Hare, L. Kaplan, V.V. Veeravalli and D. Towsley. "The K-Best rule for Efficient Quickest Change Detection with Unknown Post-Change Distribution" In *Proc. IEEE ICASSP*, Hyderabad, India, April 2025.

[C285] T. Halme, V.V. Veeravalli and V. Koivunen. "Quickest Change Detection of Unknown Mean-Shifts using the James-Stein Estimator." In *Proc. IEEE ICASSP*, Hyderabad, India, April 2025.

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[C283] A. Deshmukh, V.V. Veeravalli and G. Verma. "Distributed and Rate-Adaptive Feature Compression." *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, Nov 2024.

[C282] Y.-Z. Chen, J. Zuo, V.V. Veeravalli and D. Towsley. "Quickest Change Detection with Confusing Change." *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, Nov 2024.

[C281] Y-H. Huang, A. Gerogiannis, S. Bose and V.V. Veeravalli. "Modular Analysis of Change Detection Based Algorithms for Piecewise Stationary Bandits." *IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, Nov 2024, (**Invited.**)

[C280] A. Magesh, V.V. Veeravalli, A. Roy, and S. Jha. "Detection of Untrustworthy Outputs from Learning Models: A Multiple Testing Approach." *IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, Nov 2024, (**Invited.**)

[C279] A.R. Ramtin, J.Z. Hare, L. Kaplan, P. Nain, D. Towsley, and V.V. Veeravalli. "Quickest Change Detection in the Presence of Covert Adversaries." In *Proc. MILCOM* Washington, DC, October 2024.

[C278] V.V. Veeravalli. "Out-of-Distribution Detection via Multiple Testing." IEEE Machine Learning and Signal Processing (MLSP) Workshop, London, UK, September 2024. **(Plenary Talk.)**

[C277] Y-H. Huang and V.V. Veeravalli. "High Probability Low Latency Sequential Change Detection over an Unknown Finite Horizon." In *Proc. IEEE ISIT*, Athens, Greece, July 2024.

[C276] A. Magesh, Z. Sun, V.V. Veeravalli, and S. Zou. "Robust Multi-Hypothesis Testing with Moment-Constrained Uncertainty Sets." In *Proc. IEEE ISIT*, Athens, Greece, July 2024.

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[C274] Y. Liang and V.V. Veeravalli. "Quickest Change Detection with Post-Change Density Estimation." *International Workshop on Sequential Methodologies*," Orem, Utah, May 2024. (**Invited.**)

[C273] L. Xie, Y. Liang and V.V. Veeravalli. "Distributionally Robust Quickest Change Detection using Wasserstein Uncertainty Sets." In *Proc. 27th International Conference on Artificial Intelligence and Statistics (AISTATS)*, Valencia, Spain, May 2024.

[C272] V.V. Veeravalli, G. Fellouris, and G.V. Moustakides. "Quickest Change Detection with Controlled Sensing." CISS, March 2024. (**Invited.**)

[C271] Y. Shi, A. Deshmukh, Y. Mei, and V.V. Veeravalli. "Robust High-Dimensional Linear Discriminant Analysis under Training Data Contamination." In *Proc. IEEE ISIT*, Taipei, Taiwan, June 2023.

[C270] A. Magesh, V.V. Veeravalli, S. Jha, and A. Roy. "Principled OOD Detection via Multiple Testing." In *Proc. IEEE ISIT*, Taipei, Taiwan, June 2023.

[C269] L. Xie, Y. Liang and V.V. Veeravalli. "Data-driven Minimax Robust Quickest Change Detection." *International Workshop on Applied Probability (IWAP)*, Thessaloniki, Greece, June 2023. (**Invited.**)

[C268] V.V. Veeravalli, G. Fellouris, and G.M. Moustakides. "Quickest Change Detection with Controlled Sensing." *International Workshop on Applied Probability (IWAP)*, Thessaloniki, Greece, June 2023. (**Invited.**)

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[C266] A.M. Subramaniam, A. Magesh, and V.V. Veeravalli. "Adaptive Step-Size Methods for Compressed SGD." In *Proc. IEEE ICASSP*, Rhodes, Greece, June 2023.

[C265] Y. Liang and V.V. Veeravalli. "Quickest Change Detection with Leave-one-out Density Estimation. In *Proc. IEEE ICASSP*, Rhodes, Greece, June 2023.

[C264] N. Dahlin, S. Bose, and V.V. Veeravalli. "Controlling a Markov Decision Process with an Abrupt Change in the Transition Kernel." In *Proc. IEEE ACC*, May-June, 2023.

[C263] T. Abdelzaher, N. D. Bastian, S. Jha, L. Kaplan, M. Srivastava and V. V. Veeravalli, "Context-aware Collaborative Neuro-Symbolic Inference in IoBTs," MILCOM 2022 - 2022 IEEE Military Communications Conference (MILCOM), Rockville, MD, USA, Nov-Dec, 2022.

[C262] A. Magesh, V.V. Veeravalli, S. Jha, and A. Roy. "Multiple testing Framework for Out-of-Distribution Detection." In *ICML Workshop on Distribution-Free Uncertainty Quantification,* Baltimore, MD, August 2022. (**Invited.**)

[C261] A. Deshmukh, J. Liu and V.V. Veeravalli. "Robust Mean Estimation in High Dimensions: An Outlier-Fraction Agnostic and Efficient Algorithm." In *Proc. IEEE ISIT*, Finland, June 2022.

[C260] G. Fellouris and V.V. Veeravalli. "Quickest Change Detection With Controlled Sensing." In *Proc. IEEE ISIT*, Finland, June 2022.

[C259] Y. Liang and V.V. Veeravalli. "Quickest Detection of Composite and Non-Stationary Changes with Application to Pandemic Monitoring." In *Proc. IEEE ICASSP*, Singapore, May 2022.

[C258] A. Magesh and V.V. Veeravalli. "Decentralized Heterogeneous Multi-Player Multi-Armed Bandits with Non-Zero Rewards on Collisions." CISS, March 2022 (virtual). (**Invited.**)

[C257] Y. Liang, A. Tartakovsky and V.V. Veeravalli. "Quickest Change Detection with Non-stationary and Composite Post-change Distribution." CISS, March 2022 (virtual). (**Invited.**)

[C256] A. Deshmukh, J. Liu, and V.V. Veeravalli. "High-Dimensional Robust Mean Estimation via Outlier-Sparsity Minimization." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, (virtual), November 2021. (**Invited.**)

[C255] Y. Liang and V.V. Veeravalli. "Non-Parametric Quickest Detection of a Change in the Mean of an Observation Sequence." *In Proc. CISS*, March 2021 (virtual).

[C254] T. Vasantham, D. Towsley and V.V. Veeravalli. "Quickest Change Detection in the Presence of Transient Adversarial Attacks." *In Proc. CISS*, March 2021 (virtual).

[C253] M. -J. Youssef, V. V. Veeravalli, J. Farah and C. A. Nour. "Stochastic Multi-Player Multi-Armed Bandits with Multiple Plays for Uncoordinated Spectrum Access." *In Proc. IEEE Annual International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, London, UK, August 2020 (virtual).

[C252] G. Rovatsos, V.V. Veeravalli and G. Moustakides. "Quickest Detection of a Dynamic Anomaly in a Heterogeneous Sensor Network." In *Proc. IEEE ISIT*, Los Angeles, CA, June 2020 (virtual).

[C251] G. Rovatsos, V.V. Veeravalli, D. Towsley and A. Swami. "Quickest Detection of Growing Dynamic Anomalies in Networks." *In Proc. IEEE ICASSP,* Barcelona, Spain, May 2020 (virtual). (**Invited.**)

[C250] A. Deshmukh, J. Liu, V.V. Veeravalli and G. Verma. "Information Flow Optimization in Inference Networks." *In Proc. IEEE ICASSP,* Barcelona, Spain, May 2020 (virtual).

[C249] J. Liu, A. Deshmukh, and V.V. Veeravalli. "Robust Mean Estimation via L0 Regularization." *Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, March 2020. (**Invited.** Cancelled.)

[C248] G. Rovatsos, V.V. Veeravalli and G. Moustakides. "Sequential detection of dynamic anomalies in heterogeneous sensor networks." *Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, March 2020. (**Invited.** Cancelled.)

[C247] Y. Bu, W. Gao, S. Zou and V.V. Veeravalli. "Information-Theoretic Understanding of Population

Risk Improvement with Model Compression." In *Proc. AAAI Conference on Artificial Intelligence (AAAI-20),* New York, NY, February 2020.

[C246] Y. Bu, J. Lu and V.V. Veeravalli. "Active and Adaptive Sequential Learning with Per Time-Step Excess Risk Guarantees." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2019.

[C245] G. Rovatsos, G. Moustakides, and V.V. Veeravalli. "Quickest Detection of a Dynamic Anomaly in a Sensor Network." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2019.

[C244] J. Li, D. Towsley, S. Zou, V.V. Veeravalli, G. Ciocarlie. "A Consensus-Based Approach for Distributed Quickest Detection of Significant Events in Networks." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2019.

[C243] A. Magesh and V.V. Veeravalli. "Multi-User MABs with User Dependent Rewards for Uncoordinated Spectrum Access." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2019.

[C242] A. El Gamal and V.V. Veeravalli. "Interference Management in Wireless Networks." Tutorial at *IEEE ISIT*, Paris, France, July 2019.

[C241] G. Rovatsos, S. Zou, and V.V. Veeravalli. "Quickest Detection of a Moving Anomaly in a Sensor Network." In *Proc. IEEE ISIT*, Paris, France, July 2019.

[C240] Y. Bu, S. Zou and V.V. Veeravalli. "Tightening Mutual Information Based Bounds on Generalization Error." In *Proc. IEEE ISIT*, Paris, France, July 2019.

[C239] A. Tsopelakos, G. Fellouris, and V.V. Veeravalli. "Sequential Anomaly Detection with Observation Control." In *Proc. IEEE ISIT*, Paris, France, July 2019.

[C238] V.V. Veeravalli, G. Rovatsos, S. Zou, and G. Moustakides. "Quickest Detection of a Dynamic Anomaly in a Sensor Network." *International Workshop on Sequential Methodologies (IWSM)*, Binghampton, NY, June 2019. (**Invited.**)

[C237] M. Bande and V.V. Veeravalli. "Adversarial Multi-User Bandits for Uncoordinated Spectrum Access." In *Proc. IEEE ICASSP*, Brighton, UK, May 2019.

[C236] S. Zou, V.V. Veeravalli, J. Li, D. Towsley, and A. Swami. "Distributed Quickest Detection of Significant Events in Networks." In *Proc. IEEE ICASSP*, Brighton, UK, May 2019. (**Invited.**)

[C235] Y. Bu, J. Lu and V.V. Veeravalli. "Model Change Detection with Application to Machine Learning." In *Proc. IEEE ICASSP*, Brighton, UK, May 2019.

