CURRICULUM VITAE

PRAMOD KUMAR VARSHNEY

EDUCATION:

Ph.D. in Electrical Engineering, University of Illinois, 1976.
Title of Thesis: "Models and Efficient Receivers for Communication Channels
with Memory"

M.S. in Electrical Engineering, University of Illinois, 1974.
Title of Thesis: "Markov Gap Model with Memory for Digital Channels"

B.S. in Electrical Engineering and Computer Science, University of Illinois, (Highest
Honors), 1972.

EXPERIENCE:

Distinguished Professor, Syracuse Univ., 2007-present.
Director, The Center for Advanced Systems and Engineering (CASE), 2009-present
Professor, Syracuse Univ., 1986-2007.
Research Director, NY State Center for Advanced Technology in Computer Applications
and Software Engineering, Syracuse University, 2001-2008.
Leader, Intelligent Control and Management, Center of Excellence in Environmental
Systems, Syracuse University, 2002-present.
Adjunct Professor, Department of Radiology, Upstate Medical University, 2003-present.
Visiting Scientist, AFRL at Rome Research Site, 1997-1999.
Visiting Professor, De LaSalle University, Manila, Philippines, 1997.
Associate Chair, Electrical & Computer Engineering Dept., Syracuse Univ., 1993-1996.
Associate Professor, Syracuse University, 1980-1986.
Assistant Professor, Syracuse University, 1976-1980.
Visiting Professor, Indian Institute of Technology, Delhi, India, 1984-1985.
Research Associate, Rome Air Development Center, Summer 1979.
Graduate Assistant, University of Illinois, 1972-1976.

AREAS OF INTEREST:

Data and Information Fusion
Wireless Sensor Networks
Signal and Image Processing
Wireless Communications and Networks
Statistical Communication Theory
Remote Sensing

HONORS AND AWARDS:

UIUC ECE Distinguished Alumni Award, 2015
Doctor of Engineering *honoris causa*, Drexel University, 2014.
IEEE Judith A. Resnik Award, 2012.
Appointed Distinguished Professor at Syracuse University, 2007.
Honorable Mention for paper at the 2nd International Innovations and Real-time Applications of Distributed Sensor Networks Symposium 2006.
Best Paper Award, Fusion'2004.
Chancellor's Citation for Exceptional Academic Achievement 2000, Syracuse University.
IEEE Third Millennium Medal, 2000.
Crouse-Hinds Award for Excellence in Scholarship, Syracuse University, 1998.
Distinguished Lecturer, IEEE Aerospace and Electronic Systems Society, 1997-2012.
IEEE Fellow, 1997.
Dow Outstanding Young Faculty Award, St. Lawrence Section, American Society of Engineering Education, 1981.
AFOSR/SCEEE Fellow, 1979.
University of Illinois Fellow, 1972.
Bronze Tablet Senior, University of Illinois, 1972.
James Scholar; University of Illinois, 1970-1972.

PROFESSIONAL SOCIETY MEMBERSHIPS AND SELECTED ACTIVITIES:

Life Fellow, IEEE
Member, Tau Beta Pi
Member, International Society of Information Fusion
Vice President, Int. Society for Information Fusion, 2000
President, Int. Society for Information Fusion, 2001
Member, Board of Directors of the Int. Society for Information Fusion, 1998-2006
Technical Program Chair, FUSION 1999
Chair, Syracuse Section IEEE AES/COM Chapter 1990-2000
IEEE, Fellow Evaluation Committee (AES), 1998-2009
Member IEEE Fellow Committee, 2014-2016
Co-General Chair, 1997 IEEE National Radar Conference.
Guest Editor, Proceedings of the IEEE, Special Issue on Data Fusion, January 1997
Tech. Program Chair, IEEE Conf. on Adv. Video and Signal Based Surveillance, 2003
Co-General Chair IEEE Int. Conference on Ultra Wideband Communications, 2012
Editorial Boards of Paritantra, Cluster Computing, Information Fusion, Information Sciences, IEEE Trans. on Signal Processing, Journal on Advances on Information Fusion, IEEE Signal Processing Magazine
Co-TPC Chair, Int. Conf. on Computing, Networking and Communications (ICNC 2017)
Co-General Chair, Int. Conf. on Computing, Networking and Commun. (ICNC 2018)
Co-Chair of ACM Mobihoc Workshop on Dist. Info. Proc. in Wireless Networks, 2017

BIOGRAPHICAL LISTINGS:

Who's Who in Technology Today
Outstanding Young Men of America
Directory of World Researchers' 1980's Subjects
International Who's Who in Engineering
Dictionary of International Biography
American Men and Women of Science

PATENTS

Method and Apparatus for Wireless Image Transmission (with L. Ramac), US patent 6,915,016, B2, Awarded July 2005.

H. Chen, J. Michels and P.K. Varshney, Optimized Stochastic Resonance Method for Signal Detection and Image Processing, US 7,668,699 B2, Issued Feb. 23, 2010.

Anna Scaglione, Yao-Win Hong, Pramod K Varshney: Methods and systems for obtaining data from networks of sources. Cornell Research Foundation. Apr, 19 2011: US7929411

R. Peng, H. Chen and P.K. Varshney, "Optimized Stochastic Resonance Signal Detection Method." U.S. Patent Number 8,214,177, July 3, 2012.

SCHOLARLY PUBLICATIONS

BOOKS:

1. P.K. Varshney, *Distributed Detection and Data Fusion*, Springer-Verlag, 1997.
2. G.L.Foresti, C. S. Regazzoni and P.K.Varshney, Editors, *Multisensor Surveillance Systems: The Fusion Perspective*, Kluwer Academic Publishers, 2003
3. P.K.Varshney and M.K.Arora (Eds.), *Advanced Image Processing Techniques for Remotely Sensed Hyperspectral Data*, Springer Verlag, 2004.
4. Modern Approaches in Applied Intelligence: Part 1 (Eds. K. Mehrotra, C. Mohan, J. Oh, P. Varshney, and M. Ali), Springer LNAI 6703
5. Modern Approaches in Applied Intelligence: Part 2 (Eds. K. Mehrotra, C. Mohan, J. Oh, P. Varshney, and M. Ali), Springer LNAI 6704
6. Developing Concepts in Applied Intelligence (Eds. K. Mehrotra, C. Mohan, J. Oh, P. Varshney, and M. Ali), Springer: *Studies in Computational Intelligence 363*

BOOK CHAPTERS:

1. P.K. Varshney, "Decentralized Bayesian Detection Theory", Published in *Stochastic Large-Scale Engineering Systems*, S. Tzafestas and K. Watanabe, Editors, Marcel Dekker Inc., 1992.
2. P.K. Varshney, "Information Theory and Coding", Published in the *MacMillan Encyclopedia of Computers*, Vol. 1, Gary G. Bitter, Editor, Macmillan, 1992.
3. P.K. Varshney, "Coding Theory", Published in the *MacMillan Encyclopedia of Computers*, Vol. 1, Gary G. Bitter, Editor, Macmillan, 1992.
4. P. K. Varshney, "Information Theory", in *Wiley Encyclopedia on Electrical and Electronics Engineering*, Vol. 10, pp. 139-145, 1999.
5. Lit-Hsin Loo, Erwei Lin, Moshe Kam and Pramod Varshney, "Cooperative Multi-Agent Constellation Formation under Sensing and Communication Constraints", in *Cooperative Control and Optimization*, pp.143-170, Kluwer Academic Press, 2002.
6. P. K. Varshney, "An Introduction to Distributed Detection Theory", in *Multisensor Fusion*, pp. 163-182, Kluwer Academic Press, 2002.
7. Lisa Osadciw, Pramod Varshney, and Kalyan Veeramachaneni, "Optimum Fusion Rules for Multimodal Biometric Systems", Chapter 15, *Multisensor Surveillance Systems: The Fusion Perspective*, Kluwer Academic Publishers, 2003.
8. H.M. Chen and P.K.Varshney, "MI Based Registration of Multi-Sensor and Multi-Temporal Images," Chapter 7 of *Advanced Image Processing Techniques for Remotely Sensed Hyperspectral Data*, pp.181-198. Editors: P.K. Varshney and M.K. Arora. Publisher: Springer Verlag, 2004.
9. S.A.Robila and P.K. Varshney, "Feature Extraction from Hyperspectral Data Using ICA," Chapter 8 of *Advanced Image Processing Techniques for Remotely Sensed Hyperspectral Data*, pp.199-216. Editors: P.K. Varshney and M.K. Arora. Publisher: Springer Verlag, 2004.
10. T. Kasetkasem, M.K.Arora, and P.K.Varshney, "An MRF Model Based Approach for Sub-pixel Mapping from Hyperspectral Data," Chapter 11 of *Advanced Image Processing Techniques for Remotely Sensed Hyperspectral Data*, pp.279-307. Editors: P.K. Varshney and M.K. Arora. Publisher: Springer Verlag, 2004.
11. T. Kasetkasem and P.K.Varshney, "Image Change Detection and Fusion Using MRF Models," Chapter 12 of *Advanced Image Processing Techniques for Remotely Sensed Hyperspectral Data*, pp.257-277. Editors: P.K. Varshney and M.K. Arora. Publisher: Springer Verlag, 2004.
12. H. M. Chen and P. K. Varshney, "Mutual Information Based Image Registration with Application to Medical Brain Imagery," Chapter 2 of *Multi-Sensor Image Fusion and Its Applications*, pp. 37-56, editors: R. S. Blum and Z. Liu. CRC Press, Taylor & Francis Group, 2005.
13. H. M. Chen and P. K. Varshney ,"Techniques for Mutual Information-Based Brain Image Registration and Their Application" for *Medical Imaging Systems Technology:Vol 1: Analysis and Computational Methods* edited by Cornelius T. Leondes. Publisher: World Scientific Publishing, Sept. 2005.
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17. Yao-Win Hong and Pramod K. Varshney, *Advanced Signal Processing for Sensor MAC Protocols*, in "Wireless Sensor Networks: Signal Processing and Communications Perspectives", Editors: A. Swami, Z. Qing, Y.-W. Hong and L. Tong, John Wiley and Sons, 2007.

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27. P.K. Varshney, E. Masazade, P. Ray, and R. Niu, "Distributed Detection in Wireless Sensor Networks," in Distributed Data Fusion for Network-Centric Operations, edited by D. L. Hall, C. Y. Chong, J. Llinas, and M. E. Liggins, CRC Press, 2012.

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32. B. Kailkhura, A. Vempaty, and P. K. Varshney, "Collaborative Spectrum Sensing in the Presence of Byzantine Attacks", in Cooperative and Graph Signal Processing, Petar M. Djuric and Cedric Richard, Ed. Elsevier. 2018
33. D. Devicharan, C. K. Mohan, K. G. Mehrotra and P. K. Varshney, "Perturbed Attractor Particle Swarm Optimization for Image Restoration," Chapter 24 in Swarm Intelligence: From Concepts to Applications, ed. Ying Tan, Pub. Institute for Eng. Technology, UK, 2018

BOOK REVIEWS:

1. P.K.Varshney, "Review of Fundamentals of Multisite Radar Systems", Signal Processing, vol. 81, 2001.

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1. P.K. Varshney and A.H. Haddad, "A Receiver with Memory for Fading Channels", *IEEE Trans. on Communications*, vol. COM-26, pp.278-283, Feb.1978.
2. P.K. Varshney and A.H. Haddad, "A One-Bit Memory Receiver for Channels with Memory", *IEEE Trans. on Aerospace and Electronic Systems*, vol. AES-14, pp. 906-911, Nov.1978.
3. P.K. Varshney, "On Analytical Modeling of Intermittent Faults in Digital Systems", *IEEE Trans. on Computers*, vol. C-28, pp.786-791, Oct.1979.
4. P.K. Varshney, "Quantization of a Signal Having Multiple Hypotheses", *Proc. IEEE* (letters), vol. 68, pp. 628-629, May 1980.
5. P.K. Varshney, "Combined Quantization-Detection of Uncertain Signals", *IEEE Trans. on Information Theory*, vol. IT-27, pp.262-265, March 1981.
6. P.K. Varshney, C.R.P. Hartmann, and J.M. Faria, "Application of Information Theory to Sequential Fault Diagnosis", *IEEE Trans. Computers*, vol. C-31, pp.164-170, Feb.1982.
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9. V.C. Vannicola and P.K. Varshney, "Spectral Dispersion of Modulated Signals Due to Oscillator Phase Instability: White and Random Walk Phase Model", *IEEE Trans. on Communications*, vol. COM-31, pp.886-895, July 1983.

10. K. Sriram, P.K. Varshney and J.G. Shanthikumar, "Discrete-Time Analysis of Voice-Data Multiplexers With and Without Speech Activity Detectors", *IEEE Journal on Selected Areas in Communications*, vol. SAC-1, pp.1124-1132, Dec. 1983.

11. P.K. Varshney and C.R.P. Hartmann, "Sequential Fault Diagnosis of Modular Systems", *IEEE Trans. Computers*, vol. C-33, pp.194-197, Feb.1984.

12. C.R.P. Hartmann, W.H. Debany, and P.K. Varshney, "Multiple Fault Detection in Fanout-Free Combinational Networks", *Electronics Letters*, vol. 20, No. 12, pp. 516-517, June 1984.

13. Z. Chair and P.K. Varshney, "Optimal Data Fusion in Multiple Sensor Detection Systems", *IEEE Trans. on Aerospace and Elect. Syst.*, vol. AES-22, pp. 98-101, January 1986.

14. W.H. Debany, Jr., P.K. Varshney and C.R.P. Hartmann, "Network Reliability Evaluation Using Probability Expressions", *IEEE Trans. on Reliability*, vol. R-35, pp.161-166, June 1986.

15. W.H. Debany, Jr., P.K. Varshney and C.R.P. Hartmann, "Random Test Length With and Without Replacement", *Electronics Letters*, vol. 22, No. 20, pp. 1074-75, September 25, 1986.

16. R.K. Varshney and P.K. Varshney, "Recursive Estimation with Uncertain Observations in a Multisensor Environment", *IEE Proceedings*, Part F, pp. 527-533, October 1986.

17. Z. Chair and P.K. Varshney, "Distributed Bayesian Hypothesis Testing with Distributed Data Fusion", *IEEE Trans. on Systems, Man and Cybernetics*, vol. 18, pp. 695-699, Sept.-Oct. 1988.

18. M. Barkat and P.K. Varshney, "Decentralized CFAR Signal Detection", *IEEE Trans. on Aerospace and Elect. Systems*, vol. 25, pp. 41-149, March 1989.

