

Biography of D. Kazakos

Demetrios Kazakos was born in Greece. **He is a United States Citizen.** He graduated from the National Technology University of Athens, with a degree in Electrical, Mechanical and Industrial Engineering. He received a Master's Degree from the Electrical Engineering Department, Princeton University. During his study at Princeton University he was an Alcoa Fellow. He subsequently completed his Ph.D. studies at the University of Southern California, where he specialized in Statistical Communication Theory. For a two year period, was a Postdoctoral Research Associate of the National Research Council at the National Aeronautics and Space Administration, Johnson Space Center, Houston, Texas. At that time NASA was involved in the development of the Earth Resources Technology Satellite, and he was employed in the creation of novel statistical data processing algorithms for multi-spectral image data obtained by the satellite. He developed real time estimation procedures that performed well without any loss in performance, completely alleviating the problem of storage of huge amounts of data. His statistical processing algorithms were selected for the final implementation of the Large Area Crop Inventory Experiment (LACIE).

Following his postdoctoral appointment, he accepted the position of Assistant Professor of Electrical Engineering at the State University of New York at Buffalo. His research on Statistical Data Processing for Remote Sensing continued, and he received funding from the National Science Foundation. At the same time, he developed many contacts at Rome Laboratory, a major research and development center of the U.S. Air Force, and he obtained funded contracts on studies of signal processing for radar systems. Later he moved to the position of Associate Professor of Electrical Engineering at the University of Virginia. He continued a high level of research activity through publications and funded contracts and grants. His funding sources have been:

- National Science Foundation
- Office of Naval Research
- Rome Laboratory
- Air Force Office of Scientific Research
- Army Laboratory
- Private Industry

In 1985 he was promoted to Professor of Electrical Engineering, with a joint tenured appointment to the Department of Mathematics ,at the University of Virginia.

CITIZENSHIP:
U.S.A.

In the early 80's the European Community started various funded research projects to consortia of companies and universities of member countries. In addition to his research activities in the United States, he became active in European research activities. He started an affiliation with HITEC, INC., a Greek high technology firm involved in computer-related research and development projects. Typical projects have been:

- Computer Integrated Manufacturing; development of simulation tools and of imaging techniques;
- Robotics and stereo vision;
- Biomedical image processing projects, e.g., automated recognition and counting of blood cells.
- Development of specialized software for various information technology applications in automation.

From 1983 to 1993 he was an Associate Director for Research and Development of HITEC, devoting about 4 months per year to this position.

In 1985, together with another colleague, he started the U.S. branch of HITEC, INC, of which he became President in 1993, a position he maintained until 2001. This branch has been active in research projects funded by defense contracts, some of them having a "CLASSIFIED" designation. He received "Secret" security clearance.

He has been very active in various IEEE professional groups, in organizing conference sessions, in participating in technical committees, and presenting papers in conferences. In 1992 he was elected IEEE Fellow for his research achievements in the areas of multi-user communication systems and statistical communication theory. Also, in 1992, he was named the Distinguished Lecturer of the IEEE Communication Society.

- In 1995, he was the Technical Program Chair of the GLOBECOM 95 Communication Theory Conference.
- In 1999-2000, he was the Technical Program Chair for the IEEE Wireless Communication and Networking Conference of 2000 (WCNC 2000). This is the major wireless conference, with 850 attendees and most wireless communications companies in attendance.

November 2007: After one year's efforts, Demetrios Kazakos managed to secure major funding from the U.S. Department of Homeland Security. Under his leadership and initiatives, Texas Southern University was designated as a co-leader of a National Center of Excellence Consortium in Transportation Security, funded at \$72 Million, over four years, by the U.S. Department of Homeland Security, starting in the Spring of 2008. The total amount brought to TSU, funded by the U.S. Dept. of Homeland Security, due to the individual efforts of Dr. Kazakos for 2008-2012 is: \$72/7 = \$10.28 Million (7 member consortium). Unfortunately, the U.S. Department of Homeland Security reduced the amount to TSU to only \$200,000.

September 10, 2008: After Demetrios Kazakos, as Dean, changed the leadership of NASA's University Research Center, the new team was successful in the competitive renewal. Among 55 proposals, TSU's proposal was the second best among the 7 successful ones. The Center is funded for 5 years at \$1 M/year. Demetrios Kazakos is Co-PI. The name is: Center for Bio-Nanotechnology and Environmental Research.

See also items 24-29 in the Grants and Contracts segment. The total funding brought to Texas Southern University by the individual efforts of Dr. D.Kazakos and from all external sources for 2006-2012 is: \$10.71 Million. Included in the total is the recent \$5 million CREST Center on Complex Networks, fully credited to Dr.Kazakos's actions.

D. Kazakos

Administrative Experience

- (A) During the period 1983-1993, he was the Associate Director for Research and Development of HITEC, INC, a high technology firm involved in software development, robotics, biomedical image processing, and defense computer projects. The main HITEC office is in Athens, Greece, and HITEC had been involved in several research and development projects funded by the European Community. He was occupied four months of each year in the Associate Director for Research and Development position for the above period, simultaneously with his position as Professor in the Electrical Engineering Department and the Mathematics Department of the University of Virginia.

He became later the President of the U.S. branch of HITEC, INC, from 1993 to 2001. This branch has been contracted by the U.S. Department of Defense on several classified and non-classified research and development projects.

- (B) In the fall of 2001 he moved to the University of Toledo to chair the Electrical Engineering and Computer Science Department. He was leading major successful accreditation and assessment efforts for both programs in the Department, during the same period. During his tenure at the University of Toledo, he hired six new faculty members.
- (D) In the summer of 2004 he moved to the University of Idaho to chair the Electrical and Computer Engineering Dept.
- (E) In August 2006, he became the Dean of Science and Technology at TEXAS SOUTHERN UNIVERSITY, in HOUSTON, TEXAS, for a two year period. From Sept. 2008, until Sept 2009 he moved to the position of Chief Engineer of the NASA's University Research Center for Bio-Nanotechnology and Environmental Research, funded for 5 years at \$1 M/year.