[C234] M. Bande and V.V. Veeravalli. "Multi-User Multi-Armed Bandits for Uncoordinated Spectrum Access." In *Proc. IEEE International Conference on Networking and Communication (ICNC)*, Honolulu, Hawaii, February 2019.

[C233] V.V. Veeravalli. "Quickest Detection of Dynamically Evolving Events in Networks." *Stochastic Control and its Application – Workshop Dedicated to Sean Meyn's 60th Birthday,* Miami Beach, FL, December 2018. (**Invited.**)

[C232] S. Zou, V.V. Veeravalli, J. Li, and D. Towsley. "Quickest Detection of Significant Events in Structured Networks." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2018. (**Invited.**)

[C231] G. Rovatsos, S. Zou, A.D. Dominguez-Garcia and V.V. Veeravalli. "Stochastic Control of Power Supply in Data Centers." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2018.

[C230] A. Deshmukh, S. Bhashyam and V.V. Veeravalli. "Odd Arm Identification with Fixed Confidence." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2018.

[C229] V.V. Veeravalli and S. Zou. "Quickest Detection of Dynamically Evolving Events in Networks." *International Workshop on Applied Probability*, Budapest, Hungary, June 2018. (**Invited.**)

[C228] S. Zou and V.V. Veeravalli. "Quickest Detection of Dynamic Events in Sensor Networks." In *Proc. IEEE ICASSP*, Calgary, Canada, April 2018. (**Invited.**)

[C227] S. Zou and V.V. Veeravalli. "Asymptotic analysis of algorithms for quickest detection of dynamic events." *Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, March 2018. (**Invited.**)

[C226] V.V. Veeravalli. "Quickest Detection of Dynamically Evolving Events in Networks." *ITA workshop*, San Diego, CA, February 2018. (**Invited.**)

[C225] M. Bande and V.V. Veeravalli. "Interference Management and Backhaul Design in Wireless Networks via a DoF Analysis." In *Proc. IEEE International Conference on Communication Systems and Networks (COMSNETS)*, Bengaluru, India, January 2018. (**Invited.**)

[C224] M. Bande and V.V. Veeravalli. "Design of a Heterogeneous Cellular Network with a Wireless Backhaul." In *Proc. IEEE International Conference on Computer Communications and Networks (ICCCN)*, Vancouver, Canada, July-August 2017. (**Invited.**)

[C223] Y. Bu, S. Zou, and V.V. Veeravalli. "Linear-Complexity Exponentially-Consistent Tests for Universal Outlying Sequence Detection." In *Proc. IEEE ISIT*, Aachen, Germany, June 2017.

[C222] S. Zou, G. Fellouris, and V.V. Veeravalli. "Asymptotic Optimality of D-CuSum for Quickest Change Detection under Transient Dynamics." In *Proc. IEEE ISIT*, Aachen, Germany, June 2017.

[C221] J.G. Ligo, G.V. Moustakides and V.V. Veeravalli. "Sparse Gaussian Mixture Detection: Low Complexity, High Performance Tests via Quantization." In *Proc. IEEE ISIT*, Aachen, Germany, June 2017.

[C220] V. V. Veeravalli. "Quickest Change Detection under Transient Dynamics." *International Workshop on Sequential Methodologies (IWSM)*, Rouen, France, June 2017. (**Invited.**)

[C219] G. Fellouris, G.V. Moustakides, and V.V. Veeravalli. "Multistream Quickest Change Detection: Asymptotic Optimality Under a Sparse Signal." In *Proc. IEEE ICASSP*, New Orleans, LA, March 2017. (**Invited.**)

[C218] G. Rovatsos, S. Zou, and V.V. Veeravalli. "Quickest Change Detection Under Transient Dynamics." In *Proc. IEEE ICASSP*, New Orleans, LA, March 2017.

[C217] T.S. Lau, W.P. Tay, and V.V. Veeravalli. "Quickest Change Detection with Unknown Post-Change Distribution." In *Proc. IEEE ICASSP*, New Orleans, LA, March 2017.

[C216] M. Bande, V. V. Veeravalli, A. Tolli, and M. Juntti. "DoF analysis in a Two-Layered Heterogeneous Wireless Interference Network." In *Proc. IEEE ICASSP*, New Orleans, LA, March 2017.

[C215] J.G. Ligo, G.V. Moustakides and V.V. Veeravalli. "Detection of Sparse Mixtures: The Finite Alphabet Case." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2016. (**Invited.**)

[C214] C. Wilson and V.V. Veeravalli. "Adaptive Sequential Learning." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2016. (**Invited.**)

[C213] J. Kaleva, M. Bande, A. Tolli, M. Juntti, and V.V. Veeravalli. "Sum rate maximizing joint processing with limited backhaul and tree topology constraints." in *Proc. IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Edinburgh, UK, July 2016. (**Invited.**)

[C212] G.V. Moustakides and V.V. Veeravalli. "Sequentially Detecting Transitory Changes." In *Proc. IEEE ISIT*, Barcelona, Spain, July 2016.

[C211] C. Wilson and V.V. Veeravalli. "MMSE Estimation in a Sensor Network in the Presence of an Adversary." In *Proc. IEEE ISIT*, Barcelona, Spain, July 2016.

[C210] Y. Bu, S. Zou, Y. Liang, and V.V. Veeravalli. "Estimation of KL Divergence Between Large-Alphabet Distributions." In *Proc. IEEE ISIT*, Barcelona, Spain, July 2016.

[C209] V.V. Veeravalli. "Quickest Detection and Isolation of Line Outages in Power Systems Under Transient Dynamics." *International Workshop on Applied Probability (IWAP),* Toronto, Canada, June 2016. (**Invited.**)

[C208] J. Ligo, G. Moustakides, and V.V. Veeravalli. "Rate Analysis for Detection of Sparse Mixtures." In *Proc. IEEE ICASSP*, Shanghai, China, March 2016.

[C207] Y. Bu, S. Zou, Y. Liang, and V.V. Veeravalli. "Universal Outlying Sequence Detection for Continuous Observations." In *Proc. IEEE ICASSP*, Shanghai, China, March 2016.

[C206] G. Rovatsos, X. Jiang, A. Dominguez-Garcia and V.V. Veeravalli. "Comparison of Statistical Algorithms for Power System Line Outage Detection." In *Proc. IEEE ICASSP*, Shanghai, China, March 2016.

[C205] Y. Li and V.V. Veeravalli "Outlying Sequence Detection in Large Datasets: Comparison of Universal Hypothesis Testing and Clustering." In *Proc. IEEE ICASSP*, Shanghai, China, March 2016.

[C204] C. Wilson and V.V. Veeravalli. "Adaptive Sequential Optimization with Applications to Machine Learning." In *Proc. IEEE ICASSP*, Shanghai, China, March 2016.

[C203] J. Ligo, G. Moustakides, and V.V. Veeravalli. "Rate Analysis for Detection of Sparse Mixtures." *ITA workshop*, San Diego, CA, February 2016. (**Invited.**)

[C202] S. Nitinawarat and V.V. Veeravalli. "Universal Quickest Outlier Detection and Isolation." *Conference on Applied Stochastic Models and Data Analysis (ASMDA)*, Athens, Greece, July 2015. (**Invited.**)

[C201] V.V. Veeravalli. "Quickest Detection and Isolation of Line Outages in Power Systems." Invited presentation at *International Workshop on Sequential Methodologies (IWSM)*, New York, June 2015. (**Invited.**)

[C200] M. Bande, A. El Gamal, and V.V. Veeravalli. "Flexible Backhaul Design with Cooperative Transmission in Cellular Interference Networks." In *Proc. IEEE ISIT*, Hong Kong, June 2015.

[C199] S. Nitinawarat and V.V. Veeravalli. "Universal Quickest Outlier Detection and Isolation." In *Proc. IEEE ISIT*, Hong Kong, June 2015.

[C198] Y. Li, S. Nitinawarat, Y. Su and V.V. Veeravalli. "Universal Outlier Hypothesis Testing: Application to Anomaly Detection." In *Proc. IEEE ICASSP*, Brisbane, Australia, April 2015.

[C197] V.V. Veeravalli. "Flexible Backhaul Design for Cellular Interference Managament." *International Conference on Computing, Networking, and Communications (ICNC)*, Anaheim, CA. February 2015. (**Plenary.**)

[C196] Y. Li, S. Nitinawarat and V.V. Veeravalli. "Universal Outlier Hypothesis Testing." *ITA workshop*, San Diego, CA, February 2015. (**Invited.**)

[C195] S. Nitinawarat and V.V. Veeravalli. "Universal Scheme for Optimal Search and Stop." *ITA workshop*, San Diego, CA, February 2015. (**Invited.**)

[C194] C. Wilson and V.V. Veeravalli. "Learning a Sequence of Slowly Varying Tasks." *ITA workshop*, San Diego, CA, February 2015. (**Invited.**)

[C193] C. Wilson, V.V. Veeravalli and A. Nedic. "Dynamic Stochastic Optimization." In *Proc. IEEE CDC*, Los Angeles, CA, Dec 2014. (**Invited.**)

[C192] V.V. Veeravalli. "Flexible Backhaul Design for 5G Cellular Interference Management." In panel on "Advances in Radio Access for 5G", at the first *5G North America (5GNA)* Workshop, Asilomar, Pacific Grove, CA, November 2014. (**Invited.**)

[C191] Y. Li, S. Nitinawarat and V.V. Veeravalli. "Universal Sequential Outlier Hypothesis Testing." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2014. (**Invited.**)

[C190] V.V. Veeravalli, A. El Gamal and V.S. Annapureddy. "Flexible Backhaul Design for Cellular Interference Management." ACM MobiHoc, Philadelphia, PA, 2014. (**Invited.**)

[C189] Y. Li, S. Nitinawarat and V.V. Veeravalli. "Universal Sequential Outlier Hypothesis Testing." In

Proc. IEEE ISIT, pp. 3205-09, Honolulu, HI, July 2014.

[C188] A. El Gamal and V.V. Veeravalli. "Flexible Backhaul Design and Degrees of Freedom for Linear Interference Networks." In *Proc. IEEE ISIT*, pp. 2694-98, Honolulu, HI, July 2014.

[C187] T. Banerjee and V.V. Veeravalli. "Data-efficient Quickest Change Detection with Unknown Post-change Distribution." In *Proc. IEEE ISIT*, pp. 741-745, Honolulu, HI, July 2014.

[C186] T. Banerjee, Y.C. Chen, A.D. Dominguez-Garcia and V.V. Veeravalli. "Power System Line Outage Detection and Identification – A Quickest Change Detection Approach." In *Proc. IEEE ICASSP*, pp. 3774-78, Florence, Italy, May 2014.