19. I.Y. Hoballah and P.K. Varshney, "An Information Theoretic Formulation of the Distributed Detection Problem", *IEEE Trans. on Information Theory*, vol. 35, pp. 988-994, Sept. 1989.

20. I.Y. Hoballah and P.K. Varshney, "Distributed Bayesian Signal Detection", *IEEE Trans. on Information Theory*, vol. 35, pp. 995-1000, Sept.1989.

21. M. Barkat, S.D. Himonas, and P.K. Varshney, "CFAR Detection for Multiple Target Situations", *IEE Proceedings*, vol. 136, Part F, No. 5, pp.193-209, October 1989.

22. P.K. Varshney and S. Dey, "Fairness in Computer Networks: A Survey", *Journal of Institute of Electronic and Telecommunication Engineers*, Special Issue on Digital Communications, May-June, 1990.

23. A.M. Kabakcioglu, P.K. Varshney and C.R.P. Hartmann, "Application of Information Theory to Switching Function Minimization", *IEE Proceedings*, Part E, pp. 389-393, Sept. 1990.

24. M. Barkat and P.K. Varshney, "Adaptive Cell-Averaging CFAR Detection in Distributed Sensor Networks", *IEEE Trans. on Aerospace and Electronic Systems*, vol. 27, pp. 424-429, May 1991.

25. K.T. Newport and P.K. Varshney, "Design of Survivable Communication Networks under Performance Constraints", *IEEE Trans. on Reliability*, vol. 40, pp. 433-440, October 1991.

26. W.A. Hashlamoun and P.K. Varshney, "An Approach to the Design of Distributed Bayesian Detection Structures", *IEEE Trans. on Systems, Man and Cybernetics*, vol. 21, Sept./Oct. 1991.

27. R. Vaidyanathan, C.R.P. Hartmann and P.K. Varshney, "PRAM's with Variable Word-Size", *Information Processing Letters*, vol. 42, pp. 217-222, June, 1992.

28. J. Han, P.K. Varshney and R. Srinivasan, "Distributed Binary Integration", *IEEE Trans. on Aerospace and Elect. Systems*, vol. 29, pp. 2-8, Jan. 1993.

29. R. Vaidyanathan, C.R.P. Hartmann and P.K. Varshney, "Running ASCEND, DESCEND, and PIPELINE Algorithms in Parallel Using Small Processors", *Information Processing Letters*, vol. 46, pp.31-36, April 1993.

30. T.C. Wang and P.K. Varshney, "A Tracking Algorithm for Maneuvering Targets", *IEEE Trans. on Aerospace and Elect. Systems*, vol. 29, pp. 910-924, July 1993.

31. W.A. Hashlamoun and P.K. Varshney, "Further Results on Decentralized Bayesian Signal Detection", *IEEE Trans on Info. Theory*, vol. 39, Sept. 1993.

32. T.C. Wang and P.K. Varshney, "Measurement Preprocessing Approach for Nonlinear Target Tracking", *IEE Proceedings, Part F.*, vol. 140, pp. 316-322, Oct.1993.

33. S. Dey and P.K. Varshney, "Flow Control Methodology for Virtual Circuit Networks", *IEE Proceedings, Part I.*, vol. 140, pp .494-504, Dec. 1993.

34. J.H. Michels, P.K. Varshney and D.D. Weiner, "Synthesis of Correlated Random Signals for Performance Evaluation of Multichannel Systems", *IEEE Trans. on Signal Processing,* vol. 42, pp. 367-375, Feb. 1994.

35. W.A. Hashlamoun, P.K. Varshney and V.N.S. Samarasooriya, "A Tight Upper Bound on the Bayesian Probability of Error", *IEEE Trans. on Pattern Analysis and Machine Intelligence*, vol. 16, pp.220-224, Feb. 1994.

36. T.C. Wang and P.K. Varshney, "Measurement Preprocessing Approach for Target Tracking in a Cluttered Environment", *IEE Proceedings, Part F,* vol. 141, pp. 151-158, June 1994.

37. P.K. Varshney, A.R. Joshi and P.L. Chang, "Reliability Modeling and Performance Evaluation of Variable Link-Capacity Networks", *IEEE Trans. on Reliability,* vol. 43, pp. 378-382, September 1994.

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39. S. Alhakeem and P.K. Varshney, "A Unified Approach to the Design of Decentralized Detection Systems", *IEEE Trans. on Aerospace and Elect. Syst.,* vol. 31, pp. 9-20, Jan. 1995.

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41. C. Tumuluri and P.K. Varshney, "An Evidential Extension of the MRII Training Algorithm for Detecting Erroneous MADALINE Responses", *IEEE Trans. on Neural Networks*, vol. 6, pp. 880-892, July 1995.

42. M.K. Uner and P.K. Varshney, "Distributed CFAR Detection in Homogeneous and Nonhomogeneous Backgrounds", *IEEE Trans. on Aerospace and Electronic Systems*, vol. 32, pp. 84-97, Jan. 1996.

43. W.A. Hashlamoun and P.K. Varshney, "Near-Optimum Quantization for Signal Detection", *IEEE Trans. on Communications*, vol. 44, pp. 294-297, March 1996.

44. V.N.S. Samarasooriya and P.K. Varshney, "A Sequential Approach to Asynchronous Decision Fusion", *Optical Engineering*, vol. 35, pp. 625-633, March 1996.

45. S. Alhakeem and P.K. Varshney, "Decentralized Bayesian Detection with Feedback", *IEEE Trans. on Systems, Man and Cybernetics*, vol. 26, pp. 503-513, July 1996.

46. P.K. Varshney, "Scanning the Issue", Guest Editorial in the *Proceedings of the IEEE*,   vol. 85, pp. 3-5, January 1997.

47. R. Viswanathan and P.K. Varshney, "Distributed Detection with Multiple Sensors: Part I - Fundamentals", Invited Paper in the *Proceedings of the IEEE*, vol. 85, pp. 54-63, January 1997.

48. V.N.S. Samarasooriya and P.K. Varshney, "Decentralized Signal Detection with Fuzzy Information", *Optical Engineering*, vol. 36, pp. 658-668, March 1997.

49. L.C. Ramac and P.K. Varshney, "Image Thresholding Based on Ali-Silvey Distance Measures", *Pattern Recognition*, vol. 30, pp. 1161-1174, July 1997.

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52. P.K. Varshney, "Multisensor Data Fusion", *Electronics and Communications Engineering Journal*, vol. 9, pp. 245-253, Dec. 1997.

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54. C.T. Yu and P.K. Varshney, "Bit Allocation for Discrete Signal Detection", *IEEE Trans. on Communication*, vol. 46, pp. 173-175, February, 1998.

55. P.L. Chang and P.K. Varshney, "Integration of Optimal Routing and Flow Control in ATM Networks," *IEE Proc.- Comm.,* vol. 145, pp. 1-7, February, 1998.

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65. L. C. Ramac and P. K. Varshney, "A Wavelet Domain Diversity Method for Transmission of Images over Wireless Channels", *IEEE Journal on Selected Areas in Communications*, vol. 18, pp. 891-898, June 2000.

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420. A. Vempaty, V. S. S. Nadendla, and P. K. Varshney, "Further results on noise-enhanced distributed inference in the presence of Byzantines," in Proc. Global Wireless Summit (GWS'13), Atlantic City, New Jersey, June 2013.