- (F) During the period: Sept 2009- Sept 2011, Dr Kazakos was Program Director at the National Science Foundation, in charge of the \$30 million CREST program: "CENTERS OF RESEARCH EXCELLENCE IN SCIENCE AND TECHNOLOGY". His experience and help resulted in the award in Sept 2011 to Texas Southern University of the CREST Center on Complex Networks, funded at \$5 million over 5 years. Without his experience and help, this award would have been impossible.**

DEMETRIOS KAZAKOS

Present Position: Professor of Mathematics, Texas Southern University
Most Recent Position,
Sept 2009-Sept 2011

**Program Director, Centers of Research Excellence in
Science and Technology, (CREST)
National Science Foundation.**

E-mail:..... kazakosd@tsu.edu

Education: Diploma in Electrical, Mechanical and Industrial Engineering from National Polytechnic University of Athens, Greece ,1967
Master of Arts in Electrical Engineering, Princeton University ,1970
Doctor of Philosophy in Electrical Engineering,
University of Southern California , 1973

Positions:

Present: Professor of Mathematics, Texas Southern University
2009-2011 Program Director, National Science Foundation
2006- 2008: Professor and Dean, College of Science and Technology,
Texas Southern University
2004-2006 Professor and Chairman, Electrical and Computer Engineering Dept
University of Idaho
2001-2004 Professor and Chairman, Electrical Engineering and Computer Science Dept,
University of Toledo
1993-2001 President, HITEC, INC
1983-1993 Vice President for Research, HITEC,INC
1980-1993 Associate Professor/Professor of Electrical Engineering and Mathematics,
University of Virginia
1975-1980 Assistant Professor, Electrical Engineering Department,
State University of New York at Buffalo, New York

Research and Teaching Interests: Communication Theory, Computer Communication Networks; Image Processing; Estimation and Detection of Signals; Neural Networks

Honors:

- Elected Fellow of the Institute of Electrical and Electronics Engineers, for contributions to “detection and estimation theory, with applications to “multi-user data communications and pattern recognition.”
Effective: January 1,1992
- **Elevated to IEEE Life Fellow; Effective: 2009**
- Elected Distinguished Lecturer for IEEE Communications Society, 1992.

A. Reviewer for Journals:
IEEE Proceedings

Automatica

Annals of Statistics

Algorithmica

Sankhya

IEE Transactions on

- Information Theory
- Communications
- Computers
- Pattern Analysis and Machine Intelligence
- System, Man, and Cybernetics
- Automatic Control

B. Reviewer of Proposals for:

National Science Foundation (3 different programs)

Army Research Office

Air Force Office of Scientific Research

C. Organizer of Conference Sessions:

1. Seventh Pittsburgh Conference on Modeling and Simulation, 1976
2. Ninth Pittsburgh Conference on Modeling and Simulation, 1978
3. 1979 Conference on Decision and Control
4. 1981 International Conference on Communications
5. 1981 National Telecommunications Conference
6. 1982 Global Communications Conference
7. 1985 International Conference on Communications
8. 1987 Conference on Decision and Control
9. 1988 Conference on Decision and Control
10. 1992 1st U.S./Japan Conference on Frontiers of Statistical Modeling-
An Information Theoretic Approach, Member of Program Committee
11. 2003 Session on “Wireless Communications” at the 2003 Richard
Tapia Conference on Diversity in Computing, October 2003.

D. Chairman of Conference Sessions:

12. Seventh Pittsburgh Conference on Modeling and Simulation, 1976
Ninth Pittsburgh Conference on Modeling and Simulation, 1978
13. 1979 Conference on Decision and Control
14. 1979 Information Theory Symposium
15. 1981 Johns Hopkins Conference on Information Sciences and Systems
16. 1981 International Conference on Communications
17. 1981 National Telecommunications Conference
18. 1981, 1987, 1988 Conference on Decision and Control

E. Technical Program Chair

- 1995 GLOBECOM 95 Communication Theory Mini-conference
- 2000 Wireless Communications and Networking Conference
- 2002 Wireless Networking Theory Symposium, ICC 2002

F. Technical Committee Memberships

- IEEE TC on Communication Theory
- IEEE TC on Personal Communications
- IEEE TC on Switching

G. Editorships

- IEEE Transactions on Communications. 1988 – 1998
- Wireless Networking Journal, 1998 – 2008
- Mobile Networking and Distributed Computing, 2000-2008

- WSEAS Transactions on Mathematics

- 21st Century Engineer Journal

H. Publications

Books

1. Nonparametric Methods in Communication Systems, co-editor and contributor, Marcel Dekker, Inc., New York (1977).
2. (with P. Papantoni-Kazakos) Detection and Estimation, Computer Science Press, 1989.