[C185] V.V. Veeravalli. "Universal Outlying Sequence Detection." *IMSE Symposium,* University of Illinois, February 2014. (**Invited.**)

[C184] A. El Gamal and V.V. Veeravalli. "Flexible Backhaul Design and Degrees of Freedom of Linear Interference Networks." *ITA workshop*, San Diego, CA, February 2014. (**Invited.**)

[C183] T. Banerjee and V.V. Veeravalli. "Data-Efficient Quickest Change Detection with Unknown Post Change Distribution." *ITA workshop*, San Diego, CA, February 2014. (**Invited Poster Presentation.**)

[C182] V.V. Veeravalli. "Universal Outlying Sequence Detection." *ITA workshop*, San Diego, CA, February 2014. (**Invited.**)

[C181] V.V. Veeravalli. "Universal Outlier Hypothesis Testing." *Cognition and Control Workshop*, University of Florida, Gainsville, February 2014. (**Invited.**)

[C180] Y. Li, S. Nitinawarat and V.V. Veeravalli. "Universal Multiple Outlier Hypothesis Testing." In *Proc. IEEE CAMSAP Workshop,* St. Martin, December 2013. (**Invited.**)

[C179] M.Kim, J. Ligo, A. Emad, O. Milenkovic and V.V. Veeravalli. "MetaPar: Metagenomic Sequence Assembly via Iterative Reclassification." In *Proc. IEEE GlobalSIP Conference,* Austin, TX, December 2013. (**Invited.**)

[C178] A. ElGamal and V.V. Veeravalli. "Dynamic Interference Management." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2013.

[C177] C. Wilson and V.V. Veeravalli. "Degrees of Freedom for the Constant MIMO Interference Channel with CoMP Transmission." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2013.

[C176] S. Nitinawarat and V.V. Veeravalli. "Controlled Sensing for Sequential Multihypothesis Testing with Non-Uniform Sensing Cost." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2013. (**Invited.**)

[C175] J. Ligo, M.Kim, A. Emad, O. Milenkovic and V.V. Veeravalli. "MCUIUC - A New Framework for Metagenomic Read Compression." In *Proc. IEEE Information Theory Workshop,* Sevilla, Spain, September 2013.

[C174] V.V. Veeravalli. "Controlled Sensing for Multihypothesis Testing." *International Workshop on Sequential Methodologies (IWSM)*, Athens, GA, July 2013. (**Invited.**)

[C173] T. Banerjee and V.V. Veeravalli. "Data-Efficient Quickest Change Detection." *International Workshop on Sequential Methodologies (IWSM)*, Athens, GA, July 2013. (**Invited.**)

[C172] A. Elgamal and V.V. Veeravalli. "Dynamic Interference Management." Poster Presentation at *IEEE ISIT*, Istanbul, Turkey, July 2013

[C171] S. Nitinawarat and V.V. Veeravalli. "Controlled Sensing for Multihypothesis Testing Based on Markovian Observations." In *Proc. IEEE ISIT*, Istanbul, Turkey, July 2013.

[C170] T. Banerjee, V.V. Veeravalli, and A. Tartakovsky. "Decentralized Data-Efficient Quickest Change Detection." In *Proc. IEEE ISIT*, Istanbul, Turkey, July 2013.

[C169] Y. Li, S. Nitinawarat, and V.V. Veeravalli. "Universal Outlier Hypothesis Testing." In *Proc. IEEE*

ISIT, Istanbul, Turkey, July 2013.

[C168] T. Banerjee and V.V. Veeravalli. "Data-Efficient Quickest Change Detection in Distributed and Multi-Channel Systems." In *Proc. IEEE ICASSP*, Vancouver, Canada, May 2013.

[C167] K. Harris and V.V. Veeravalli. "Implementing Energy-Efficient Tracking in a Sensor Network." In *Proc. IEEE ICASSP*, Vancouver, Canada, May 2013.

[C166] J. Ligo, G. Atia and V.V. Veeravalli. "A Controlled Sensing Approach to Graph Classification." In *Proc. IEEE ICASSP*, Vancouver, Canada, May 2013.

[C165] V.V. Veeravalli. "Universal Outlier Hypothesis Testing." In *NSF Workshop on Signal Processing for Big Data*, Arlington, VA, March 2013. (**Invited.**)

[C164] S. Nitinawarat, Y. Li, and V.V. Veeravalli. "Universal Outlier Detection." In *ITA workshop*, San Diego, CA, February 2013. (**Invited.**)

[C163] T. Banerjee and V.V. Veeravalli. "Data-Efficient Quickest Change Detection." In *ITA workshop*, San Diego, CA, February 2013. (**Invited.**)

[C162] A. ElGamal V. S. Annapureddy and V.V. Veeravalli. "Interference Channels with Coordinated Multi-Point (CoMP) transmission." In *ITA workshop*, San Diego, CA, February 2013. (**Invited.**)

[C161] A. Nayyar, T. Basar, D. Teneketsis, and V. V. Veeravalli. "Communication Scheduling and Remote Estimation with Energy Harvesting Sensor." In *Proc. IEEE CDC*, Maui, Hawaii, December 2012.

[C160] T. Banerjee and V.V. Veeravalli, "Energy-Efficient Quickest Change Detection in Sensor Networks." In *Proc. IEEE Statistical Signal Processing (SSP) Workshop*, Michigan, Ann Arbor, August 2012.

[C159] A. El Gamal, V.S. Annapureddy, and V. V. Veeravalli, "Degrees of Freedom (DoF) of Locally Connected Interference Channels with Cooperating Multiple-Antenna Transmitters." In *Proc. IEEE ISIT 2012*, Boston, MA, July 2012.

[C158] G. Atia and V.V. Veeravalli. "Controlled Sensing for Sequential Multihypothesis Testing." In *Proc. IEEE ISIT 2012*, Boston, MA, July 2012.

[C157] V.V. Veeravalli. "Degrees of Freedom of Interference Channels with CoMP Transmission and Reception." *Workshop on Interference in Networks*, Boston, MA, June 2012. (**Invited.**)

[C156] V.V. Veeravalli. "Quickest Change Detection in Sensor Networks." *IEEE Sensor Array and Multichannel (SAM) Signal Processing Workshop*, Hoboken, NJ, June, 2012. (**Plenary Lecture.**)

[C155] T. Banerjee and V.V. Veeravalli. "Data-Efficient Quickest Change Detection." *International Workshop on Sequential Methodologies and Applications (IWSM&A)*, Rouen, France, June 2012. (**Invited.**)

[C154] A. El Gamal, V. S. Annapureddy, and V. V. Veervalli, "Degrees of freedom (DoF) of locally connected interference channels with Coordinated Multi-Point (CoMP) transmission," in Proc. *IEEE International Conference on Communications (ICC)*, Ottawa, June 2012.

[C153] A. El Gamal, V.S. Annapureddy, and V. V. Veeravalli, "DoF of interference channels with CoMP transmission and reception." In *IEEE Communication Theory Workshop*, Maui, Hawaii, May 2012.

[C152] S. Nitinawarat, G. Atia, and V.V. Veeravalli. "Controlled sensing for hypothesis testing." In *Proc. IEEE ICASSP*, Kyoto, Japan, March 2012. (**Invited.**)

[C151] T. Banerjee and V.V. Veeravalli, "Data-efficient minimax quickest change detection. In *Proc. IEEE ICASSP*, Kyoto, Japan, March 2012.

[C150] A. El Gamal, V.S. Annapureddy, and V. V. Veeravalli, "Optimal Message Assignments for the K-User Gaussian Interference Channel with Coordinated Multi-Point (CoMP) Transmission." In *Proc. Conference of Information Sciences and Systems (CISS)*, Princeton, NJ, March 2012.

[C149] S. Nitinawarat, G. Atia, and V.V. Veeravalli. "Controlled sensing for hypothesis testing." In *Proc. ITA workshop*, San Diego, CA, February 2012. (**Invited.**)

[C148] A. Nayyar, T. Başar, D. Teneketzis, and V.V. Veeravalli. "Communication scheduling and remote es-

timation with energy harvesting sensor." In *Proc. ITA workshop*, San Diego, CA, February 2012. (**Invited.**)

[C147] V. V. Veeravalli, V.S. Annapureddy, and A. El Gamal "DoF of interference channels with CoMP transmission and reception." In *ITA workshop*, San Diego, CA, February 2012. (**Invited.**)

[C146] S. Nitinawarat, G. Atia, and V.V. Veeravalli. "Efficient Target Tracking using Mobile Sensors." In *Proc. IEEE CAMSAP 2011*, San Juan, Puerto-Rico, December 2011.

[C145] V.V. Veeravalli. "Sensor Control for Information Collection and Fusion." *International Workshop on Information Fusion*, Xi'an, China, August 2011. (**Plenary Lecture**.)

[C144] C. Wilson and V.V. Veeravalli. "A Convergent Version of Max SINR for the MIMO Interference Channel." In *Proc. IEEE ISIT 2011*, St. Petersburg, Russia, August 2011.

[C143] V.S. Annapureddy, A. El Gamal and V. V. Veeravalli. "Degrees of Freedom of Cooperative Interference Networks." In *Proc. IEEE ISIT 2011*, St. Petersburg, Russia, August 2011.

[C142] V.V. Veeravalli and T. Banerjee. "Quickest Change Detection with On-Off Observation Control." *International Workshop in Sequential Methodologies,* Palo Alto, CA, June 2011. (**Invited.**)

[C141] G. Atia and V.V. Veeravalli. "Sensor management for energy-efficient tracking in cluttered environments." In *Proc. ITA workshop, UCSD*, San Diego, CA, February 2011. (**Invited.**)

[C140] T. Banerjee and V.V. Veeravalli. "Bayesian Quickest Change Detection Under Energy Constraints." In *Proc. ITA workshop, UCSD*, San Diego, CA, February 2011. (**Invited.**)

[C139] G.K. Atia, V.V. Veeravalli and J.A. Fuemmeler. "Sensor scheduling for energy-efficient target tracking in sensor networks." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2010.

[C138] K. Premkumar, A. Kumar and V.V. Veeravalli. "Bayesian Quickest Transient Change Detection." In *Proc. International Workshop on Applied Probability,* Madrid, Spain, July 2010. (**Invited.**)

[C137] J. Unnikrishnan, S. Meyn and V.V. Veeravalli. "On Thresholds for Robust Goodness-of-Fit Tests. In *Proc. Information Theory Workshop*, Dublin, Ireland, August 2010.

[C136] V.S. Annapureddy, A. El Gamal and V. V. Veeravalli. "Degrees of freedom of the K-user interference channel with transmitter cooperation." In *Proc. IEEE ISIT*, Austin, Texas, June 2010.

[C135] V. Ragahavan, V.V. Veeravalli and S. Hanly. "Linear Beamforming for the Spatially Correlated MISO broadcast channel." In *Proc. IEEE ISIT*, Austin, Texas, June 2010.

[C134] R. Tandra, A. Sahai and V.V. Veeravalli. "Space-Time Metrics for Spectrum Sensing." In *Proc. IEEE DYSPAN*, Singapore, April 2010.