421. N. Cao, E. Masazade, P. K. Varshney, ``A Multiobjective Optimization based Sensor Selection Method for Target Tracking in Wireless Sensor Networks'', Proc. International Conference on Information Fusion, Istanbul, Turkey, July 2013.

422. A. Vempaty, O. Ozdemir, and P. K. Varshney, "Target tracking in wireless sensor networks in the presence of Byzantines," International Conference on Information Fusion (FUSION), Istanbul, Turkey, July 2013.

423. Y.S. Han, H. T. Pai, R. Zheng, and P.K. Varshney, "Update-Efficient Regenerating Codes with Minimum Per-Node Storage," 2013 International Symposium on Information Theory (ISIT2013), Istanbul, Turkey, July 2013

424. A. Vempaty, Y. S. Han, and P. K. Varshney, "Byzantine Tolerant Target Localization in Wireless Sensor Networks Over Non-Ideal Channels," in Proc. 13th International Symposium on Communications and Information Technologies (ISCIT 2013), Samui Island, Thailand, Sep. 2013.

425. Bhavya Kailkhura, Yunghsiang S. Han, Swastik Brahma, and Pramod K. Varshney "On Covert Data Falsification Attacks on Distributed Detection Systems", International Symposium on Communications and Information Technologies (ISCIT), pp. 412–417, Samui Island, Thailand, September 2013.

426.   Raghed El-Bardan, Swastik Brahma, and Pramod K. Varshney "A Game Theoretic Power Control Framework for Spectrum Sharing in Competitive Environments", Proc. of the 47th Asilomar Conf. on Signals, Systems and Computers, Pacific Grove, CA, Nov. 2013.

427.   S. Liu, E. Masazade, X. Shen, P. K. Varshney, ``Adaptive Non-myopic Quantizer Design for Target Tracking in Wireless Sensor Networks", Asilomar Conference on Signals, Systems, and Computers, Monterey, CA, USA, Nov. 2013.

428.   O. Ozdemir, P. K. Varshney, and W. Su, "Asynchronous hybrid maximum likelihood classification of linear modulations," IEEE Global Communications Conference (GLOBECOM), Atlanta, GA, Dec. 2013.

429.   S. Liu, M. Fardad, E. Masazade, and P. K. Varshney, ``On Optimal Sparse Sensor Scheduling for Field Estimation in Wireless Sensor Networks", 1st IEEE Global Conference on Signal and Information Processing, Austin, TX, USA, December 2013.

430.   Nianxia Cao, Swastik Brahma, and Pramod K. Varshney "An Incentive-based Mechanism for Location Estimation in Wireless Sensor Networks", Proc. of the IEEE Global Conference on Signal and Information Processing (GlobalSIP), 2013.

431.   V. Sriram Siddhardh (Sid) Nadendla, Swastik Brahma, and Pramod K. Varshney "A Bilateral-Market based Mechanism for Joint Spectrum Sensing and Allocation in Cognitive Radio Networks", Proc. of the IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP), 2013.

432.   L. R. Varshney, A. Vempaty, and P. K. Varshney, "Assuring Privacy and Reliability in Crowdsourcing with Coding," Proc. 2014 Information Theory and its Applications Workshop (ITA 2014), San Diego, California, Feb. 2014.

433.   A. Vempaty, Y. S. Han, L. R. Varshney, and P. K. Varshney, "Coding Theory for Reliable Signal Processing," Proc. International Conference on Computing, Networking and Communications (ICNC 2014), Honolulu, Hawaii, Feb. 2014. (Invited Paper)

434.   P. K. Varshney, "Data Fusion Methodologies for Information Exploitation and Situational Awareness," Pittcon, Chicago, March 2014. (Invited Paper)

435.   R. El-Bardan, S. Brahma, and P. K. Varshney, "Power Control with Jammer Location Uncertainty: A Game Theoretic Perspective," Proc. 48th Conf. on Information Sciences and Systems, Princeton, NJ, Mar. 2014.

436.   S. Kar, and P. K. Varshney "A decentralized framework for linear coherent estimation with spatial collaboration," Proc. of the Acoustics, Speech and Signal Processing (ICASSP), 2014 IEEE International Conference on , pp. 6509-6513, 4-9 May 2014.

437.   Yujiao Zheng, Thakshila Wimalajeewa and Pramod K. Varshney, "Probabilistic sensor management for target tracking via compressive sensing", 39th International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Florence, Italy, May 2014.

438.   H. He and P. K. Varshney, "Distributed detection with censoring sensors under dependent observations", Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Florence, Italy, May 2014.

439.   G. Li, T. Wimalajeewa, and P. K. Varshney, "Decentralized Subspace Pursuit for Joint Sparsity Pattern Recovery", Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), May 2014.

440. Bhavya Kailkhura, Swastik Brahma, and Pramod K. Varshney "On the Performance Analysis of Data Fusion Schemes with Byzantines", IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), pp. 7411-7415, May 2014.

441. S. Liu, E. Masazade, M. Fardad, P. K. Varshney, "Sparsity-aware field estimation via ordinary Kriging," Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 2014, pp.3948—3952.

442. S. Liu, M. Fardad, S. Kar, P. K. Varshney, "On optimal sensor collaboration topologies for linear coherent estimation," Proc. IEEE International Symposium on Information Theory (ISIT), July 2014, pp.2624-2628.

443. S. E. Parks, H. B. Blair, N. D. Merchant, K. M. Fristrup, and P. K. Varshney, "Long-term acoustic monitoring to assess anthropogenic impacts on acoustic behavioral ecology," Animal Behavior Society 2014 Conference, Princeton, NJ, August 10-13, 2014.

444. G. Li, P. K. Varshney, and Y. D. Zhang, "Multistatic Radar Imaging via Decentralized and Collaborative Subspace Pursuit," Proceedings of The 19th International Conference on Digital Signal Processing (DSP), Aug. 2014.

445. Bhavya Kailkhura, Lixin Shen, Thakshila Wimalajeewa, Pramod K. Varshney, "Distributed Compressive Detection with Perfect Secrecy," Proc. of the 2nd International Workshop on Compressive Sensing in Cyber-Physical Systems (CSCPS), Oct. 2014.

446. Nianxia Cao, Swastik Brahma, Pramod K. Varshney, "Towards Cloud Sensing Enabled Target Localization." Proc. 52th Annual Allerton Conference on Communication, Control and Computing, Champaign, IL, Oct. 2014.

447. Swastik Brahma, Kevin Kwiat, Pramod K. Varshney, and Charles A Kamhoua, "Diversity and System Security: A Game Theoretic Perspective",IEEE Military Communications Conference (MILCOM), pp. 146-151, 6-8 Oct. 2014.

448. Svetlana Foulke, Jithin Jagannath, Andrew Drozd, Thakshila Wimalajeewa, Pramod K. Varshney, and Wei Su, "Multisensor Modulation Classification (MMC) implementation considerations - USRP case study", IEEE Military Communications Conference (MILCOM), Baltimore, MD, Oct 2014.

449. A. Vempaty, G. J. Koop, A. H. Criss, and P. K. Varshney, "How efficient are we at fusing decisions?," presented at CODE@MIT, MIT Sloan School of Management, Cambridge, Oct. 10-11, 2014.