Book Chapters

1. "On Nonparametric Estimation of Probability Density Functions," in Non-parametric Methods in Communications, Marcel Dekker (1977).
2. (with P. Papantoni-Kazakos) "Sharing a Processor for Monitoring Changes in Quality of Several Communications Links," in Advances in Communications, D. Reidel Publishing Co. (1980).
3. "Modeling of Multidimensional Signals with Applications to Images," in Progress in Multidimensional Systems Theory, Marcel Dekker (December 1986).
4. "Asymptotically Tight Error Bounds for Multihypothesis Testing Through Large Deviation Theory," Transactions of the Eleventh Prague Conference 1990, Volume B, pp. 61-92, Kluwer Academic Publishers, 1992.
5. "Parameter Estimation," with Stella Batalama, Second Edition of the Electrical Engineering Handbook, edited by Richard Dorf, CRC Press, 1995
6. "Low Sample Support Adaptive Parameter Estimation and Packet-Data Detection for Mobile Communications" by H.Quian, S.Batalama, and D.Kazakos, Third Edition of the Electrical Engineering Handbook, edited by Richard Dorf, CRC Press, December 2005
7. "Parameter Estimation" by P.Xiong, S.N.Batalama and D.Kazakos, Third Edition of the Electrical Engineering Handbook, edited by Richard Dorf, CRC Press, December 2005

Refereed Journal Papers

- 1 (with co-author) "Concentration of Binary FM Spectra," IEEE Trans. on Aerosp. & Elec. Syst., AES Vol. 11, No. 4 (July 1975).
2. (With co-author) "The Limiting Density of a Nonlinear System," Information Sciences, Vol. 11, No. 4 (1976).
3. (With co-author) "Moments and Error Expressions in Polynomial Minimum Mean Square Estimation," Information Sciences (May 1976).
4. "Recursive Estimation of Prior Probabilities Using a Mixture," IEEE Trans. on Info. Theory (March 1977).
5. "Maximin Linear Discrimination, I," IEEE Trans. on Syst., Man and Cybern. (September 1977).
6. "Computational Savings of M.L. Detectors," IEEE Trans. on Info. Theory (January 1978).

7. "Quantization Complexity and Training Sample Size in Detection," IEEE Trans. on Info Theory (March 1978).
8. "On the Maximization of Divergence," IEEE Trans. on Info. Theory (July 1978).
9. "On the Optimal Linear Feature," IEEE Trans. on Info Theory September 1978).
10. "The Bhattacharyya Distance and Detection between Markov Chains," IEEE Trans. on Info. Theory (November 1978).
11. "Low Order Approximations of Markov Chains in a Decision Theoretic Context," IEEE Trans. on Info. Theory (January 1980).
12. (with co-author) "Sequential Detection between Poisson Processors," IEEE Trans. on Inf. Theory (January 1980).
13. (with co-author) "A Decision Theory Approach to the Approximation of Discrete Probability Densities," IEEE Trans. on Pattern Analysis and Machine Intelligence (January 1980).
14. (with co-author) "An Improved Decision-Directed Detector," IEEE Trans. on Info. Theory (January 1980).
15. "On Resolution and Asymptotic Discrimination between Gaussian Stationary Vector Processes and Dynamic Models," IEEE Trans. on Automatic Control (April 1980).
16. "Choice of Kernel Function for Density Estimation," IEEE Trans. Pattern Analysis and Machine Intelligence (May 1980).
17. (with co-author) "On an Optimal Linear Classification Procedure," Pattern Recognition Journal (1980).
18. (with co-author) "Spectral Distance Measures Between Gaussian Processes," IEEE Trans. on Automatic Control (October 1980).
19. "Convergence Bounds for Bayes Estimators," IEEE Trans. on Info. Theory, (January 1981).
20. "Spectral Distance Measures between Time-Continuous Vector Gaussian Processes," IEEE Trans. on Info. Theory (July 1982).
21. "Signal Detection under Mismatch" IEEE Trans. on Info. Theory (July 1982).
22. "Statistical Discrimination Using Inaccurate Models," IEEE Trans. on Info. Theory (September 1982).
23. "Distance Measures and Estimation Performance Bounds for Continuous Time Data," IEEE Trans. on Info. Theory (November 1982).

24. (with co-author) "Comments on Corrections on Convergence Bounds for Bayes Estimators," IEEE Trans. on Info. Theory (March 1983).
25. (with co-author) "Sequential Nonparametric Detector with Markov-Dependent Data," IEEE Trans. on Aerospace and Electronic Systems (May 1983).
26. "Robust Noiseless Source Coding Using Game Theory," IEEE Trans. on Info Theory (July 1983).
27. "New Results on Robust Quantization," IEEE Communications (August 1983).
28. (with L. Merakos) "On Retransmission Control Policies in Multi-access Channels," IEEE Transactions on Automatic Control, (January 1985).
29. "Optimal Constrained Representation and Filtering of Signals," Signal Processing July 1983.
30. (with two co-authors) "Robust Prediction and Interpolation for Vector Stationary Processes," Probability Theory and Related Fields, Vol. 72 (1986), pp. 589-602.
31. (with co-author) "A Limited Sensing Protocol for Multi-User Packet Radio Systems," IEEE Transactions in Communications (April 1989).
32. I. Stavrakakis, D. Kazakos, "On the approximation of the output process of multi-user random access communication networks," IEEE Transactions on Communications (February 1990).
33. "New Error Bounds and Optimum Quantization for Multi-sensor Distributed Signal Detection," IEEE Trans. On Communications (August 1992).
34. "Asymptotically Optimum Quantization for Detection," IEEE Trans. on Communications, accepted.
35. "Bayes Error Probability with Inaccurate Threshold," Electronics Letters, Vol. 25, No. 14, (July 1989).
36. I. Stavrakakis, D. Kazakos, "Performance Analysis of a Star Topology of Interconnected Networks under 2d-Order Markov Network Output Processes," IEEE Trans. on Communications (October 1990).
37. I. Stavrakakis, D. Kazakos, "A Multi-user Random Access Communications Systems for Users With Different Priorities," IEEE Trans. on Communications (November 1991).