[C133] S.S. Ram, V.V. Veeravalli and A. Nedic. "Distributed stochastic optimization and its application to estimation in sensor networks." In *Proc. ITA workshop, UCSD*, San Diego, CA, February 2010. (**Invited.**)

[C132] J. Unnikrishnan, V.V. Veeravalli and S.P. Meyn. "Minimax robust quickest change detection." In *Proc. ITA workshop, UCSD*, San Diego, CA, February 2010. (**Invited.**)

[C131] V.S. Annapureddy and V. V. Veeravalli. "Sum Capacity of MISO and SIMO Interference Channels." In *Proc. IEEE ITW*, Cairo, Egypt, January 2010. (**Invited.**)

[C130] S. S. Ram, A Nedic and V. V. Veeravalli, "Asynchronous Gossip Algorithms for Stochastic Optimization." In *Proc. IEEE Conference on Decision and Control (CDC)*, Shanghai, China, December 2009. (**Invited.**)

[C129] V. Raghavan, M.L. Honig and V.V. Veeravalli. "Performance analysis of RVQ-based limited feedback beamforming codebooks." In *Proc. IEEE ISIT*, Seoul, South Korea, August 2009.

[C128] V. Raghavan and V.V. Veeravalli. "Bayesian quickest change process detection." In *Proc. IEEE ISIT*, Seoul, South Korea, August 2009.

[C127] J. Unnikrishnan, V.V. Veeravalli and S.P. Meyn. "Least favorable distributions for robust quickest change detection." In *Proc. IEEE ISIT*, Seoul, South Korea, August 2009.

[C126] D. Huang, J. Unnikrishnan, S.P. Meyn and V.V. Veeravalli and A. Surana. "Statistical SVMs for robust detection, supervised learning, and universal classification." *In Proc. IEEE ITW*, Volos, Greece, June 2009. (**Invited.**)

[C125] V.S. Annapureddy, V. V. Veeravalli and S. Vishwanath. "Sum Capacity of Gaussian MIMO Interference Channels in the Low Interference Regime." *IEEE Communication Theory Workshop*, Napa, CA, May 2009. (**Invited.**)

[C124] S. S. Ram, A Nedic and V. V. Veeravalli, "Asynchronous Gossip Algorithms for Stochastic Optimization." In *Proc. IEEE GamesNets*, Instanbul, Turkey, May 2009

[C123] S. S. Ram, A Nedic and V. V. Veeravalli, "Distributed subgradient projection algorithm for convex optimization." In *Proc. IEEE ICASSP*, Taipei, Taiwan, April 2009.

[C122] S. S. Ram, V. V. Veeravalli and A. Nedic, "Distributed Non-Autonomous Power Control through Distributed Convex Optimization," In *Proc. IEEE INFOCOM*, Rio de Janeiro, April 2009

[C121] V.S. Annapureddy, V. V. Veeravalli and S. Vishwanath. "Sum capacity of MIMO interference channels in the low interference regime." In *Proc. ITA workshop, UCSD*, San Diego, CA, February 2009. (**Invited.**)

[C120] D. Huang, J. Unnikrishnan, S.P. Meyn and V.V. Veeravalli and A. Surana. "Statistical SVMs for robust detection and universal classification." In *Proc. ITA workshop, UCSD*, San Diego, CA, February 2009. (**Invited.**)

[C119] V. Ragahavan and V.V. Veeravalli. "Limited feedback for spatially correlated MISO broadcast channels." In *Proc. ITA workshop, UCSD*, San Diego, CA, February 2009. (**Invited.**)

[C118] V.S. Annapureddy and V. V. Veeravalli. "Capacity of Gaussian Interference Networks in the Noisy Interference Regime." In *Proc. WISARD*, Bangalore, India, January 2009. (**Invited.**)

[C117] J. Unnikrishnan and V.V. Veeravalli. "Dynamic Spectrum Access Policies for Cognitive Radio." In *Proc. IEEE CDC*, Cancun, Mexico, December 2008. (**Invited.**)

[C116] V.S. Annapureddy, V. V. Veeravalli and S. Vishwanath. "On the Sum Capacity of MIMO Interference Channel in the Low Interference Regime." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2008. (**Invited.**)

[C115] D. Huang, V. Raghavan, A. Poon, V.V. Veeravalli. "Angular Domain Processing for MIMO Wireless Systems with Non-uniform Antenna Arrays." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2008. (**Invited.**)

[C114] V. Raghavan and V.V. Veeravalli. "Codebook Design for the Spatially Correlated MISO Broadcast Channel." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2008. (**Invited.**)

[C113] J. Unnikrishnan and V.V. Veeravalli. "Dynamic Spectrum Access with Learning for Cognitive Radio." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2008. (**Invited.**)

[C112] V.V. Veeravalli and J. Fuemmeler. "Energy-Efficient Multi-Target Tracking Using Sensor Networks." Army Conference on Applied Statistics (ACAS), Lexington, VA, October 2008. (**Invited.**)

[C111] S.S. Ram, V.V. Veeravalli and A. Nedic. "Incremental Recursive Prediction Error Algorithm for Parameter Estimation in Sensor Networks." In *Proc. IEEE Fusion*, Cologne, Germany, July 2008. (**Invited.**)

[C110] V. Raghavan and V.V. Veeravalli. "Quickest Detection of a Change Process Across a Sensor Array." In *Proc. IEEE Fusion*, Cologne, Germany, July 2008. (**Invited.**)

[C109] V. Raghavan, A. Sayeed and V.V. Veeravalli. "Structured Statistical Precoding for Correlated MIMO Channels." In *Proc. IEEE ISIT*, Toronto, Canada, July 2008.

[C108] V.S. Annapureddy and V. V. Veeravalli, "Gaussian Interference Networks: Sum Capacity in the Low Interference Regime." In *Proc. IEEE ISIT*, Toronto, Canada, July 2008.

[C107] V. Raghavan, A. Poon and V.V. Veeravalli. "Non-Robustness of Statistics-Based Beamformer Design in Correlated MIMO Channels." In *Proc. IEEE ICASSP,* Las Vegas, NV, April 2008.

[C106] C. Lin, V. Raghavan and V.V. Veeravalli. "Limited Feedback Space-Time Coding in Correlated MIMO Channels." In *Proc. CISS,* Princeton, NJ, March 2008.

[C105] V. Raghavan, C. Lin and V.V. Veeravalli. "Impact of Spatial Correlation on Limited Feedback Techniques." In *Proc. ITA workshop, UCSD*, San Diego, CA, February 2008. (**Invited.**)

[C104] V. S. Annapureddy and V. V. Veeravalli, "Sum Capacity of the Gaussian Interference Channel in the Low Interference Regime." In *Proc. ITA workshop, UCSD*, San Diego, CA, February 2008. (**Invited.**)

[C103] J. Fuemmeler and V.V. Veeravalli. "Sensor Scheduling for Effective and Energy Efficient Tracking in Sensor Networks." In *Proc. IEEE CDC,* New Orleans, LA, December 2007. (**Invited.**)

[C102] S.S. Ram, V.V. Veeravalli and A. Nedic. "Stochastic Incremental Gradient Descent for Estimation in Sensor Networks." In *Proc. IEEE CAMSAP*, St. Thomas, US Virgin Islands, December 2007. (**Invited.**)

[C101] C. Lin, V. Raghavan and V.V. Veeravalli. "Optimal Power Allocation for Linear Dispersion Codes over Correlated MIMO Channels with Channel State Feedback." In *Proc. IEEE Globecom*, Washington, DC, November 2007.

[C100] J. Unnikrishnan and V.V. Veeravalli. "Cooperative Spectrum Sensing and Detection for Cognitive Radio." In *Proc. IEEE Globecom*, Washington, DC, November 2007.

[C99] S.S. Ram and V.V. Veeravalli. "Localization and Intensity Tracking of Diffusing Point Sources Using Sensor Networks." In *Proc. IEEE Globecom*, Washington, DC, November 2007.

[C98] J. Unnikrishnan and V.V. Veeravalli. "Decentralized Detection with Correlated Observations." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2007. (**Invited.**)

[C97] S.S. Ram, A. Nedic, and V.V. Veeravalli. "Stochastic Incremental Gradient Descent for Estimation in Sensor Networks." In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2007.

[C96] V. Raghavan, A. Poon and V.V. Veeravalli. "MIMO Systems with Arbitrary Antenna Array Architectures: Channel Modeling, Capacity and Low-Complexity Signaling" In *Proc. IEEE Asilomar Conference on Signals, Systems and Computers,* Pacific Grove, CA, November 2007.

[C95] V.V. Veeravalli and J. Fuemmeler. "Joint Optimization of Smart Sleeping and Cooperative Localization Strategies for Energy-Efficient Tracking in Sensor Networks." In *Proc. 56th Session of the International Statistical Institute (ISI)*, Lisbon, Portugal, August 2007. (**Invited.**)

[C94] V.V. Veeravalli and A.G. Tartakovsky. "Quickest Change Detection in Sensor Networks." *International Workshop on Sequential Methodologies,* Auburn, AL, July 2007. (**Invited.**)

[C93] V. Raghavan and V.V. Veeravalli and R. Heath. "Reduced Rank Signaling in Spatially Correlated MIMO Channels." In *Proc. IEEE ISIT*, Nice, France, June 2007.

[C92] V. Raghavan and V.V. Veeravalli. "On Quantized Multiuser Beamforming in Spatially Correlated Broadcast Channels." In *Proc. IEEE ISIT*, Nice, France, June 2007.

[C91] V.V. Veeravalli. "System-Theoretic Foundations for Sensor Networks." *IEEE Communication Theory Workshop*, Sedona, AZ, May 2007. (**Keynote Lecture.**)

[C90] S.S. Ram and V.V. Veeravalli. "Localization and Intensity Tracking of Diffusing Sources." Netted Sensors (NS) Workshop, McLean, VA, May 2007. (**Invited.**)

[C89] C. Lin and V.V. Veeravalli. "A Limited Feedback Scheme for Linear Dispersion Codes over Correlated MIMO Channels." In *Proc. IEEE ICASSP,* Honolulu, HI, April 2007.

[C88] V. Raghavan and V.V. Veeravalli, "Limited Feedback Precoder Design for Spatially Correlated MIMO Channels." In *Proc. CISS,* Baltimore, MD, March 2007.

[C87] J. Fuemmeler and V.V. Veeravalli. "Smart Sleeping Strategies for Localization and Tracking in Sensor Networks." In *Proc. 40th Asilomar Conference on Signals, Systems, and Computers,* Monterey, CA, November 2006. (**Invited.**)

[C86] J. Chen and V.V. Veeravalli. "Capacity Results for Block-Stationary Gaussian Fading Channels." In *Proc. IEEET ISIT*, Seattle, WA, June 2006.

[C85] V.V. Veeravalli. "System-Theoretic Foundations for Sensor Networks." *IWWAN*, New York, NY, June 2006. (**Keynote Lecture.**)

[C84] V.V. Veeravalli. "Smart Sleeping Policies for Wireless Sensor Networks." NSF Workshop on Future Directions in Networked Sensing, Boston, MA, May 2006. (**Invited.**)

[C83] V.V. Veeravalli and J. Fuemmeler. "Efficient Tracking in a Network of Sleepy Sensors." In *Proc. IEEE ICASSP,* Toulouse, France, May 2006. (**Invited.**)

[C82] C. Lin and V.V. Veeravalli. "Optimal Linear Dispersion Codes for Correlated MIMO Channels." In *Proc. CISS,* Princeton, NJ, March 2006.