450. Bhavya Kailkhura, Thakshila Wimalajeewa, Pramod K. Varshney, "On Physical Layer Secrecy of Collaborative Compressive Detection," Proc. of the 48th Asilomar Conf. on Signals, Systems and Computers, Pacific Grove, CA, Nov. 2014. (Invited Paper)

451. J. Mansukhani, P. Ray and P.K. Varshney, " Simultaneous Detection and Estimation based Spectrum Sharing in Cognitive Radio Networks ," Proceedings of the 48th Asilomar Conf. on Signals, Systems and Computers, Pacific Grove, CA, Nov. 2014.

452. Nianxia Cao, Swastik Brahma, Pramod K. Varshney, "Market based Sensor Mobility Management for Target Localization," Proc. 48th Annual Asilomar Conference on Signals, Systems, and Computers, Nov. 2014.

453. G. Li, H. Zhang, T. Wimalajeewa, and P. K. Varshney, "On the Detection of Sparse Signals with Sensor Networks based on Subspace Pursuit," Proceedings of the IEEE Global Conference on Signal and Information Processing (GlobalSIP), Dec. 2014.

454. Raghed El Bardan, V. Sriram Siddhardh Nadendla, Swastik Brahma, Pramod K. Varshney, "On ARQ-based Wireless Communication Systems in the Presence of a Strategic Jammer", Proc. of GlobalSIP, Dec.2014, Atlanta, GA.

455. O. Ozdemir, S. Choi, T. G. Allen, and P. K. Varshney, "Uncertainty Characterization using Copulas for Classification," Proc. SPIE Multisensor, Multisource Information Fusion: Architectures, Algorithms, and Applications, Baltimore, MD, Apr. 2015.

456. S. Liu, E. Masazade, M. Fardad, and P. K. Varshney, "Sensor Selection with Correlated Measurements for Target Tracking in Wireless Sensor Networks," Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), April 2015, pp.4030-4034.

457. V. S. S. Nadendla, Y. S. Han, and P. K. Varshney, "Information-Dispersal Games for Security in Cognitive-Radio Networks," Proc. of the 2015 IEEE International Symposium on Information Theory (ISIT2015), Hong Kong, June, 2015.

458. Hao He, Sora Choi, Pramod K. Varshney, and Wei Su, "Distributed Classification under Statistical Dependence with Application to Automatic Modulation Classification," Proc. of the International Conference on Information Fusion, Washington DC, Jul. 2015.

459. S. Liu, F. Chen, A. Vempaty, M. Fardad, L. Shen, and P. K. Varshney, "Sparsity Promoting Sensor Management for Estimation: An Energy Balance Point of View," Proc. IEEE International Conference on Information Fusion (FUSION), Washington, D.C., July 2015.

460. V. S. S. Nadendla, S. Liu and P. K. Varshney, "On Enhancing Secrecy in Centralized Detection using Transmit-Beamforming with Artificial Noise," Proc. Annual Allerton Conference on Communication, Control and Computing, Oct. 2015.

461. S. Choi, H. He, and P. K. Varshney, "Copula Based Dependence Modeling for Inference in Radar Systems," Proc. of 2015 IEEE Radar Conference, Johannesburg, Oct. 2015.

462. T. Wimalajeewa, J. Jagannath, P. K. Varshney, A. Drozd, and W. Su, "Distributed Asynchronous Modulation Classification Based on Hybrid Maximum Likelihood Approach" , Military Communications Conference (MILCOM) , Tampa, FL, Oct 2015.

463. Hao He, Arun Subramanian, Sora Choi, Pramod K. Varshney, and Thyagaraju Damarla, "Social Media Data Assisted Inference with Application to Stock Prediction," Proc. of the 48th Asilomar Conf. on Signals, Systems and Computers, Pacific Grove, CA, Nov. 2015.

464. S. Liu, S. Kar, M. Fardad and P. K. Varshney, "On Optimal Sensor Collaboration for Distributed Estimation with Individual Power Constraints," Proc. Asilomar Conference on Signals, Systems and Computers, Nov. 2015

465. V. Gupta, B. Kailkhura, T. Wimalajeewa, S. Liu, and P. K. Varshney, "Joint Sparsity Pattern Recovery with 1-bit Compressive Sensing in Sensor Networks," in Proc. Asilomar Conference on Signals, Systems and Computers, Nov. 2015.

466. R. Zhang, G. Li, C. Clemente, and P. K. Varshney, "Helicopter Classification via Period Estimation and Time-Frequency Masks," Proceedings of 2015 IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP), Dec. 2015.

467. A. Vempaty, L. R. Varshney, G. J. Koop, A. H. Criss, and P. K. Varshney, "Decision Fusion by People: Experiments, Models, and Sociotechnical System Design," Proc. 3rd IEEE Global Conference on Signal and Information Processing (GlobalSIP), Orlando, Florida, Dec. 14-16, 2015

468. Swastik Brahma, Kevin Kwiat, Pramod K. Varshney, and Charles Kamhoua, "CSRS: Cyber Survive and Recover Simulator," in *Proc. of the IEEE International Symposium on High Assurance Systems Engineering (HASE)*, pp. 110-113, Orlando, FL, January 2016.

469. R. El-Bardan, W. Saad, S. Brahma, and P. K. Varshney, "Matching Theory for Cognitive Spectrum Allocation in Wireless Networks," in Proc. of the IEEE 50th Annual Conference on Information Sciences and Systems (CISS), Princeton, NJ, March 2016.

470. Nianxia Cao, Swastik Brahma, and Pramod K. Varshney, "Portfolio Theory based Sensor Selection in Wireless Sensor Networks with Unreliable Observations," in *Proc. of the 50th Annual Conference on Information Sciences and Systems (CISS)*, pp. 454-459, March 2016.

471. Bhavya Kailkhura, Jayaraman J. Thiagarajan, Peer-Timo Bremer, and Pramod K. Varshney. "Theoretical guarantees for Poisson disk sampling using pair correlation function." in Proc. of the 2016 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 2589-2593, March 2016.

472. Bhavya Kailkhura, J. J. Thiagarajan, P. Bremer, and Pramod K. Varshney, "Impact of Spectral Sampling Techniques on Surrogate Modeling," in *Proc. of the SIAM conference on uncertainty quantification*, April, 2016.

473. Susan E. Parks, Samuel L. Denes, Leanna Matthews, Pramod K.Varshney and Kurt Fristrup, "Insights into airplane overflight effects on bioacoustic activity levels from long-term acoustic monitoring at a NEON site," Presented at the Spring 2016 meeting, Acoustical Society of America, Salt Lake City, May 2016.

474. N. Cao, Y. Wang, S. Brahma and P. K. Varshney, "Charging state aware optimal auction design for sensor selection in crowdsourcing based sensor networks," in Proc. of the 19th International Conference on Information Fusion (FUSION), Heidelberg, July 2016, pp. 626-633.

475. P.-N. Chen, Y. S. Han, H.-Y. Lin, and P. K. Varshney, "Optimal Byzantine Attack for Distributed Inference with M-ary Quantized Data," in Proc. of the 2016 IEEE International Symposium on Information Theory (ISIT2016), Barcelona, Spain, July, 2016.

476. V. Sriram Siddhardh (Sid) Nadendla, Swastik Brahma, and Pramod K. Varshney, "Towards the Design of Prospect-Theory based Human Decision Rules for Hypothesis Testing," in Proc. of the 54th Annual Allerton Conference on Communication, Control, and Computing (Allerton), Sept. 2016.