38. P. Papantoni-Kazakos, D. Kazakos and K. Birmiwal, "Predictive Analogto-Digital Conversion for Resistance to Data Outliers," Information and Computation, Vol. 97, No. 1, (March 1992).
39. I. Stavrakakis and D. Kazakos, "A Limited Sensing Protocol for Multi-User Packet Radio Systems," IEEE Trans. on Communications (April 1989).
40. D. Kazakos, "Asymptotically Tight Error Bounds for Multihypothesis Testing Using Multisensor Data," IEEE Trans. on Systems, Man, and Cybernetics, (September 1991) (invited paper).
41. D. Kazakos and A. B. Cooper, III, "Exponential Error Bounds on Codes for Noisy Channels with Inaccurately Known Statistics and for Generalized Decision Rules," IEEE Trans. on Communications (September 1993).
42. S. Batalama, A. Koyiantis, P. Papantoni-Kazakos, and D. Kazakos, "Feed Forward Neural Structures in Binary Hypothesis Testing," IEEE Trans. on Communications (July 1993).
43. S. Batalama and D. Kazakos, "Parameter Estimation," Electrical Engineering Handbook, CRC Press, Inc., (1993).
44. H. Delic, P. Papantoni-Kazakos, and D. Kazakos, "Fundamental Structures and Asymptotic Performance Criteria in Decentralized Binary Hypothesis Testing," IEEE Trans. on Communications (January 1995).
45. (with two co-authors), "Semidynamic and Dynamic Transmission Algorithms for Multiplexing Voice with Data," Telecommunications Systems, pp. 341-378, (May 1995).
46. D. Pados, P. Papantoni-Kazakos, D. Kazakos, and A. Koyiantis, "On-Line Threshold Learning for Neyman-Pearson Distributed Detection," IEEE Trans. On Systems, Man, and Cybernetics (November 1995).
47. D. Pados, K. W. Halford, D. Kazakos, and P. Papantoni-Kazakos, "Distributed Binary Hypothesis Testing with Feedback," IEEE Trans. On Systems, Man, and Cybernetics (January 1995).
48. S. N. Batalama and D. Kazakos, "On the Robust Estimation of the Autocorrelation Coefficients of Stationary Sequences," IEEE Trans. On Signal Processing (October 1996).
49. S. N. Batalama and D. Kazakos, "On the Generalized Cramer-Rao Bound for the Estimation of the Location," IEEE Trans. on Signal Processing (February 1997).

50. D. Kazakos, L. F. Merakos, and H. Delic, "Random Multiple Access Algorithms Using a Control Mini-Slot," IEEE Trans. On Computers (April 1997).
51. D.Kazakos, S .Makki, "When are two multivariate random processes indistinguishable", Journal of Combinatorial Optimization, (JOCO) Vol 11, No 3, May 2006.
52. "Asymptotically Optimum Quantization for Detection," with N. Zervos, submitted.
53. "Upper Bounds on the Overflow Probability for Queues With Long Term Dependent Input," submitted.
54. D.Kazakos, S.Makki, "When are two multivariable processes indistinguishable", International Journal of Combinatorial Optimization, Vol 11, No 3, pp 263-278, 2006
55. D.Kazakos, S.Makki, W.Peng., "New Performance Bounds in Signal Parameter Estimation Under Mismatch", International Journal of Applied Mathematical Sciences, (JAMS), Vol 1, no 19, pp. 895-908, 2007

Book Reviews

"Picture Processing and Digital Filtering," T. S. Huang, Editor, IEEE Trans. on Pattern Analysis and Machine Intelligence (March 1981).

"Neural Networks and Learning Automata: Theory and Applications," K. Najim, A. S. Poznyak, and J. Thibault, Academic Press, Inc. (February, 1993).

Papers in Refereed Conference Proceedings

1. (with co-author) "Maximum Likelihood Detection of a Markov Source Transmitted through a Memoryless Gaussian Channel," 7th Annual Princeton Conference on Info. Sciences & Systems (March 1973) (abstract only).
2. (with co-author) "Signal Design for the Fading Time Selective Random Channel with Additive White Noise," 7th Annual Princeton Conference on Info. Sciences & Systems (March 1973) (abstract only).
3. "Maximum Likelihood Decoding for the Random Multipath Channel," 1974 IEEE Int. Symposium on Information Theory, Notre Dame, Indiana (October 1974) (abstract only).

4. "Construction of a New Class of Complex Sequences with Almost Impulse Correlation," Eighth Annual Princeton Conference on Information Sciences and Systems (March 1974) (abstract only).
5. (with co-author) "Moments and Error Expressions in Polynomial Minimum Mean Square Estimation," Eighth Annual Princeton Conference on Information Sciences and Systems, Princeton University (March 1974).
6. "Optimal Design of an Unsupervised Adaptive Classifier with Unknown Priors," 1975 Conference on Information Sciences and Systems, The Johns Hopkins University (March 1975).
7. "Recursive Estimation of Proportion in Earth Observations," 1975 Symposium on Machine Processing of Remotely Sensed Data, Purdue University (1975).
8. "Feature Extraction from Multivariate Gaussian Observations in Estimation and Detection Problems," Fourth International Symposium on Multivariate Analysis, Pittsburgh University (June 1975) (abstract only).
9. "A Decision-Directed Detector for the Phase-Incoherent Gaussian Channel," ITC Technical Conference (October 1975).
10. "Data Compression in Maximum Likelihood Estimation of Prior Probabilities," 1976 IEEE International Symposium on Information Theory (June 1975) (abstract only).
11. "The Bayes-Optimal Linear Feature of Discriminating between Two Gaussian Hypotheses," Joint Workshop on Pattern Recognition and Artificial Intelligence, Cape Code, MA (June 1976) (abstract only).
12. "A Two Stage Classifier for Remotely Sensed Data," Seventh Annual Pittsburgh Conference on Modeling and Simulation, University of Pittsburgh (April 1976).
13. "Optimal Choice of the Kernel Function for Kernel-Type Density Estimators," Allerton Conference on Circuits and Systems (October 1976).
14. (with co-author) "Sequential Nonparametric Detection with Dependent Data," 1977 John Hopkins Conference on Information Sciences and Systems, John Hopkins University (March-April 1977).
15. (with two co-authors) "A Kalman Filtering Formulation for the Linear Reduction of Gauss-Markov Data," 1977 John Hopkins Conference on Information Sciences and Systems (1977).