[C81] V.V. Veeravalli and S.P. Meyn. "Asymptotic Robust Hypothesis Testing Based on Moment Classes." In *Proc. UCSD ITA Inaugural Workshop,* San Diego, CA, February 2006. (**Invited.**)

[C80] V.V. Veeravalli, A. Visvanathan and J. Fuemmeler. "Tracking with Sleepy Sensors" In *Proc. 39th Asilomar Conference on Signals, Systems, and Computers,* Monterey, CA, November 2005. (**Invited.**)

[C79] V.V. Veeravalli. "Design of Sensor Systems with Fusion for Detection Applications." Netted Sensors (NS) Workshop, McLean, VA, October 2005. (**Invited.**)

[C78] A. Visvanathan and V.V. Veeravalli. "Sleeping Policies for Energy Efficient Tracking in Sensor Networks." In *IEEE Proc. Statistical Signal Processing Workshop,* Bordeaux, France, July 2005. (**Invited.**)

[C77] Y. Liang and V.V. Veeravalli. "Cooperative relay broadcast channels." In *Proc. IEEE WirelessCom, Symposium on Information Theory,* Hawaii, June 2005. (**Invited.**)

[C76] Y. Liang and V.V. Veeravalli. "Distributed optimal resource allocation for fading relay broadcast channels." In *Proc. IEEE International Workshop on Signal Processing Advances for Wireless Communications* (SPAWC'05), New York, NY, June 2005.

[C75] W. Zha and V.V. Veeravalli. "Analysis of Ricean MIMO Channels Based on A Virtual Channel Representation." In *Proc. IEEE ICASSP,* Philadelphia, PA, March 2005.

[C74] J.-F. Chamberland and V.V. Veeravalli. "How Dense Should a Sensor Network be for Detection Applications?" In *Proc. IEEE ICASSP,* Philadelphia, PA, March 2005. (**Invited.**)

[C73] Y. Liang and V.V. Veeravalli. "Resource Allocation for Wireless Relay Channels." In *Proc. 38th Asilomar Conference on Signals, Systems, and Computers,* Monterey, CA, November 2004. (**Invited.**)

[C72] J.-F. Chamberland and V.V. Veeravalli. "Design of Sensor Networks for Detection Applications via Large Deviation Theory." In *Proc. IEEE Information Theory Workshop,* San Antonio, TX, October 2004.

[C71] S. Meyn, V.V. Veeravalli and C. Pandit. "Extremal Distributions in Information Theory and Hypothesis Testing." In *Proc. IEEE Information Theory Workshop,* San Antonio, TX, October 2004. (**Invited.**)

[C70] J.-F. Chamberland and V.V. Veeravalli. "Decentralized Detection in Wireless Sensor Systems with Dependent Observations." In *Proc. International Conference on Computing, Communications and Control Technologies (CCCT),* Austin, TX, August 2004. (**Invited.**)

[C69] J.-F. Chamberland and V.V. Veeravalli. "Adaptive Signaling Schemes for Detection in Wireless Sensor Networks." In *Proc. IEEET ISIT*, Chicago, IL, June 2004.

[C68] Y. Liang and V.V. Veeravalli. "The Impact of Relaying on the Capacity of Broadcast Channels." In *Proc. IEEE ISIT*, Chicago, IL, June 2004.

[C67] C. Pandit, S. Meyn and V.V. Veeravalli. "Asymptotic Robust Neyman-Pearson Testing Based on Moment Classes." In *Proc. IEEE ISIT*, Chicago, IL, June 2004.

[C66] J.-F. Chamberland and V.V. Veeravalli. "The Impact of Fading on Decentralized Detection in Power Constrained Wireless Sensor Networks." In *Proc. IEEEE ICASSP,* Montreal, Canada, May 2004. (**Invited.**)

[C65] Y. Liang and V.V. Veeravalli. "Gaussian Frequency Division Relay Channels: Optimal Bandwidth Allocation and Capacity." In *Proc. CISS,* Princeton, NJ, March 2004.

[C64] Y. Liang and V.V. Veeravalli. "Correlated MIMO Rayleigh Fading Channels: Capacity and Optimal Signaling." In *Proc. 37th Asilomar Conference on Signals, Systems, and Computers,* Monterey, CA, November 2003.

[C63] R. Prakash and V.V. Veeravalli. "The Effect of Service Variability on Centralized Wireless Systems." In *Proc. 2nd IASTED International Conference on Communications, Internet,& Information Technology (CIIT 03),* Scottdale, Arizona, November 2003. (**Invited.**)

[C62] J.-F. Chamberland and V.V. Veeravalli. "The Art of Sleeping in Wireless Sensing Systems." In *Proc. IEEE Workshop on Statistical Signal Processing,* St. Louis, MO, September 2003. (**Invited.**)

[C61] S. Appadwedula, D.L. Jones and V.V. Veeravalli. "Energy-Efficient Detection in Sensor Networks." In *Proc. IEEE Fusion Conference,* Cairns, Australia, July 2003. (**Invited.**)

[C60] V.V. Veeravalli and A.G. Tartakovsky. "Quickest Change Detection in Distributed Sensor Systems." In *Proc. IEEE Fusion Conference,* Cairns, Australia, July 2003. (**Invited.**)

[C59] V.V. Veeravalli, A.M. Sayeed and Y. Liang. " Asymptotic Capacity of Correlated MIMO Rayleigh Fading Channels via Virtual Representation." In *Proc. IEEE ISIT 2003*, Yokohama, Japan, June-July 2003.

[C58] R. Prakash and V.V. Veeravalli. "The Impact of Fading on Wireless Systems with Incremental Redundancy." In *Proc. IEEE ISIT 2003*, Yokohama, Japan, June-July 2003.

[C57] J.-F. Chamberland and V.V. Veeravalli. "Asymptotic Results for Power Constrained Wireless Sensor Networks." In *Proc. IEEE ISIT 2003*, Yokohama, Japan, June-July 2003.

[C56] V.V. Veeravalli and R. Prakash. "Uplink Analysis of Cellular Packet Data Systems with Multiantenna Reception." In *Proc. IEEE International Workshop on Multimedia Signal Processing,* St. Thomas, US Virgin Islands, December 2002. (**Invited.**)

[C55] A.M. Sayeed and V.V. Veeravalli. "Essential Degrees of Freedom in Time and Frequency Selective MIMO Channels." In *Proc. IEEE WPMC*, Honolulu, Hawaii, October 2002. (**Invited.**)

[C54] A.G. Tartakovsky and V.V. Veeravalli. "Asymptotics of Quickest Change Detection Procedures Under a Bayesian Criterion." In *Proc. Information Theory Workshop,* Bangalore, India, October 2002. (**Invited.**)

[C53] A.M. Sayeed and V.V. Veeravalli. "The Essential Degrees of Freedom in Space-Time Fading Channels." In *Proc. PIMRC'02,* Lisbon, Portugal, September 2002.

[C52] R. Prakash and V.V. Veeravalli. "Traffic Load Based Reverse Link Power Allocation for Cellular Packet Data Systems." In *Proc. IEEE Vehicular Technology Conference,* Vancouver, BC, September 2002.

[C51] V.V. Veeravalli and R. Prakash. "Design and Analysis of Cellular Packet Data Systems Using Time-Scale Separation." In *Proc. IEEE International Symposium on Advances in Wireless Communications (ISWC),* Victoria, BC, September 2002. (**Invited.**)

[C50] S. Appadwedula, V.V. Veeravalli, and D.L. Jones. "Locally-Optimum and Robust Decentralized Detection with Censoring Sensors." In *Proc. IEEE Fusion 2002*, Annapolis, MD, July 2002. (**Invited.**)

[C49] A.G. Tartakovsky and V.V. Veeravalli. "Change-Point Detection in Multichannel and Distributed Systems With Applications." In *Proc. IEEE Fusion 2002*, Annapolis, MD, July 2002. (**Invited.**)

[C48] R. Prakash and V.V. Veeravalli. "A Time-Scale Separation Technique for the Analysis of Random Access Systems with Incremental Redundancy." In *Proc. IEEE ISIT 2002*, Lausanne, Switzerland, June-July 2002.

[C47] Y. Liang and V.V. Veeravalli. "Capacity of Noncoherent Time-Selective Block Rayleigh Flat-Fading Channels." In *Proc. IEEE ISIT 2002*, Lausanne, Switzerland, June-July 2002.

[C46] V.V. Veeravalli and A.G. Tartakovsky. "Asymptotic Analysis of Bayesian Quickest Change Detection Procedures." In *Proc. IEEE ISIT 2002*, Lausanne, Switzerland, June-July 2002.

[C45] A. Mantravadi and V.V. Veeravalli. "Sum Capacity of CDMA Systems with Multiple Transmit Antennas." In *Proc. IEEE ISIT 2002*, Lausanne, Switzerland, June-July 2002.

[C44] R. Prakash and V.V. Veeravalli. "Wireless Packet Data Systems with Incremental Redundancy – Uplink Analysis." In *Proc. CISS 2002*, Princeton, NJ, March 2002.

[C43] J.-F. Chamberland and V.V. Veeravalli. "Decentralized Detection in Wireless Sensor Networks." In *Proc. CISS 2002*, Princeton, NJ, March 2002.

[C42] A. Mantravadi, V.V. Veeravalli and H. Viswanathan. "Design Considerations for the Uplink of Cellular Systems with Multiple Antennas." In *Proc. 35th Asilomar Conference on Signals, Systems, and Computers,* Monterey, CA, November 2001. (**Invited.**)

[C41] V.V. Veeravalli. "Wideband Multiantenna Wireless Channels: Statistical Modeling, Analysis and Simulation." Tutorial at *IEEE Vehicular Technology Conference,* Atlantic City, NJ, October 2001. (**Invited**.)

[C40] J.-F. Chamberland and V.V. Veeravalli. "Decentralized Dynamic Power Control for Cellular Spread Spectrum Systems." In Proc *ITCOM Conference on Modeling and Design of Wireless Networks* Denver, August 2001. (**Invited**.)

[C39] A. Mantravadi and V.V. Veeravalli. "Asymptotic analysis of MMSE detection in asynchronous CDMA systems: An equivalence result." In *Proc. IEEE ISIT 2001*, Washington DC, June 2001.

[C38] A. Mantravadi, V.V. Veeravalli and H. Viswanathan. "Design Aspects of Multiantenna CDMA systems with random sequences." In *Proc. CISS 2001*, Baltimore, MD, March 2001.