477. S. Liu, V. Sharma and P. K. Varshney, "Towards An Online Energy Allocation Policy for Distributed Estimation with Sensor Collaboration Using Energy Harvesting Sensors," in Proc. of the IEEE Global Conference on Signal and Information Processing (GlobalSIP), December 2016.

478. S. Liu, N. Cao and P. K. Varshney, "Sensor Placement for Field Estimation via Poisson Disk Sampling," Proc. of the IEEE Global Conference on Signal and Information Processing (GlobalSIP), December 2016.

479. S. Kafle, B. Kailkhura, T. Wimalajeewa and P. K. Varshney, "Decentralized Sparsity Pattern Recovery using 1-bit Compressed Sensing", in Proc. of the IEEE Global Conference on Signal and Information Processing (GlobalSIP), December 2016.

480. R. El-Bardan, V. Sharma, and P. K. Varshney, "Learning-based Power Allocation in Cognitive Radio Networks with a Jammer", in Proc. of the IEEE Global Conference on Signal and Information Processing (GlobalSIP), Greater Washington, D.C., December 2016.

481. P. Khanduri, V. Sharma and P.K Varshney, "Detection Diversity of Spatio-Temporal Data using Pitman's Efficiency for low SNR Regimes", in Proc. of the IEEE Global Conference on Signal and Information Processing (GlobalSIP), December 2016.

482. Jithin Jagannath, Dan O'Connor, Nicholas Polosky, Brendan Sheaffer, Lakshmi Narasimhan T., Svetlana Foulke, and Pramod K. Varshney, "Design and Evaluation of Hierarchical Hybrid Automatic Modulation Classifier using Software Defined Radios", IEEE Computing and Communication Workshop and Conference, Jan. 2017.

483. S. Liu, A. Ren, Y. Wang and P. K. Varshney, "Ultra-fast robust compressive sensing based on memristor crossbars," 42nd International Conference on Acoustics, Speech, and Signal Processing (ICASSP), New Orleans, LA, March 2017, pp. 1133-1137 (Best student paper award, third place)

484. S. Zhang, A. Vempaty, S. E. Parks, and P. K. Varshney, "On classification of environmental acoustic data using crowds", 42nd International Conference on Acoustics, Speech, and Signal Processing (ICASSP), New Orleans, LA, March 2017, pp. 5880-5884.

485. Thakshila Wimalajeewa and Pramod K. Varshney, "Detection with Multimodal Dependent Data Using Low Dimensional Random Projections", *42nd International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, New Orleans, LA, March 2017.

486. P. Khanduri, A. Vempaty and P. K. Varshney, "A Unified Diversity Measure for Distributed Inference", 42nd International Conference on Acoustics, Speech, and Signal Processing (ICASSP), New Orleans, LA, March 2017, pp. 5880-5884.

487. O. Ozdemir, L. N. Theagarajan, M. Agarwal, T. Wimalajeewa, and P. K. Varshney, "An MCMC approach to multisensor linear modulation classification," Proc. IEEE Wireless Communications and Networking Conf. (WCNC), San Francisco, CA, Mar. 2017.

488. Q. Li and P. K. Varshney, "Does Confidence Reporting From the Crowd Benefit Crowdsourcing Performance?" SOCIALSENS 2017, no. 6, pp. 49–54.

489. Q. Li, Y. Zhou, Y. Liang, and P. K. Varshney, "Convergence Analysis of Proximal Gradient with Momentum for Nonconvex Optimization," ICML 2017, vol. 60, pp. 2111–2119.

490. A. Vempaty, L. R. Varshney, and P. K. Varshney, "A Coupon-Collector Model of Machine-Aided Discovery", 2017 KDD Workshop on Data-Driven Discovery, Aug. 2017.

491. T. Wimalajeewa and P. K. Varshney, "Robust Detection of Random Events with Spatially Correlated Data in Wireless Sensor Networks via Distributed Compressive Sensing", IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP), Curacao, Dutch Antilles, December 2017.

RESEARCH GRANTS AND CONTRACTS:

1. "Electromagnetic Compatibility of Digital Systems", with H. Schwarzlander, Reliability and Compatibility Division, Rome Air Development Center, 1977-1978, $33,000.

2. "Integrated Voice-Data Communications", AFOSR/SCEEE Fellowship, 1979, $5,350.

3. "Integrated Voice-Data Communications", Senate Research Committee, Syracuse University 1979-1980, $3,500.

4. "Integrated Switching Techniques," Air Force Office of Scientific Research, 1980-1981, $10,000.

5. "Integrated Switching Techniques", Communications Division, Rome Air Development Center, 1981-1982, $25,000.
6. Baule Grant, College of Engineering, Syracuse University 1982, $4,100.
7. "Network Susceptibility Assessment", Communication Division, Rome Air Development Center, 1982-1983, $20,000.
8. "Packet Radio Networks", Communications Division, Rome Air Development Center, 1983, $14,500.
9. "Modeling of Oscillator Phase Instability", Surveillance Division, Rome Air Development Center, 1984, $25,000.
10. "Multiple Sensor Networks and Data Fusion," Surveillance Division, Rome Air Development Center, 1984, $50,000.
11. CASE Center Award, Syracuse University, 1984, $4,200.
12. Visit to India as a Guest Scientist, National Science Foundation, 1984-1985, $25,860.
13. "Modeling of Oscillator Phase Instability," Surveillance Division, Rome Air Development Center, 1985, $21,000.
14. "Multiple Sensor Networks and Data Fusion," Surveillance Division, Rome Air Development Center, 1985, $41,000.
15. "Complexity of AI Algorithms," with C.R.P. Hartmann, Command and Control Division, Rome Air Development Center, 1985, $85,799.
16. "Network Susceptibility Assessment," Communications Division, Rome Air Development Center, 1986, $50,000.
17. "Distributed Detection and Estimation," Senate Research Committee, 1986, $3,000.
18. "Network Susceptibility Evaluation," Rome Air Development Center, 1987, $50,000.
19. "Multiple Sensor Networks and Data Fusion," with D.D. Weiner, Rome Air Development Center, 1987, $150,000.
20. "Network Simulation Techniques," Rome Air Development Center, 1988, $50,000.
21. "Multiple Sensor Networks and Data Fusion," Rome Air Development Center, 1988, $90,000.
22. "Analysis of Parallel Algorithms," with C.R.P. Hartmann, Rome Air Development Center, $100,000.
23. "Sensor Fusion Algorithms," Southeastern Center for Electrical Engineering Education, $52,093.
24. "Bistatic Radar Analysis," Rome Laboratory, $199,690.
25. "Signal Processing Using Remotely Located Sensors," Southeastern Center for Electrical Engineering Education, $94,540.
26. "Expert Systems for Surveillance Radar," Kaman Sciences Corp., $79,000.
27. "Distributed Detection Theory and Data Fusion," AFOSR, $61,670.
28. "Investigation of Ambiguity Function and Multichannel Detection," Rome Laboratory, $25,645.
29. "Distributed Detection Theory and Data Fusion," AFOSR, $63,659.
30. "Sensor Fusion Algorithms and Performance Limits," Rome Laboratory, $300,000.
31. "Knowledge-based Interference Suppression/Avoidance System," (with D. Weiner), Rome Laboratory, $200,000.
32. Net HPCC: A Design Tool for High Performance Computing and Communication Systems, (with S. Hariri), $125,000, 1 ½ years, Rome Laboratory.