16. "Efficient Spline Fit," 1977 IEEE Workshop on Picture Data Description and Management, Chicago, IL (April 1977).
17. (with co-author) "Efficient Cubic Spline Fit," 1977 IEEE Conference on Acoustics, Speech and Signal Processing, Hartford, CT (May 1977).
18. "Maximum Linear Discrimination, I," 1977 IEEE Conference on Pattern Recognition and Image Processing, Troy, NY (June 1977).
19. (with two co-authors) "Linear Dimensionality Reduction of Stationary Vector Gaussian Processes," 1977 Allerton Conference on Communication, Computers and Control (September 1977).
20. "Quantization Complexity and Training Sample Size in Pattern Recognition," IEEE International Symposium on Information Theory (October 1977) (abstract only).
21. (with co-author) "Admissible Linear Multiclass Discrimination," IEEE International Symposium on Information Theory (October 1977) (abstract only).
22. (with co-author) "Robust Rate Distortion Theory," IEEE International Symposium on Information Theory, Cornell University (October 1977) (abstract only).
23. "On Asymptotically Perfect Discrimination," Allerton Conference on Communication, Computers and Control (September 1977).
24. "A New Estimate of Class Proportions," IEEE Computer Society Workshop v.u. on "Pattern Recognition and Artificial Intelligence", Princeton, NJ (April 1978) (abstract only).
25. (with co-author) "Asymptotic Discrimination of Gaussian Processes," 1978 IEEE Computer Society Pattern Recognition and Image Processing Conference, Chicago, IL (May-June 1978).
26. (Invited) (with co-author) "Maximum Likelihood Sequence Estimation in the Presence of Infinite Intersymbol Interference," International Conference on Communications, Boston, MA (June 1979).
27. (with co-author) "Spectral Distance Measures between Gaussian Processes," 1979 International Symposium on Information Theory, Grignano, Italy (June 1979) (abstract only).
28. (with co-author) "Sequential Detection between Poisson Processes," 1979 John Hopkins Conference on Information Sciences and Systems (March 1979).

29. "Convergence Bounds for Bayes Estimation," 1979 Johns Hopkins Conference on Information Sciences and Systems (March 1979).
30. "On Resolution and Exponential Discrimination between Gaussian Stationary Vector Processes and Dynamic Models," 1979 Conference on Decision and Control, Fort Lauderdale, FL (December 1979).
31. (with co-author) "Spectral Distance Measures between Gaussian Processes," 1980 IEEE International Conference on Acoustics, Speech and Signal Processing, Denver, CO (April 1980).
32. "Detection Using Inaccurate Statistics," Fourteenth Annual Conference on Information Sciences and Systems, Princeton University (March 1980).
33. "Statistical Discrimination Using Inaccurate Models," 5th IEEE International Conference on Pattern Recognition, Miami, FL (December 1980)
34. "Performance Bounds for Parameter Estimation from Time-Continuous Observations," 19th IEEE Conference on Decision and Control, Albuquerque, NM (December 1980).
35. "A New Approach to Robust Signal Detection," 1981 John Hopkins Conference on Information Sciences and Systems, Baltimore, MD (March 1981).
36. "Upper and Lower Error Bounds for Noisy Channel Coding Under Mismatch," 1981 Johns Hopkins Conference on Information Sciences and Systems, Baltimore, MD (March 1981).
37. "On the Design of Robust Quantizers," 1981 National Telecommunications Conference, New Orleans, LA (November-December 1981).
38. "Modulation and Coding Under Mismatch," 1981 National Telecommunications Conference, New Orleans, LA (November-December 1981).
39. "Robust Quantization," 1982 Princeton Conference on Information Sciences and Systems (March 1982).
40. "Robust Data Compression," 1982 Princeton Conference on Information Sciences and Systems (March 1982).
41. "New Results on Robust Quantization," 1982 International Symposium on Information Theory, Les Arcs, France (June 1982) (abstract only).

42. “Robust Noiseless Source Coding,” 1982 International Symposium on Information Theory, Les Arcs, France (June 1982) (abstract only).
43. (with co-author) “Boundary Detection in Images Using a Maximum Likelihood Criterion and a Two Component Model,” Mediterranean Electrotechnical Conference, Athens, Greece (May 1983).
44. (with co-author) “Periodic Random Processes as Models for Two Dimensional Signals and Images,” Mediterranean Electrotechnical Conference, Athens, Greece (May 1983) (abstract only).
45. (with L. Merakos) “Multiaccess of a Slotted Channel Using a Control Minislot,” 1983 International Conference in Communications,” Boston, MA (June 1983).
46. “Recent Results in Robust Estimation of Signals,” Ninth Symposium on Signal Processing and its Applications, Nice, France (May 1983).
47. (with L. Merakos) “On Retransmission Control Policies in Multiaccess Channels,” 1983 Johns Hopkins Conference on Information Sciences and Systems, Baltimore, MD (March 1983).
48. (with two co-authors) “New Results on Robust Estimation of Multivariable Stationary Random Processes,” 1983 John Hopkins Conference on Information Sciences and Systems,” Baltimore, MD (March 1983).
49. “Robust Decision Rules for Multiple Hypotheses,” 1983 John Hopkins Conference on Information Sciences and Systems, Baltimore, MD (March 1983).
50. (with L. Merakos) “Stack Algorithms for Local Area Networks,” 1983 HETELCON (Hellenic Telecommunications Conference), Athens, Greece (August 1983).
51. (with two co-authors) “Robust Prediction and Interpolation for Vector Stationary Processes,” 1983 International Symposium on Information Theory, St. Jovite, Quebec, Canada (September 1983) (abstract only).
52. (with co-authors) “Application of Median Filtering on Nuclear Medicine Scintigram Images,” Seventh International Conference on Pattern Recognition, Montreal, Canada (August 1984).
53. D. Kazakos and I. Stavrakakis, “A Simple Stack Algorithm for a Code Division Multiple Access Communication System,” 25th Conference on Decision and Control, Athens, Greece (December 1986).