[C37] R. Prakash, V.V. Veeravalli and V. Tripathi. "Analysis of Code Division Random Multiple Access Systems with Packet Combining." In *Proc. 34th Asilomar Conference on Signals, Systems, and Computers,* Monterey, CA, November 2000. (**Invited.**)

[C36] A. Mantravadi and V.V. Veeravalli. "The Coding-Spreading Trade-off for CDMA Systems with Frequency Selective Fading." Presented in the new results session at *IEEE ISIT 2000*, Sorrento, Italy, June 2000.

[C35] M. Motani, V.V. Veeravalli and C. Heegard. "On Capacity and Spreading in CDMA Systems." In *Proc. IEEE ISIT 2000*, Sorrento, Italy, June 2000.

[C34] J.-F. Chamberland and V.V. Veeravalli. "Optimal Dynamic Power Control for CDMA Systems." In *Proc. IEEE ISIT 2000*, Sorrento, Italy, June 2000.

[C33] V. Tripathi, A. Mantravadi and V.V. Veeravalli. "MAI Resistant Channel Acquisition for Wideband CDMA Signals." *In Proc. IEEE VTC2000-Spring,* Tokyo, Japan, May 2000.

[C32] R. Prakash and V.V. Veeravalli. "Locally Optimal Soft Handoff Algorithm." *In Proc. IEEE VTC2000-Spring,* Tokyo, Japan, May 2000.

[C31] M. Motani and V.V. Veeravalli. "The Coding-Spreading Tradeoff in CDMA Systems with Convolutional Codes and Direct Sequence Spreading." In *Proc. CISS 2000*, Princeton, NJ, March 2000. (**Invited.**)

[C30] M. Motani, V.V. Veeravalli and C. Heegard. "The Capacity Loss Due to Spreading." *Proc. 2nd International Conference on Information, Communications and Signal processing (ICICS)*, Singapore, December 1999.

[C29] A. Mantravadi and V.V. Veeravalli. "On Discrete Sufficient Statistics for Acquisition in Band-limited CDMA Systems." *Proc. 27th Annual Allerton Conference,* Monticello, IL, September 1999.

[C28] V.V. Veeravalli. "The Coding-Spreading Tradeoff in CDMA Systems." *Proc. 27th Annual Allerton Conference,* Monticello, IL, September 1999. (**Invited.**)

[C27] V.V. Veeravalli. "Time Varying Channel Models for Wireless Systems." Tutorial at *IEEE Vehicular Technology Conference,* Houston, TX, May 1999. (**Invited**.)

[C26] V.V. Veeravalli and A. Mantravadi. "Performance Analysis for Diversity Reception of Linearly Modulated Signal over Correlated Fading Channels." *Proc. 1999 Vehicular Technology Conference,* Houston, TX, May 1999.

[C25] R. Prakash and V.V. Veeravalli. "Adaptive Hard Handoff Algorithms." *Proc. 1999 Vehicular Technology Conference,* Houston, TX, May 1999.

[C24] A. Mantravadi and V.V. Veeravalli. "On Discrete Sufficient Statistics for Detection in Asynchronous Band-limited CDMA Systems." *Proc. 33rd Annual Conference on Information Sciences and Systems,* Baltimore, MD, March 1999.

[C23] V.V. Veeravalli, A.G. Tartakovsky and V. Dragalin. "Multihypothesis Sequential Probability Ratio Tests." *Proc. 1999 Information Theory Workshop on Detection, Estimation, Classification and Imaging (DECI),* Santa Fe, NM, February, 1999. (**Invited**.)

[C22] R. Prakash and V.V. Veeravalli. "Accurate Performance Analysis of Hard Handoff Algorithms." *Proc. 9th IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC),* Boston, MA, September 1998.

[C21] V.V. Veeravalli, A.G. Tartakovsky and V. Dragalin. "Asymptotic Analysis of Multihypothesis Sequential Probability Ratio Tests." *Proc. 1998 IEEE International Symposium on Information Theory,* Boston, MA, August, 1998.

[C20] A. Mantravadi and V.V. Veeravalli. "Multiple-Access Interference Resistant Acquisition for CDMA Systems with Long Spreading Sequences." *Proc. 32nd Annual Conference on Information Sciences and Systems,* Princeton, NJ, March 1998.

[C19] V.V. Veeravalli. "The Role of Coding in CDMA Systems with Multiuser Detection." *Proc. 1997 IEEE International Conference on Personal Wireless Communications (ICPWC'97),* Mumbai, India, December 1997.

[C18] A. Sendonaris and V.V. Veeravalli. "The Capacity-Coverage Tradeoff in CDMA Systems with Soft Handoff." *Proc. 1997 Asilomar Conference on Signals, Systems, and Computers,* Monterey, CA, November 1997.

[C17] V.V. Veeravalli. "Further Results on Decentralized Change Detection." *Proc. 1997 IEEE International Symposium on Information Theory,* Ulm, Germany, June-July, 1997.

[C16] V.V. Veeravalli, A. Sendonaris and N. Jain. "CDMA Coverage, Capacity and Pole Capacity." *Proc. 47th IEEE Vehicular Technology Conference,* Phoenix, AZ, May 1997.

[C15] V.V. Veeravalli. "Sequential Decision Fusion: Theory and Applications." *Proc. Workshop on Foundations of Information/Decision Fusion: Applications to Engineering Problems,* pp. 200-205, Washington, D.C., August 1996.

[C14] V.V. Veeravalli and B. Aazhang. "On the Coding-Spreading Tradeoff in CDMA Systems." *Proc. 30th Annual Conference on Information Sciences and Systems,* pp. 1136-1141, Princeton, NJ, March 1996.

[C13] M.Landolsi, V.V. Veeravalli and N.Jain. "New Results on the Reverse Link Capacity of CDMA Cellular Networks." *Proc. 46th IEEE Vehicular Technology Conf.,* pp. 1462-1466, Atlanta, GA, April 1996.

[C12] A.Sendonaris, V.V. Veeravalli and B. Aazhang, "Signaling Strategies for Maximizing the Capacity on Twisted Pairs." *Proc. 33rd Annual Allerton Conference,* Monticello, IL, October 1995.

[C11] O.E. Kelly and V.V. Veeravalli. "A Locally Optimal Handoff Algorithm." *Proc. 6th IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC),* 809-813, Toronto, Canada, September 1995.

[C10] V.V. Veeravalli. "Decentralized Quickest Change Detection." *Proc. 1995 IEEE International Symposium on Information Theory,* p. 294, Whistler, BC, Canada, September 1995.

[C9] V.V. Veeravalli and C.W. Baum. "Sequential Multihypothesis Testing with Nonuniform Costs and Applications in Hybrid Serial Search." *Proc. 1994 IEEE International Symposium on Information Theory,*

p. 256, Trondheim, Norway, June 1994.

[C8] C.W. Baum and V.V. Veeravalli. "Hybrid Acquisition in Direct Sequence CDMA Systems." *Proc. 1994 IEEE International Conference on Communications,* 1433-1437, New Orleans, LA, May 1994.

[C7] V.V. Veeravalli and C.W. Baum. "New Results in M-ary Sequential Hypothesis Testing." *Proc. 27th Annual Conference on Information Sciences and Systems,* Baltimore, MD, March 1993.

[C6] Y.C. Ho, V.V. Veeravalli and A. Lin. "Ordinal Optimization: Concepts and Results." *SIAM Conference on Simulation and Computational Probability,* San Francisco, CA, August 1993.

[C5] V.V. Veeravalli, H.V. Poor and T. Başar. "Decentralized Sequential Detection with a Fusion Center Performing the Sequential Test." *Proc. American Control Conf.,* pp. 1177-1181, Chicago, IL, June 1992.

[C4] V.V. Veeravalli, T. Başar and H.V. Poor. "Minimax Robust Decentralized Detection." *Proc. 26th Annual Conference on Information Sciences and Systems,* Princeton, NJ, March 1992.

[C3] V.V. Veeravalli, T. Başar and H.V. Poor. "The Decentralized Wald Problem with a Nonlinear Penalty on Stopping Times." *Proc. 25th Annual Conf. Inform. Sciences and Systems ,* Baltimore, MD, March 1991.

[C2] V.V. Veeravalli and H.V. Poor. "Quadratic Detection of Lorentzian Signals." In *Proc. 24th Annual Conference on Information Sciences and Systems,* Princeton, NJ, March 1990.

[C1] S.V. Veeravalli and V.V. Veeravalli. "Higher Order Spectra of Turbulent Velocity Fluctuations." *Proc. 42nd Annual Meeting of the Division of Fluid Dynamics of the American Physical Society,* 1989.

PATENTS

- V.V. Veeravalli, A. Mantravadi, T. Kadous, and J. Linsky. "Method and Apparatus for Event Prioritization and Arbitration in a Multi-Radio Device." Awarded January 13, 2011. U.S. Patent No. 20110007688.
- T. Kadous, A. Mantravadi, V.V. Veeravalli, C. Bergen, J. Linsky, R. Wietfeldt, and G. Chriskos. "Centralized Coexistence Manager for Controlling Operation of Multiple Radios." Awarded December 30 2010, U.S. Patent No. 20100330977.
- P. Dayal and V.V. Veeravalli "Method and Apparatus for Assigning Priorities to Composite Events." Awarded December 11, 2012, U.S. Patent No. 8332855.
- V. V. Veeravalli, A. Sendonaris, N. Jain and S. M. Peddy. "Method and Apparatus for designing Soft Handoff Regions in a Communications System." Awarded December 26, 2000. U.S. Patent No. 6,167,035.
- V. V. Veeravalli, A. Sendonaris, and N. Jain. "Accurate Calculations of the Probability Of Outage for the CDMA Reverse Link." Awarded August 1, 2000. U.S. Patent No. 6,097,956.
- C. Yu, S. Subramanian, A. Sendonaris, S. Lin, M. Landolsi, N. Jain, S. Madhavapeddy, S. Tseng, and V. V. Veeravalli. "Method for optimizing cell-site placement." Awarded July 25, 2000. U.S. Patent No. 6,094,580.
- A. Sendonaris, V. V. Veeravalli, M. Landolsi and A. Daraiseh. "Forward Link Power Control in a Cellular Radiotelephone System." Awarded July 4, 2000. U.S. Patent No. 6,085,106.

EXTERNAL RESEARCH FUNDING

Current Research Funding

- "Collaborative Research: CIF: Medium: Emerging Directions in Robust Learning and Inference." *National Science Foundation.* (Led by Veeravalli, with G. Atia (UCF) and S. Zou (Buffalo).) June 1, 2021 – May 31, 2026. Total funding: $1.2 million.
- "Alliance for IoBT Research on Evolving Intelligent Goal-driven Networks (IoBT REIGN)." *Army Research Lab.* (Team led by T. Abdelzaher.) September 14, 2017 – September 13, 2027. Veeravalli's portion of funding: approximately $300K/year.