33. Design, Development, Benchmarking and Evaluation of Parallel Applications for High-Performance Embedded Systems, (with D. Weiner and A. Choudhary), $359,000, 2 years, Rome Laboratory.
34. Intergovernmental Personnel Assignment, $158,170, 2 years, Air Force Research Laboratory.
35. Image Fusion for Concealed Weapons Detection, $20,020, one year, Stiefvater Consultants, Research grant through the CASE Center.
36. Distributed Detection Theory and Data Fusion, $165,383, 3 years, AFOSR.
37. Sensor Fusion Algorithms and Performance Limits, $300,000, 3 years, Rome Laboratory.
38. Image Fusion for Concealed Weapons Detection, $20,020, one year, Stiefvater Consultants, Research grant through the CASE Center.
39. Support for the E3 EXPERT system (with D. Weiner), $15,000, Andro Consulting, Research grant through the CASE Center.
40. Multi-modality Image Fusion Study, $20,000, Eastman Kodak, Research grant through the CASE Center.
41. Distributed, Real-time Sensor Project, (with S. Taylor, T. K. Sarkar, S. K. Chin), $1.89 M, 1.5 years, DARPA/U.S. Space and Naval Warfare Systems Center.
42. Response of Complex Ecosystems to Atmospheric Deposition (with Driscoll, Costello, Johnson and Read) $1M, 3 years W. M. Keck Foundation.
43. Mobile Augmented Battlespace Visualization, (with K. Mehrotra and C. Mohan), $850,000, 5 years, MURI grant from Army Research Office.
44. Radar Signal Detection based on Bayesian Hierarchical Models and Image Analysis Techniques (with B. Chen), $183K, 2 years, AFRL.
45. Application of SAID Technologies to NASA's Earth Science Enterprise (with S. K. Chin), $1M, 4 years, NASA.
46. Adaptive Antennas and Diversity Techniques for Wireless Communication, (with T. K. Sarkar) $271,000, 5 years, National Science Foundation.
47. Millimeter Wave Imager, $17.8 K, 6 months, ITT Industries.
48. ASW Systems with Large Numbers of Advanced Autonomous Distributed Sensors, 21 K, 6 months, STTR project from Office of Naval Research via Alphatech Inc.
49. Multi-sensor Registration Engineering Support, $15 K, 3 months, Sensis Corp.
50. Spatial Multi-sensor Autonomous Registration Toolkit (SMART), $50K, Two years, ANDRO Computational Solutions, LLC.
51. Strategically Targeted Research in Intelligent Built Environmental Systems (with Khalita, Zhang, Tarlarides), $4,468,877, 3 years, Environmental Protection Agency.
52. Research on Data Fusion, $33828, ANDRO Computational Solutions via the CASE Center.
53. Strategically Targeted Research in Intelligent Built Environmental Systems (with Khalifa, Zhang, Tavlarides), $3,568,476, 3 years, Environmental Protection Agency.
54. Distributed Sensor Networks, AU$ 1.13M, Partner Investigator, Department of Education Science and Technology (DEST), Australia
55. Research on Data Fusion, $65,010, ANDRO Computational Solutions via the CASE Center.
56. Stochastic Resonance in Signal Detection and Human Perception, $30,000, 9 months, JHM Technologies.

57. Research on Data Fusion, $107,206, ANDRO Computational Solutions via the CASE Center.
58. Stochastic Resonance in Signal Detection and Human Perception, $350,000, 2 years, JHM Technologies.
59. Sensor Fusion for Personnel Detection, $85,000, 3 years, Department of the Army,
60. Detection and Tracking of Spatio-Temporal Phenomena: Moving Target in Crowded Environments, $200,000, 1.75 years, UT-Battelle / US Department of Energy.
61. Advanced Radar Data Fusion : Application of MIMO Radar Technology, $30,000, 0.5 years, ANDRO Computational Solutions, LLC.
62. UAV Operations in Civilian and Military Airspaces, $62,5000, 1 year, Digicomp Research Corporation.
63. Adaptive Models and Fusion Algorithms for Intelligent Information Exploitation, $750,000, 3 years, Air Force Office of Scientific Research.
64. Personnel Detection via Fusion of Heterogeneous Data, $240,000, 3 years, US Army Research Office.
65. Intelligent Sensor Networks for Improved Indoor Air Quality, $100,000, 1 year, Syracuse University / EPA
66. Centers for Advanced Technology (CAT) Program (with Shiu-Kai Chin), $4.0M, 4 years, NY State Office of Science, Technology, and Academic Research.
67. Research on Data Fusion, $98,872, ANDRO Computational Solutions via the CASE Center.
68. Fusion, Analysis, Simulation and Testing, $33,400, 4 months, Black River Systems.
69. Detection and Tracking of Spatio-Temporal Phenomena: Moving Target in Crowded Environments, $150,000, 2.75 years, UT-Battelle / US Department of Energy.
70. Centers for Advanced Technology (CAT) Program (with Gina Lee-Glauser), $4.0M, 4 years, NY State Office of Science, Technology, and Academic Research.
71. Strategically Targeted Research in Intelligent Built Environmental Systems (with Khalifa, Zhang, Tavlarides), $3,568,476, 2005-2009, Environmental Protection Agency.
72. Distributed Sensor Networks, AU$ 1.13M, Partner Investigator, Department of Education Science and Technology (DEST), Australia
73. Sensor Fusion for Personnel Detection, $85,000, 2006-2010, Department of the Army.
74. Detection and Tracking of Spatio-Temporal Phenomena: Moving Target in Crowded Environments, $150,000, 2006-2009, UT-Battelle / US Department of Energy.
75. Adaptive Models and Fusion Algorithms for Intelligent Information Exploitation (with Mehrotra and Mohan), $750,000, 2006-2009, Air Force Office of Scientific Research.
76. Personnel Detection via Fusion of Heterogeneous Data, $240,000, 2006-2009, US Army Research Office.
77. Centers for Advanced Technology (CAT) Program, $2.8M, 2008-2011, NY State Office of Science, Technology, and Academic Research.
78. Syracuse Center of Excellence in Environmental and Energy Systems (with Ed A Bogucz), $11.3 M, 2005-2010, Environmental Protection Agency.
79. Noise Enhanced Sensory Signal Processing, $735,000, 2009-2011, Air Force Office of Scientific Research.
80. The Syracuse University CASE Center Managed AFRL-IT Summer Faculty Program, $725,535, 2009-2011, US Air Force Research Labs/Rome.