54. D. Kazakos and I. Stavrakakis, "Interconnected Multi-User Packet Radio Networks," Symposium on C3 Research, National Defense University, Washington, DC (June 1987).
55. "Robust Methods in Signals Processing: Some New Results," Proceedings of the Third ASSP Workshop on Spectrum Estimation and Modeling, Boston, MA (November 1986).
56. D. Kazakos and I. Stavrakakis, "An Efficient Algorithm for a Multi-User Network Where Some Users Have Time Limitations," 26th Conference on Decision and Control, Los Angeles, CA (December 1987).
57. D. Kazakos and I. Stavrakakis, "On the Approximation of the Output Process of a Random Access Communication Network," IEEE INFOCOM 88, New Orleans, LA (March 1988).
58. "Error Bounds for Distributed Multisensor Detection," 1988 Princeton Conference on Information Sciences and System, Princeton University, Princeton, NJ (March 1988).
59. D. Kazakos and I. Stavrakakis, "Second Order Markovian Approximation of the Output Process of Multi-User Random Access Communication Networks," 1988 Princeton Conference on Information Sciences and Systems, Princeton, NJ (March 1988).
60. "Error Bounds and Asymptotic Performance under Mismatch of Multisensor Detection Systems," 1988 MIT-ONR C3 Workshop, Monterey, CA (June 7-9, 1988).
61. D. Kazakos and I. Stavrakakis, "A communication network with some high priority messages," 1988 MIT-ONR C3 Workshop, Monterey, CA (June 7-9, 1988).
62. (with one co-author), "Sequential Detection for Multisensor Data," 1988 Conference on Decision and Control, Austin, TX (December 1988).
63. "Quantization for Distributed Multisensor Data," 1989 C3-JDL Symposium, National Defense University, Washington, DC (June 7-9, 1989).
64. "Asymptotically Optimum Channel Quantizers," 1989 Communication Theory Symposium, Marathon, FL (April 1989).
65. "Advances in Distributed Multisensor Detection," 1989 Conference on Systems, Man, and Cybernetics, Boston, MA (Nov. 14-17, 1989).

66. "Signal Processing in Distributed Multisensor Systems," ESPRIT Conference, Brussels, Belgium (October 13, 1989).
67. "Communication and Control Requirements for Distributed Tactical Systems," NATO Annual Conference, Brussels, Belgium (October 24-26, 1989).
68. "Quantization for Distributed Detection," 23rd USRI Conference, Prague, Czechoslovakia (1990).
69. "Asymptotically Tight Error Bounds for Multihypothesis Testing Using Large Deviation Theory," 11th Prague Conference (August 1990).
70. "Asymptotic Performance of a Class of Multisensor Memory less Detectors," IEEE Conference of Decision and Control (December 1990).
71. "Asymptotically Tight Error Bounds for Multihypothesis Testing Through Large Deviation Theory," NATO Advanced Study Institute on Non-Parametric Functional Estimation and Related Topics, Spetses, Greece (July 29-Aug. 10, 1990).
72. "Multisensor Bayesian Detection Through the Fusion of Likelihood Ratios," with H. Delic, Proceedings of the Twenty-fifth Annual Conference on Information Sciences and Systems, John Hopkins University (March 20-22, 1991).
73. "Exponential Error Bounds for Coding through Noisy Channels with Inaccurately Known Statistics and for Generalized Decision Rules," (with A. B. Cooper, III) Proceedings of the Twenty-fifth Annual Conference on Information Sciences and Systems, John Hopkins University (March 20-22, 1991).
74. (with P. P. Kazakos), "Fundamental neural structures, operations and asymptotic performance criteria in decentralized binary hypothesis testing," Proceedings of the 1991 IFAC International Symposium, Arlington, VA (August 14-17, 1991).
75. (with H. Delic), "Distributed Bayesian Multisensor Detection and Estimation," Proceedings of the 1991 IFAC International Symposium, Arlington, VA (August 14-17, 1991).
76. (with P. P. Kazakos), "Fundamental neural structures and detection in decentralized binary hypothesis testing," 1991 International Symposium on Infor. Theory, Budapest, Hungary (June 23-29, 1991).
77. (with H. Delic), "Fusion Likelihood Ratios in Distributed Bayesian Detection," 1991 IEEE Conf. on Systems, Man, and Cybernetics, Charlottesville, VA (October 13-16, 1991).