Past Research Funding

- "Private cyber-secure data-driven control of distributed energy resources." *C3.ai Digital Transformation Institute.* (With S. Bose (lead), A. Dominguez-Garcia, and T. Basar.) 2021- 2025. Total funding: $250K
- "Efficient Strategies for Pandemic Monitoring and Recovery." *National Science Foundation.* (Led by Veeravalli, with L. Varshney), September 15, 2020 – September 14, 2024. Total Funding: $360K
- "Robust Quickest Detection of Anomalies in Heterogeneous Sensor Networks." *Sandia National Lab*. October 1, 2020 – September 30, 2021. Total Funding: $100K
- "CIF: Small: Collaborative Research: Network Event Detection with Multistream Observations." *National Science Foundation.* (Led by Veeravalli, with Y. Liang (Syracuse).) August 1, 2016 – July 31, 2021. Total funding:$500K.
- "SpecEES: Collaborative Research: Energy Efficient Dynamic Spectrum Access in Uncoordinated Networks." *National Science Foundation.* (with B. Chen (Syracuse).) August 1, 2017 – July 31, 2020. Veeravalli's portion of funding: $275K.
- "CIF: Medium: Collaborative Research: Quickest Change Detection Techniques with Signal Processing Applications." *National Science Foundation.* (Led by Veeravalli, with G. Fellouris (Illinois) and G. Moustakides (Rutgers).) August 1, 2015 – July 31, 2020. Total funding: $1.2 million.
- "Dynamic Data Driven Information Fusion For Situational Awareness," *Air Force Office of Scientific Research*. (B. Chen, Syacuse (lead).) April 15, 2016 – April 14, 2020. Veeravalli's portion of funding: $240K.
- "EAGER-DynamicData: A Scalable Framework for Data Driven Real-Time Event Detection in Power Systems," *National Science Foundation.* (With A. Dominguez-Garcia.) September 1, 2015 – August 31, 2018. Total funding: $185K.
- "WiFiUS: Message and CSI Sharing for Cellular Interference Management with Backhaul Constraints." Funded by the *National Science Foundation,* March 2015 - February 2018. Total funding: $270K.
- "CIF: Large: Collaborative Research: Controlled Sensing, and Distributed Signal Processing and Decision-Making in Networked Systems." Funded by the *National Science Foundation,* August 15, 2011 – August 15, 2017. (Collaborative proposal led by D. Teneketsis at U. Michigan and V. Veeravalli at Illinois.) Total funding : $2.5 million
- "Collaborative Research: ATD: Advanced Quickest Multidecision Change Detection-Classification Methods for Threat Assessment in Distributed Sensing Systems," Funded by the *National Science Foundation,* September 1, 2012 – August 31, 2016. (Collaborative proposal with A. Tartakovsky, USC.) Veeravalli's portion of funding: $250K.
- "Dynamic Information Collection and Fusion." Funded by the *Air Force Office of Scientific Research*, August 15, 2010 – August 14, 2015. (Led by Veeravalli, with P. Ishwar, BU, and B. Chen, P. Varshney, Syracuse.) Total funding : $2.5 million
- "Nonlinear Filtering and Change-point Detection Methods for Course of Action Analysis." Funded by the *Defense Threat Reduction Agency*, August 15, 2010 – August 14, 2015. (With A. Tartakovsky (lead) and A. Galstyan, USC). Veeravalli's portion of funding: $650K

- "CIF: Medium: Collaborative Research: Understanding and Managing Interference in Communication Networks." Funded by the *National Science Foundation,* July 15, 2009 – June 30, 2014. (With L. Zheng, MIT, B. Chen, Syracuse, and G. Kramer, USC.) Veeravalli's portion of funding: $299K
- "MIMO Links in Wireless Edge Networks: Cross-Layer Protocol Design." Funded by the *National Science Foundation,* August 16, 2008 – August 15, 2013. (With N. Vaidya, Illinois). Total funding: $410K.
- "MIMO Interference Networks: Capacity and Adaptive Signaling Strategies." Funded by Intel Corporation, September 2008 - September 2011. Total funding: $218K.
- "Collaborative Research: Optimal Changepoint Detection and Identification Algorithms with Applications." Funded by the *National Science Foundation,* August 1, 2008 – July 31, 2013. (With A. Tartakovsky, USC.) Veeravalli's portion of funding: $306K.
- "Interference Alignment in Wireless Networks." Funded by Motorola, Inc, December 2010 –. Total funding: $65K.
- "Robust Inference and Communication: Theory Algorithms and Performance Analysis." Funded by the *National Science Foundation,* October 1, 2007 – September 30, 2011 . (With S. Meyn, Illinois.) Total funding: $380K.
- "Spatial-Temporal Nonlinear Filtering with Applications to Information Assurance and Counter Terrorism". Funded by the *ARO FY06 MURI Program on Spatial-Temporal Event Pattern Recognition,* May 2006 – August 2011. (Led by B. Rozovsky, Brown University.) Veeravalli's portion of funding: $500K
- "Adaptive Space-Time Codes for Interference Channels" Funded by *Texas Instruments,* 2007 – 2008. Total funding: $40K.
- "Adaptive Space-Time Codes for General MIMO Channels." Funded by *Texas Instruments,* 2006 – 2007. Total funding: $40K.
- "Wireless Wind Tunnel: A Testbed for Experimental Evaluation of Wireless Networks." Funded by the *National Science Foundation,* September, 2004 – August, 2009. (With Profs. N. Vaidya, J. Bernhard, R. Iyer, and P.R. Kumar, Illinois.) Total funding: $500K (including cost sharing).
- "Communication over Dispersive Wireless Channels: Theory and Methods Based on Physical Principles." Funded by the *National Science Foundation,* September, 2004 – August, 2008. (With Prof. A. Sayeed, U. Wisconsin.) Total funding: $500K
- Played a lead role in obtaining a **$3.4 million** award from the *Vodafone-US Foundation* to fund graduate and undergraduate fellowships in wireless commuincations at the University of Illinois from 2003-2008.
- "Design and Analysis of Sensor Networks for Statistical Inference Applications." Funded by the *Motorola Communications Center*, Illinois. September, 2005 – August 2008. Total funding: $180K
- "New Techniques for Optimizing the Quality and Capacity of Wireless Communication Systems." Funded by *National Science Foundation CAREER program and* **PECASE** *award,* July 1, 1998 – June 30, 2006. Total funding: $500K.
- "Signal Design for Broadband Multiantenna Wireless CDMA Systems." Funded by *Lucent Technologies*. June 2002 – . Total funding: $20K
- "An Integrated Exploration of Wireless Network Communication." Funded by the *National Science Foundation* through the ITR program, August 1, 1999 – December 31, 2004. (With several CSL, Illinois faculty.) Total funding of $ 2 million. Veeravalli's portion: $200K.
- "Design Principles for Wideband Wireless Communications." Funded by the *National Science Foundation,* March 1, 2000 – August 31, 2003. (With Prof. T. Berger). Total funding: $525K
- "Research at the Frontiers of the Physical Layer." Funded by *National Science Foundation,* September 1, 1998 – August 31, 2002. (With Prof. C. Heegard.) Total funding: $360K
- "Decentralized Dynamic Decision Making and its Applications to Wireless Communications." Funded by the *Office of Naval Research.* June 1, 1997 – August 31, 2000. Total funding: $175K

- "New Sequential Techniques for Code Acquisition in Wireless CDMA Systems." Funded by the *National Science Foundation.* January 1, 1997 – December 31, 2000. Total funding: $139K.
- "Wideband Multimedia Wireless Communications." Funded by *Lockheed Martin Co.,* May 20, 1999 – August 31, 2000. Total funding: $25K.
- "Radio Resource Management for Third Generation CDMA Systems." Funded by *Nortel External Research.* April 20, 1998 – July 25, 2000. Total funding: $41K.
- "Capacity, Coverage and Soft Handoff Analysis for Cellular CDMA Systems." Funded by *Nortel External Research.* December 10, 1996 – December 10, 1997. Total funding: $30K.

Equipment Grants and Donations

- "Drive Test Products for Illinois Center for Wireless Systems (ICWS) Lab." *Agilent Technologies,* 2009. Value: $198K.
- Wireless LAN equipment for the Cornell ROBOCUP project. *Raytheon,* 2000. Value: $8K.
- "Companion 200 pico-cellular communication system testbed for WiSE laboratory." *Nortel External Research*, 1998. Value: $20K.
- "Arbitrary Waveform Generator and High Speed Digitizing Oscilloscope." *Tektronix Foundation*, 1999. Value: $27K.
- "Equipment grant for WiSE laboratory" *AT&T Foundation,* 1996. Value:$15K.

ADVISING

Postdoctoctoral Associates

- **Jing Liu**, Ph.D. UCSD, July 2019-December 2020. Now with Mitsubishi Electric Research Laboratory (MERL).
- **Shaofeng Zou**, Ph.D. Syracuse University, July 2016- August 2018. Now an Associate Professor at Arizona State University.
- **Sirin Nitinawarat**, Ph.D. University of Maryland, January 2012 - September 2014. Now on the faculty at Chulalongkorn University, International School of Engineering, Bangkok, Thailand.
- **George Atia**, Ph.D. Boston University, September 2009 - August 2012. Now a Professor with University of Central Florida.
- **Vasanthan Raghavan**, Ph.D. U. Wisconsin, Madison, August 2006 - August 2009. Now with Qualcomm.
- **Jun Chen**, Ph.D. Cornell University. September 2005 - July 2006. Now a Professor with McMaster University.
- **Wei Zha**, Ph.D. Queens University. December 2003 - January 2005. Now with a Sr. DSP Engineer with PCTEL.

Ph.D. Students

- **Jiawei Li.** Currently working on Ph.D. thesis.
- **Argyrios Gerogiannis.** Currently working on Ph.D. thesis.
- **Yu-Han Huang.** Currently working on Ph.D. thesis.
- **Adarsh Subramaniam.** Ph.D. August 2025. Thesis title: "Reinforcement Learning and Optimization Methods in Sensor Networks." Now with Google.
- **Akshayaa Magesh.** Ph.D. December 2024. Thesis title: "Certifying Robustness in Inference and Learning Problems." Now with Meta.
- **Aditya Deshmukh.** Ph.D. December 2023. Thesis title: "Topics in Statistical Inference with Model Uncertainty." Now a postdoc at UIUC.
- **Yuchen Liang.** Ph.D. August 2023. Thesis title: "Minimax Quickest Change Detection under Post-change Non-stationarity and Uncertainty." Now a postdoc at Ohio State University.
- **George Rovatsos.** Ph.D. December 2020. Thesis title: "Dynamic Anomaly Detection in Sensor Networks." Now with Walmart Labs.
- **Yuheng Bu.** Ph.D. August 2019. Thesis title: "Information-Theoretic Bounds in Learning Algorithms." Now an Assistant Professor at the University of California, Santa Barbara.
- **Meghana Bande.** Ph.D., May 2019. Thesis title: "Interference Management in Wireless Networks." Now with Qualcomm, Inc.
- **Jonathan Ligo.** Ph.D., August 2017. Thesis title: "Detection of Sparse Mixtures: Fundamental Limits and Algorithms." Now with Applied Physics Laboratory.
- **Craig Wilson.** Ph.D., August 2016. Thesis title: "Adaptive Sequential Optimization and its Applications to Machine Learning." Now with Google.
- **Yun Li.** Ph.D., August 2015. Thesis title: "Universal Outlier Hypothesis Testing with Application to Anomaly Detection." Now with Meta.