81. Advancement of Intelligent Aerospace Systems (AIAS) for U.S. Air Force (with Mark Glauser), $863,250, 2008-2011, Clarkson University.
82. Cyber Superiority for Air Force Combatant Commanders: Integrated Air/Space/C2/Cyber Dynamic Spectrum Exploitation for Enhanced Situational Awareness (with Du), $40,070, 2009-2010, ANDRO Computational Solutions, LLC.
83. Multimodal Signal Processing for Personnel Detection and Activity Classification for Indoor Surveillance, $400,000, 2009-2013, Department of the Army.
84. The Syracuse University CASE Center Managed AFRL-IT Summer Faculty Program, $725, 535, 2009-2011, US Air Force Research Labs/Rome.
85. A Unifying Framework for Distributed Inference in Networked Systems: ARRA (with Biao Chen and Hao Chen), $350,000, 2009-2012, National Science Foundation.
86. Sensor Fusion Algorithm Research at ARL, $17,116, 2009, Booz Allen Hamilton, Inc.
87. Advanced Radar Data Fusion: Application of MIMO Radar Technology, Phase II (with R. Niu), Department of Defense, through Andro Computational Solutions, LLC, 2009-2011, $303,000.
88. MRI : Acquisition of a High Performance Computer Cluster Supporting Computational Science Research and Learning, National Science Foundation, CNS-0922644, $190,010; 2009-2012, Senior personnel for effort at Montclair State University, NJ
89. Forecasting Change and Societal Threats (with Hermann, Mohan), S.U. Chancellor's Leadership Grant, $100,000, 7/2009-6/2011.
90. Road Network Conflation Based on Radar Tracks (with Ruixin Niu), 12/2010-12/2013, Air Force Research Laboratory, $150, 000
91. Adaptive Compressed Sensing for Mission Prioritized Data Collection and Analysis (with M. Glauser), Leskiw Associates, 11/2011-7/2012, $46,000.
92. Dynamic Cross-Layer Routing using Cognitive Spectrum Allocation Techniques (with C. Mohan), $42,736, 4/2011-1/2012, Critical Technologies
93. Beyond Spectrum: Multiobjective Joint Optimization for Efficient Utilization of the Radio Frequency Transmission (with C. Mohan and W. Du), $394,280, 2010-2011, ANDRO Computational Solutions
94. Cyber Superiority for Air Force Combatant Commanders: Integrated Air/Space/C2/Cyber Dynamic Spectrum Exploitation for Enhanced Situational Awareness Phase II, $285,000, 2/2011-9/2012 ANDRO Computational Solutions, LLC.
95. Dynamic Information Collection and Fusion (with Biao Chen), $900,000, 2010-2015, University of Illinois.
96. Hard-soft Information Fusion (with C. Mohan and K. Mehrotra), $307,476, 2010-2013, Department of Army.
97. Adaptive Information Fusion and Sensor Management for Enhanced Situational Awareness (with R. Niu), $525,000, 2010-2013, Air Force Office of Scientific Research.
98. Centers for Advanced Technology (CAT) Program, $3.7M, 2011--2015, NY State Office of Science, Technology, and Academic Research.
99. Cognitive Radio Spectrum Management and Waveform Adaptation for Advanced Wideband Space Communication Systems, ANDRO Computation Solutions, 4/2012-1/2013, $33,000.
100. Automatic Modulation Classification, ANDRO Computation Solutions, 9/2012-9/2014, $185K

101. Compressive Sensing based Inference in Distributed Networks, NSF, 8/2013-7/2016, $324,915
102. Social Media Assisted Heterogeneous Information Fusion for Data-to-Decision Applications, US Army, 9/2013-9/2016, $225K
103. Fusion of Statistically Dependent Heterogeneous Information Sources, Army Research Office, 7/2014-6/2017, $412,890
104. EAGER: Measuring Continental Scale Anthropogenic Impacts on the Environment through Acoustics (with Susan Parks of Biology), 8/2013-7/2015, NSF $200K
105. Copula Based Uncertainty Modeling for Information Fusion, 5/2014-12/2014, Boston Fusion Corp., $40000.
106. A Framework to Implement the Cyber Survive and Recover Simulator (CSRS) Demo, 5/2014-9/2014, AFRL, $78261
107. Enhancement of Electronic Claims Adjudication and Management System (eCAMS), 11/2014-8/2015, $44,936.
108. CASE - The Center for Advanced Systems and Engineering, Empire State Development Corp., 7/2015-6/2016, $767,667.
109. Uncertainty Characterization Using Copulas (UC)2, Boston Fusion Corp., 10/2015-9/2017, $350,000.
110. High Quality/Low Dimension Data for Sensor Integration, ANDRO Computational Solutions, 7/2015-4/2016, $55,000.
111. Dynamic Data Driven Information Fusion for Situational Awareness (with Biao Chen), AFOSR, 10/2015-9/2019, $1.09 M.
112. CASE - The Center for Advanced Systems and Engineering, Empire State Development Corp., 9/2015-6/2020, $4,452,467.
113. Leveraging Massively Parallel Data Processing for Large-Scale Information Fusion with a GPU Cluster (with Jian Tang and Biao Chen), AFOSR, 9/2016-9/2017, $294, 638
114. Management of Mobile Phone Sensing via Sparse Learning (with Yingbin Liang and Makan Fardad), NSF, 9/2016-8/2019, $400,000
115. Asynchronous Network Signal Sensing and Classification (AMC), ANDRO, 1/2016-12/2017, $150,000.
116. Cyber-Domain Spectrum Exploitation (CyberSE), ANDRO, 1/2016-12/2017, $100,000.
117. Universal Multivariate Information Measures for Multisensor Inference (UMIMMI), Boston Fusion, $29,500, 7/2016-3/2017
118. High Quality/Low Dimension Data for Sensor Integration, ANDRO, $ 206,000, 9/2016-9/2018
119. Causal Inference for Situation Awareness (CISA), Lockheed Martin, $100,000, 7/2016-11/2016
120. Fundamental Limits of Learning (FunLOL), Lockheed Martin (with Yingbin Liang and Biao Chen), $299, 500, 9/2016-9/2017.
121. Contextual Reasoning for Object Identification, Novateur, $47501, 2/2016-1/2017
122. Syracuse University Planning Grant: I/UCRC for Alternative Sustainable and Intelligent Computing (with Qinru Qiu and Yanzhi Wang), NSF, $15000, 3/2017-2/2018
123. Multi-Modality Sensing and Information Fusion, AFOSR, $183,192. 8/2017-7/2018
124. Heterogeneous Data Fusion and UTM Simulation Tool for UAV Applications,(with others) Thales USA,$25K, 8/2017-8/2020

125. BLACK: Simultaneous Tracking and Optimal Resource Management (BLACK-STORM), Lockheed, $99,850, 10/2017-10/2018

GRADUATE THESES SUPERVISED:

<u>**M.S. Theses**</u>

1. M. Yanilmaz, "An Approach to the Integration of Voice and Data Over Multiple Access Channels", Dec. 1981.
2. W.H. Debany, Jr., "Probability Expressions with Applications to Fault Testing in Digital Networks", Jan. 1983.
3. A.M. Kabakcioglu, "Heuristic Algorithms for Switching Function Minimization," March 1984.
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30. Ruoyu Li, Modulation Classification and Parameter Estimation in Wireless Networks, June 2012.

Ph.D. Dissertations

1. V.C. Vannicola, "Modeling and Properties of Modulated RF Signals perturbed by Oscillator Phase Instabilities and Resulting Spectral Dispersion," May 1982.
2. K. Sriram, "A Study of Multiplexing Schemes for Digitized Voice and Data", Sept. 1983.
3. I.Y. Hoballah, "On the Design and Optimization of Distributed Signal Detection and Parameter Estimation Systems", Nov. 1986.
4. M. Barkat, "On Adaptive Cell-Averaging CFAR Radar Signal Detection", April 1987.
5. Z. Chair, "On Hypothesis testing in distributed Sensor Networks," April 1987.
6. J. Evanowsky, "Efficient Error Models for Digital Communication Channels", April 1988.
7. M. M. Al-Ibrahim, "On Distributed Sequential Hypothesis Testing", Ph.D. Dissertation, Dec. 1989.
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9. S. Al-hakeem, "Decentralized Bayesian Hypothesis Testing with Feedback", December 1990.
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