78. (with K. W. Halford, D. Pados, and P. Papantoni-Kazakos), "Neural Network Structures with Feedback, in Binary Hypothesis Testing," IEEE Conf. on Systems, Man, and Cybernetics, Charlottesville, VA (October 13-16, 1991).
79. (with P. Papantoni-Kazakos), "Neural Networks for Binary Hypothesis Testing and Performance Studies," IEEE Conf. on Neural Networks for Ocean Engineering, Washington, D.C. (August 1991).
80. (with S. Batalama, A. Koyiantis, and P. Papantoni-Kazakos), "Fundamental Design and Learning Concepts in Robust Recurrent Neural Networks," IJCNN 1992, Baltimore, MD (June 1992).
81. S. Batalama, A. Koyiantis, and P. Papantoni-Kazakos, "Feed Forward Neural Structures in Binary Hypothesis Testing," 1992 IEEE C3 Conference, Rome, NY (June 1992).
82. (with H. Delic), "Asymptotic Properties of Schweppe's Likelihood Ratio Detector," 1992 IEEE C3 Conference, Rome, NY (June 1992).
83. S. Batalama, A. Koyiantis, P. Papantoni-Kazakos, and D. Kazakos, "Feed Forward Neural Structures in Binary Hypothesis Testing," 1992 Conf. on Information Sciences and Systems, Princeton, NJ (March 1992).
84. H. Delic and D. Kazakos, "Distributed Detection in Dependent Noise," 1992 Conf. on Information Sciences and Systems, Princeton, NJ (March 1992).
85. D. Pados, P. Papantoni-Kazakos, D. Kazakos, and A. Koyiantis, "The Use of the Kullback-Leibler Distance for Learning in Neural Binary Classifiers," First Japan/U.S. Conference on the Frontiers of Statistical Modeling-An Informational Approach, Knoxville, TN (May 1992) (invited paper).
86. S. Batalama and D. Kazakos, "Asymptotically Tight Error Bounds for Multi-Hypothesis Testing Through Large Deviation Theory," First Japan/U.S. Conference on the Frontiers of Statistical Modeling-An Informational Approach, Knoxville, TN (May 1992) (invited paper).
87. D. Pados, P. Papantoni-Kazakos, D. Kazakos, and A. Koyiantis, "The Use of the Kullback-Leibler Distance for Learning in Neural Binary Classifiers," special session on Neural Network Frontiers in Communication Systems, 4th International Conference on Advances in Communications and Control (COMCON 4) Rhodes, Greece (June 14-18, 1993).

88. S. Vassilopoulos, P. Papantoni-Kazakos, and D. Kazakos, "A Transmission Scheduling Algorithm for Mixed Traffic and Partially Unknown Input Statistics," 1993 Conference on Information Sciences and Systems, John Hopkins University (March 24-26, 1993).
89. D. Pados, P. Papantoni-Kazakos, D. Kazakos, and A. Koyiantis, "Information Measures for Learning in Neural Binary Classifiers," 1993 Conference on Information Sciences and Systems, John Hopkins University (March 24-26, 1993).
90. S. Batalama and D. Kazakos, "Generalized Barankin Type Lower Bounds for Parameter Estimation," 1993 Conference on Information Sciences and Systems, John Hopkins University (March 24-26, 1993).
91. D. Kazakos, P. Papantoni-Kazakos, "Data Fusion Structures, With and Without Feedback, for Distributed Detection. Performance and Parameter Adaptations," ARO Information Fusion Workshop, Harper's Ferry, WV (June 1-3, 1993).
92. W. Blair and D. Kazakos, "Tracking Maneuvering Targets, with Multiple, Intermittent Sensors," Sensor Fusion Session, IEEE Asilomar Circuits and Systems Conference, Monterey, CA (November 1-3, 1993) (invited paper).
93. D. Kazakos and P. Papantoni-Kazakos, "Accessing/Transmission Protocols and Network Reconfigurations for Mixed Traffic Wireless Communications," 2nd Workshop on High-Performance Communications Subsystems, Williamsburg, VA (September 1-3, 1993).
94. S. N. Batalama and D. Kazakos, "Generalized Barankin Type Lower Bounds for Parameter Estimation," Proceedings of the 1993 Conference on Information Sciences, John Hopkins University, Baltimore, MD (March 1993).
95. S. N. Batalama and D. Kazakos, "Barankin-Type Lower Bounds for Stochastic Approximation of Signal Parameters," Proceedings of the 1994 Conference on Information Sciences and Systems, Princeton University, Princeton, NJ (March 1994).
96. S. N. Batalama and D. Kazakos, "Generalized Cramer-Rao Bound and the Location Parameter Case," Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing, Adelaide, South Australia (April 1994).
97. S. N. Batalama and D. Kazakos, "On the Memory less Robust Estimation of the Autocorrelation Coefficients," International

- Symposium on Information Theory, University of Trondheim, Norway (June 1994).
98. D. Kazakos and N. Zervos, "Large Deviation Theory and Long Range Dependent Processes with Applications in Computer Communication Networks," Proceedings of the Second World Congress of Nonlinear Analysis, Athens, Greece (July 10-17-96).
 99. D. Kazakos and N. Zervos, "Traffic Modeling for the Internet," Halkidiki Conference on Computer Communications Networks, Halkidiki, Greece (July 8-12, 1996).
 100. "Quality of Service under Self-Similar Traffic Models for the Internet Traffic," Halkidiki Conference on Computer Communications Networks, Halkidiki, Greece (July 12-16, 1997)
 101. Cherif Aissi and Demetrios Kazakos, "A model for a Turbulence System Generator," Second WSEAS Conference on Information Sciences and Applications, Cancun, Mexico, May 12-16, 2002.
 102. Cherif Aissi and Demetrios Kazakos, "Design of a Hysteresis Chaotic Circuit," Second WSEAS Conference on Information Sciences and Applications, Cancun, Mexico, May 12-16, 2002.
 103. N. Alvertos, G. Kartsounes and Demetrios Kazakos, "Improved Depth Formulation for the Lateral Stereo-Camera Geometry", Second WSEAS Conference on Applied Informatics, Rethymno, Crete Island, Greece, July 7-14, 2002.
 104. Stephany Ogbonmwam, Wei Li, and D.Kazakos, "Multithreshold Bandwidth Reservation Scheme of an Integrated Voice/Data Wireless Network," WIRELESSCOM 2005, Maui, Hawaii, June 13-16, 2005.
 105. Wei Li, S.Man, Yuhon Zhang and Demetrios Kazakos, "Numerical Analysis for the Optimal Reserved Channel Numbers in Reserved Channel Scheme with Hybrid Revenue of Incomplete and Complete Calls", WIRELESSCOM 2005, Maui, Hawaii, June 13-16, 2005.
 106. Deepak Thometi, Wei Li and Demetrios Kazakos, "Improved Quality of Service for WCDMA Network and Coexistence with Indoor Wireless Technologies", WIMOB 2005, IEEE International Conference on Wireless and Mobile Computing, Networking and Communications, Montreal, Canada, August 22-24, 2005.
 107. Demetrios Kazakos, "Robust Communication Networks with Imbedded Cybersecurity", Invited Paper, National Science Foundation Workshop on Cyberphysical Systems, Austin, TX, October 16-17, 2006

108. W.Ni, W.Li, and **D.Kazakos**, “Optimal Expected Discounted Reward of a Wireless Network with Award and Cost”, Mobilware 2010, June 30-July 2, 2010, Chicago, Ill.