- **Taposh Banerjee.** Ph.D., August 2014. Thesis title: "Data-Efficient Quickest Change Detection." Now an Associate Professor at University of Pittsburgh.
- **Aly ElGamal.** Ph.D., May 2014. Thesis title: "Interference Channels with Coordinated Multipoint Transmission." Now with Snap, Inc.
- **V. Sreekanth Annapureddy.** Ph.D., September 2011. Thesis title: "Interference Management in Wireless Networks." Now Senior VP at NetraDyne, San Diego, CA.
- **Jayakrishnan Unnikrishnan.** Ph.D., August 2010. Thesis title: "Decision-Making Under Statistical Uncertainty." Now with Amazon, Inc.
- **Ram Srinivasan.** Ph.D., December 2009. Thesis title: "Distributed Optimization in Multi-Agent Systems: Applications to Distributed Regression." Now Engineering Director, Meta (formerly Facebook)
- **Jason Fuemmeler.** Ph.D., October 2008. Thesis title: "Energy-Efficient Tracking in Sensor Networks." Now with Collins Aerospace (formerly Rockwell Collins).
- **Che Lin.** Ph.D., August 2008. Thesis title: "Multiantenna Communication in the Presence of Feedback." Now a Professor at National Taiwan University, Taiwan.
- **Yingbin (Grace) Liang.** Ph.D., August 2005. Thesis title: "Multiuser Communications with Relaying and User Cooperation." Now a Professor at Ohio State University.
- **Jean-Francois Chamberland.** Ph.D., August 2004. Thesis title: "Design of Sensor Networks for Detection Applications via Large Deviation Theory." Now Professor at Texas A&M University.
- **Rajat Prakash.** Ph.D., October 2003. Thesis title: "Centralized Wireless Systems with User Arrivals and Departures." Now with Qualcomm, San Diego, CA.
- **Swaroop Appadwedulla.** Ph.D., May 2003. (Co-advised with Douglas Jones.) Thesis title: "Energy-Efficient Sensor Networks for Detection Applications." Now with Lincoln Labs, Boston, MA.
- **Ashok Mantravadi.** Ph.D., January, 2002, Cornell University. Ph.D. thesis title: "Analysis and Design of Wideband Multiantenna CDMA Systems." Now with Qualcomm, Inc.
- **Mehul Motani.** Ph.D., August 2000, Cornell University. (Co-advised with Chris Heegard.) Thesis title: "Information Theory and Coding for CDMA Systems." Now a Professor with National University of Singapore.

M.S. Students

- **Akshayaa Magesh.** M.S., August 2020. Thesis title: "Multi-Player Multi-Armed Bandits with User Dependent Rewards."
- **Yuheng Bu.** M.S. December 2016. Thesis title: "Estimation of KL divergence: Optimal minimax rate."
- **George Rovatsos.** M.S. August 2016. Thesis title: "Quickest Change Detection with Applications to Line Outage Detection."
- **Neeraj Venkatesan.** M.S. May 2015. Thesis title: "Distributed Optimization on a Sensor Network Testbed." Now with Northrup Grumman, El Segundo, CA.
- **Meghana Bande.** M.S. May 2015. Thesis title: "Flexible Backhaul Design with Cooperative Transmission in Cellular Networks."
- **Jonathan Ligo.** M.S., December 2013. Thesis title: "Controlled Sensing Approach to Graph Classification."
- **Kyle Harris.** M.S., May 2013. Thesis title: "Wireless Sensor Network Implementations on a Testbed Platform." Now with Viavi Solutions, Indianapolis, IN.

- **Craig Wilson.** M.S., December 2011. Thesis title: "Communications Strategies for the MIMO Interference Channel." Now with Google.
- **V. Sreekanth Annapureddy.** M.S., August 2008. Thesis title: "Gaussian Interference Channel in the Low Interference Regime." Now with NetraDyne, San Diego, CA.
- **Jayakrishnan Unnikrishnan.** M.S., October 2007. Thesis title: "Cooperative Sensing for Primary Detection in Cognitive Radio."
- **Arun Visvanathan.** M.S., August 2005. Thesis title: "Sleeping Policies for Energy Efficient Tracking in Sensor Networks." Now with Qualcomm, San Diego, CA.
- **Jason Fuemmeler.** M.S., October, 2004. Thesis title: "Power Control for Ad Hoc Wireless Networks." Now with Rockwell Collins.
- **Batu Sat.** M.S., October 2003. Thesis title: "Grouping Strategies for Cellular CDMA Systems." Now Cofounder & CEO at Mall IQ, Inc.
- **K. Chaitanya Reddy.** M.S., May, 2003. Thesis title: "Coding Spreading Tradeoff for Multiple Antenna Systems Using Convolutional Codes." Now with Qualcomm, San Diego, CA.
- **Jean-Francois Chamberland.** M.S., August 2000, Cornell University. Thesis title: "Analysis and Design of Power Control Algorithms for CDMA Systems."
- **Rajat Prakash.** M.S., August 1999, Cornell University. Thesis title: "Analysis and Design of Handoff Algorithms."
- **Ashok Mantravadi.** M.S., January, 1999, Cornell University. Thesis title: "On Acquisition and Detection in Asynchronous Band-limited CDMA Systems."

Undergraduate Research Projects (last ten years)

- **Kevin Yang**, "Hallucination Detection in LLMs." Fall 2025.
- **Srihari Kompella**, "Reinforcement Learning for Target Tracking with Controlled Sensing." Fall 2025.
- **Anshul Rao**, "Reinforcement Learning for Tracking with Controlled Sensing (continuation)." Fall 2024.
- **Ranjit Rajeshram**, "Application of Quickest Change Detection in Finance." Fall 2024.
- **Anshul Rao**, "Reinforcement Learning for Tracking with Controlled Sensing." Spring 2024.
- **Kevin Zhang**, "Quantization-Aware VAE for Data Compression." Spring 2024.
- **Karthik Talluri**, "Reinforcement Learning for Tracking with Controlled Sensing." Spring 2023.
- **Charlie Plonski**, "Out-of-Distribution Detection in Machine Learning." Spring 2023.
- **Zhongbo Zhu**, "Out-of-Distribution Detection in Machine Learning." Fall 2021.
- **Huili Tao**, "Out-of-Distribution Detection in Machine Learning." Fall 2021.
- **Akshunna Vaishnav**, "Out-of-Distribution Detection." Spring 2021.
- **Kunal Bhargava**, "Out-of-Distribution Detection." Spring 2021.
- **Jingtao Shi**, "Sports Analytics Using Data Science." Spring 2020.
- **Hong-Ming Chiu**, "Model Change Detection." Spring 2020.
- **Arthur Lee** "Sensor Network Tesbted." Summer 2016, Fall 2016.
- **Kenneth Zhang** "Sensor Network Tesbted." Summer 2016, Fall 2016.

INVITED TALKS AT UNIVERSITIES, CONFERENCES AND INDUSTRY (last five years)

- "Out-of-Distribution and Hallucination Detection via Multiple Testing."
  - **Machine Learning at Georgia Tech Seminar**, November 2025.
- "Out-of-Distribution and Hallucination Detection via Multiple Testing."
  - **Distinguished Mercer Lecture, ECE Department, RPI**, October 2025.
- "Out-of-Distribution Detection via Multiple Testing."
  - **Department of Statistics, University of Waterloo**, April 2025.
- "Out-of-Distribution Detection via Multiple Testing."
  - **IEEE Information Theory Society Distinguished Lecture, IISc, Bangalore,** , March 2025.
- "Out-of-Distribution Detection via Multiple Testing."
  - **IEEE Information Theory Society Distinguished Lecture, IIT Bombay,** , March 2025.
- "Out-of-Distribution Detection via Multiple Testing."
  - **Arizona State University, LIONS seminar, ECE Department**, February 2025.
- "Detection of Untrustworthy Outputs from Learning Models: A Multiple Testing Approach."
  - **Asilomar Conference on Signals, Systems and Computers**, Pacific Grove, CA, Nov 2024.
- "Modular Analysis of Change Detection Based Algorithms for Piecewise Stationary Bandits."
  - **Asilomar Conference on Signals, Systems and Computers**, Pacific Grove, CA, Nov 2024.
- "Out-of-Distribution Detection via Multiple Testing."
  - **IEEE Machine Learning and Signal Processing (MLSP), plenary talk**, London, UK, September 2024.
- "Quickest Change Detection with Post-Change Density Estimation"
  - **International Workshop on Sequential Methodologies**, Orem, Utah, May 2024
- "Quickest Detection with Controlled Sensing"
  - **CISS, Princeton University**, March 2024.
- "Quickest Detection with Controlled Sensing"
  - **CCC Workshop, University of Florida, Gainesville** January 2024.
- "Quickest Change Detection for Monitoring Pandemics."
  - **Digital Futures Distinguished Lecture, KTH Royal Institute of Technology**, December 2023.
- "Principled Out-of-Distribution Detection in Machine Learning."
  - **6G Flagship Seminar, University of Oulu, Finland**, November 2023
- "Distributed and Adaptive Feature Compression for Pretrained Machine Learning Models."
  - **Technology Tuesday, Nokia, Espoo, Finland**, November 2023
- "Principled Out-of-Distribution Detection in Machine Learning."
  - **Technology Tuesday, Nokia, Espoo, Finland**, November 2023
- "Principled Out-of-Distribution Detection in Machine Learning."
  - **Information and Communications Engineering Seminar, Aalto University, Espoo, Finland**, September 2023
- "Quickest Detection with Controlled Sensing"
  - **International Workshop on Applied Probability**, Greece, June 2023.
- "Principled Out-of-Distribution Detection in Machine Learning."
  - **Distinguished Seminar, ECE Department, Ohio State University**, April 2023.
- "Quickest Change Detection for Monitoring Pandemics."
  - **BLISS Seminar, Berkeley**, March 2023.

- "Quickest Change Detection for Monitoring Pandemics."
  - **Information and Communications Engineering Seminar, Aalto University, Espoo, Finland**, June 2022.
- "Quickest Change Detection for Monitoring Pandemics."
  - **UIUC Statistics Seminar**, April 2022.
- "Decentralized Heterogeneous Multi-Player Multi-Armed Bandits with Non-Zero Rewards on Collisions."
  - **CISS**, March 2022 (virtual).
- "Quickest Change Detection with Non-stationary and Composite Post-change Distribution."
  - **CISS**, March 2022 (virtual).
- "Quickest Change Detection for Monitoring Pandemics."
  - **MIT CINCS/Hamilton Institute Seminar**, October 2021 (virtual).
- "Quickest Change Detection for Predicting and Monitoring Pandemics"
  - Plenary talk at **NSF Workshop on Predicting Pandemic Emergence**, February 2021 (online)

PERSONAL

Married, US Citizen