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Areas of Interests:

Wireless Communications, detection, particularly of transient and/or short duration signals; target tracking and data association; classification/learning from data; machine diagnosis and prognosis; estimation and signal processing.

Education:

1986 Ph.D. Electrical Engineering, Princeton University, NJ
1984 M.S. Electrical Engineering, Princeton University, NJ
1982 B.A.Sc. Engineering Science, University of Toronto, Canada.

Professional Experience:

1986-1992 Assistant Professor of Electrical and Systems Eng., Univ. of Conn.
1992-1999 Associate Professor of Electrical and Systems Eng., Univ. of Conn.
1999-present Professor of Electrical and Computer Eng., Univ. of Conn.

Major Professional Activities:

1. IEEE Fellow.
2. Associate editor for IEEE Transactions on Systems, Man, and Cybernetics since 6/98.
3. Associate editor for Target Tracking and Data Fusion for IEEE Transactions on Aerospace and Electronic Systems since 10/98. (Also associate editor for IEEE AES Magazine.)
4. Program Committee Co-Chair, 2003 IEEE Systems, Man & Cybernetics Conference (October 2003, Washington DC).
5. Co-organizer of "System Diagnosis and Prognosis: Security and Condition Monitoring Issues" Conference at SPIE Aerosense 2001, 2002 & 2003, Orlando FL.

6. Program Committee Co-Chair, 1999 ISIF Fusion Conference.
7. Member of IEEE Signal Processing Society's "Sensor Array and Multi-channel" Technical Committee (1/98-12/98, 4/00-).
8. Member of IEEE Signal Processing Society's "Underwater Acoustical Signal Processing" Technical Committee (6/95-12/97).
9. Co-chair for "Remote Sensing" Track at 2000, 2001, 2002 & 2003 IEEE Aerospace Conference.

Publications: from 6 book chapters, 64 journal articles (plus 13 submitted), and 167 conference papers:

Related to the Proposed Research:

1. P. Willett, P. Swaszek, and R. Blum, "The Good, Bad, and Ugly: Distributed Detection of a Known Signal in Dependent Gaussian Noise," *IEEE Transactions on Signal Processing*, pp. 3266-3279, December 2000.
2. D. Warren and P. Willett, "Optimum Quantization for Detector Fusion: Some Proofs, Examples, and Pathology," *Journal of the Franklin Institute*, No. 336, pp. 323-359, 1999.
3. C. Rago, P. Willett, and Y. Bar-Shalom, "Censoring Sensors: A Low Communication Rate Scheme for Distributed Detection", *IEEE Transactions on Aerospace and Electronic Systems*, pp. 554-568, April 1996,
4. P. Willett and P. Swaszek, "The Performance Degradation from One-Bit Quantized Detection", *IEEE Transactions on Information Theory*, pp. 1997-2002, November 1995.
5. P. Swaszek and P. Willett, "Parley as an Approach to Distributed Detection", *IEEE Transactions on Aerospace and Electronic Systems*, pp. 447-457, January 1995.
6. P. Willett, M. Alford, and V. Vannicola, "The Case for Like-Sensor Pre-Detection Fusion", *IEEE Transactions on Aerospace and Electronic Systems*, pp. 986-1000, October 1994.
7. Y. Sun, P. Willett and P. Swaszek, "A Non-Gaussian Problem that Arises in Fused Detection in Clutter," *to appear in IEEE Signal Processing Letters*, 2004.
8. V. Matta, S. Marano and P. Willett, "Quantization for Distributed Estimation with Data Association", *to appear in IEEE Transactions on Signal Processing*.
9. B. Chen and P. Willett, "On the Optimality of Likelihood Ratio Test for Local Sensor Decision Rules in the Presence of Non-Ideal Channels", *submitted to IEEE Transactions on Information Theory*.

Other Recent Publications:

1. T. Luginbuhl and P. Willett, "Estimating The Parameters Of General Frequency Modulated Signals", *IEEE Transactions on Signal Processing*, pp. 117-131, January 2004.
2. S. Marano, V. Matta and P. Willett, "Sequential Detection of Almost-Harmonic Signals", *IEEE Transactions on Signal Processing*, pp. 395-406, February 2003.
3. R. Lynch and P. Willett, "Bayesian Classification and Automatic Feature Reduction Using Uniform Dirichlet Priors", *IEEE Transactions on Systems, Man, and Cybernetics B*, pp. 448-464, June 2003.
4. P. Willett, D. Blair and Y. Bar-Shalom, "On the Correlation Between Horizontal and Vertical Monopulse Measurements", *IEEE Transactions on Aerospace and Electronic Systems*, pp. 533-549, April 2003.
5. R. Lynch and P. Willett, "Use of Bayesian Data Reduction for Fusion of Legacy Classifiers", *Information Fusion*, (Elsevier Science), Vol. 4, No. 1, pp. 23-34, March 2003.
6. J. Luo, K. Pattipati, P. Willett and G. Levchuk, "Optimal Grouping Algorithm for a Group Decision Feedback Detector in Synchronous Code-Division Multiple-Access Communications," *IEEE Transactions on Communications*, pp. 341-346, March 2003.
7. D. Pham, K. Pattipati and P. Willett, "A Generalized Probabilistic Data Association Detector for Multiple Antenna Systems," *to appear in IEEE Communications Letters*.

8. D. Pham, K. Pattipati, P. Willett and J. Luo, "An Improved Complex Sphere Decoder for V-BLAST Systems," *to appear in IEEE Signal Processing Letters*.
9. J. Luo, K. Pattipati, P. Willett and G. Levchuk, "Fast Optimal and Sub-Optimal Any-Time Algorithms for CWMA Multiuser Detection Based on Branch and Bound," *to appear in IEEE Transactions on Communications*.

Ph.D. Graduated over the Past Five Years: Alain Barthelemy, Tod Luginbuhl, Robert Lynch, Biao Chen, Ruixin Niu, Zhen Wang and Yanhua Ruan.

PI's Own Advisor: Professor John B. Thomas, Princeton University.