J. Principal Investigator of Grants and Contracts

To:

- State University of New York at Buffalo
 - University of Virginia
 - HITEC, INC
1. “Statistical Information Processing Techniques for Remote Sensing Data,” National Science Foundation Grant, \$60,400 for the period 12/01/76 to 01/31/79.
 2. “Modeling and Analysis of Nonlinear Amplifiers in Radar Systems,” contract with Rome Air Development Center, \$31,500 for the period 01/01/77 to 05/31/79.
 3. “Applications of Digital Signal Processing in the Collection and Processing of Communication Signals,” contract with the U.S. Army Signal Warfare Lab, Harry Diamond Labs, and \$100,000 for the period 06/01/82 to 05/31/84.
 4. \$10,000 awarded in November, 1983, by the IEEE Computer Society Test Technology Awards Committee for a study entitled, “Study of New Statistical Algorithms for Failure Detection.”
 5. “New Approaches to Digital Phase Modulation,” National Science Foundation Grant, \$60,000 for the period 09/01/81 to 08/31/84.
 6. “Research in Computer Communication Networks,” North Atlantic Treaty Organization Grant, \$2,900 (without overhead) for the period 03/01/84 to 12/03/84.
 7. “New Robust Statistical Methods in Probability, Statistics, Information Theory, Detection and Estimation,” Air Force Office of Scientific Research Grant, \$305,620 for the period 01/01/82 to 12/31/87.
 8. “Research in Image Processing and Transmission,” contract from the Office of Naval Research, \$227,000 for the period 09-01-82 to 08-31-85.
 9. Digital Processing of Time Varying Imagery,” U.S. Department of Defense Equipment Grant, \$172,000 for a Video Sequence Processor and an Array Processor, awarded April 1984.

10. "Research in Signal Processing, Sperry Corporation Grant, \$100,000 for the period 07-01-85 to 06-30-87.
11. "Decentralized Signal Detection Schemes for Multisensor Data," Rome Air Development Center, \$58,500 for the period 11-01-87 to 08-31-88.
12. "Performance Analysis and Optimum Design for Multisensor Distributed Detection Systems," Rome Air Development Center, \$600,000 for the period 03-01-89 to 02-28-92.
13. "Elements, Structures, and Adaptive Learning Algorithms in Stochastic Neural Networks," ECS-90003513, July 1990 – June 1992, \$109,831, National Science Foundation.
14. "Research and Development in Robust Networking." U.S. Army, October 15, 1990 – October 14, 1993, \$625,850.
15. "Modeling Backgrounds in Infrared Imaging," U. S. Army, June 1, 1992 – May 31, 1995, \$850,340.
16. "Interpreting Hippocampal Function and Developing Artificial Neural Networks for Prediction in Spatial Control, \$300,000, for 3 years, starting January 1, 1993, funding jointly by EPRI and NSF Intelligent Control program.
17. "Adaptive Neural Networks for Automatic Target Recognition," Advanced Research Projects Agency, \$455,650 for 3 years, beginning July 1, 1994.
18. "Modem Research and Development," AT&T Laboratories, \$90,000 for 1995.
19. "Personal Mobile Communications: Research and Development," Lucent Technologies, \$90,000 for 1996.
20. "Protocols and Signaling for Paging Services," Motorola, \$100,000 for 1996 – 1997, (A. Kogiantis).
21. "Research in Decision Directed Neural Networks for Communications," with D. Pados, Louisiana Educational Quality Support Fund, \$195,000 for 1996-98.
22. "Personal Mobile Communications: Research and Development," Lucent Technologies, \$456,850 for 1997-2005
23. "VLSI Hardware Implementation of Asymmetric Digital Subscriber Line Systems," Ellemedia, Inc., \$560,800 for 1998-2006

24. **“Web-Assisted K-12 Science Education”, Texas Higher Education Coordinating Board, \$85,000 for one year, 2008-2009.**
25. **“Center of Excellence Network in Transportation and Infrastructure Security”, funded by the U.S. Department of Homeland Security, March 2008- March 2012, at a total of \$72 million, amounting to \$18 Million per year for a four year period. Dr.Kazakos was the original Principal Investigator, then he appointed Dr. Carol Lewis as Principal Investigator. Texas Southern University was scheduled to receive 1/7 of the \$18 Million/year, or \$10.82 million for 4 years. Unfortunately, DHS finally funded only about \$200,000 out of the \$10.82 million**
26. **“NASA University Research Center for Bio-Nanotechnology and Environmental Research”.2008-2013 D.Kazakos is Co-Principal Investigator. The NASA URC is funded at \$1M/year for five years.**
27. **“Intergovernmental Personnel Act Award” (IPA), National Science Foundation, \$212,545 for Sept 14, 2009 to Sept 13, 2010.**
28. **“Intergovernmental Personnel Act Award”, (IPA), National Science Foundation, \$213,771 for Sept 14, 2010 to Sept 13, 2011.**
29. **“Center of Research Excellence in Complex Networks”, funded to a very significant degree due to Dr.Kazakos’s connections and important information gained while Program Director, by the National Science Foundation, \$5 million over 5 years, starting 10/1/2011.**

Summary of competitive external funding brought to Texas Southern University by Dr. D.Kazakos for the period 2006-2012: \$10.71 Million.(Items 24-29)

