

Amin Zollanvari
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College Station, TX, USA
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Research Interest Small-sample properties of error estimators of misclassification true error. Asymptotic methods in high-dimensional setting. Multivariate analysis. Statistical pattern recognition and its application in biomarker discovery. Statistical modeling of high throughput data in "omics". Optimization techniques.

Education **Texas A&M University** Fall 06 - Present
Expected graduation: Dec 2010
Ph.D. candidate in Electrical and Computer Eng. Dept.

Shiraz University, Shiraz, Iran
M.Sc in Electrical and Computer Engineering 2003 - 2006
B.Sc in Electrical and Computer Engineering 1999 - 2003

Work Experience **Texas A&M University** Research Assistant
College Station, TX 2007- Present

Study asymptotic methods suitable for high-dimensional settings. Studying statistical properties of error estimators, exact and asymptotically, and their applications in biomarker discovery; Statistical modeling of high throughput data such as genomic and proteomic data; Multivariate analysis techniques.

Iran Electronic Industries Lecturer
Shiraz, Iran Spring 2005
Digital Signal Processing.

Azad University Lecturer
Fasa, Iran Spring 2005
Circuits Lab I, Calculus.

Shiraz University Teaching Assistant
Shiraz, Iran Fall 2004
Electrical Circuit I.

Publications

Current Research

Peer-Reviewed Journal Publications

Joint Sampling Distribution Between Actual and Estimated Classification Errors for Linear Discriminant Analysis, A. Zollanvari, U.M. Braga-Neto and E.R. Dougherty, *IEEE Transactions on Information Theory*, vol. 56, No. 2, February 2010.

On the Sampling Distribution of Resubstitution and Leave-One-Out Error Estimators for Linear Classifiers, A. Zollanvari, U.M. Braga-Neto and E.R. Dougherty, *Pattern Recognition*, Vol. 42, No. 11, November 2009, pp. 2705-2723.

Analysis and Modeling of Time-Course Gene-Expression Profiles from Nanomaterial-Exposed Primary Human Epidermal Keratinocytes, A. Zollanvari, M.J. Cunningham, U.M. Braga-Neto, E.R. Dougherty, *BMC Bioinformatics*, Vol. 10, Suppl 11, October 2009, p. S10.

Analytic Study of Performance of Error Estimators for Linear Discriminant Analysis Part I: Univariate Model, A. Zollanvari, U.M. Braga-Neto, E.R. Dougherty. submitted.

Analytic Study of Performance of Error Estimators for Linear Discriminant Analysis Part II: Multivariate Model, A. Zollanvari, U.M. Braga-Neto, E.R. Dougherty. submitted.

The illusion of distribution-free classification in high-throughput biology, E.R. Dougherty, A. Zollanvari, U.M. Braga-Neto under preparation.

Conferences

Sample size calculation from specified RMS of the resubstitution error for linear classifiers, A. Zollanvari, U.M. Braga-Neto, E.R. Dougherty, Proc. of VII IEEE International Workshop on Genomic Signal Processing and Statistics (GENSIPS'2009), Minneapolis, MN, May 2009.

Publications Past Research

Peer-Reviewed Journal Publications

A Class of Comprehensive Constraints for Design of PCWLSE Laguerre and FIR Filters: A Boost in Performance, A. Zollanvari, M. A. Masnadi-Shirazi, *Signal Processing*, Vol 90, No. 4, 1118-1130, 2010.

Complex Digital Laguerre Filter Design with Weighted Least Square Error Subject to Magnitude and Phase Constraints M. A. Masnadi-Shirazi, A. Zollanvari, *Signal Processing*, Vol. 10, No. 4, April 2008, pp. 796-810.

Conferences

A class of comprehensive constraints for the PCWLSE filter design: A boost in performance, A. Zollanvari, M. A. Masnadi-Shirazi, Proc. of the IEEE International Conference on Acoustic, Speech and Signal Processing, (ICASSP), Taipei, Taiwan, April, 2009.

An extended dual parameterization method to constrained least square Laguerre filter design, A. Zollanvari, M. A. Masnadi-Shirazi, Proc. of the IEEE International Conference on Acoustic, Speech and Signal Processing, (ICASSP), Toulouse, May 2006.

An extended ϵ -perturbation method to semi-infinite quadratic programming of constrained FIR filters, M. A. Masnadi-Shirazi, A. Zollanvari, Proc. of the IEEE International Conference on Acoustic, Speech and Signal Processing, (ICASSP), Toulouse, May 2006.

Peak constraint weighted least square Laguerre network implementation in complex domain by a new method satisfying continuous constraints of the problem, A. Zollanvari, M. A. Masnadi-Shirazi, Proc. of IEEE International conference on information & communication technologies: from theory to applications (ICTTA), Damascus, Syria, April, 2006.

A novel approach to optimal array pattern synthesis , M. A. Masnadi-Shirazi, A. Zollanvari, Proc. of IEEE International conference on information & communication technologies: from theory to applications (ICTTA), Damascus, Syria, April, 2006.

An Extended ϵ -Perturbation Method to Semi-Infinite Quadratic Programming of Constrained Laguerre filters , A. Zollanvari, M. A. Masnadi-Shirazi, Proc. of the 14th Iranian Conference on Electrical Engineering, Tehran, Iran, May 2006.

An extended dual parameterization method to design constrained asymmetric FIR filter design , M. A. Masnadi-Shirazi, A. Zollanvari, Proc. of the 14th Iranian Conference on Electrical Engineering, Tehran, Iran, May 2006.

Constrained weighted least square design of digital Laguerre filters , M. A. Masnadi-Shirazi, A. Zollanvari, Proc. of the Int. Sym. On Telecommunications, Vol. 1, Sep. 2005.

Posters

Computational Analyses of time and dose response of Nanomaterials on Primary Human Epidermal Keratinocytes , A. Zollanvari, U.M. Braga-Neto, E.R. Dougherty, M.J. Cunningham, The Seventh Annual Conference of the MidSouth Computational Biology and Bioinformatics Society MCBIOS 2009.

Awards

Texas A&M ECE Departmental scholarship 2006-2007

2nd place in "Student research week" held at Texas A&M University, 2009 in the field of Medicine/Human Nutrition/Biomedical Engineering.

2nd place in "First student research festival at Shiraz University, 2006" for the project "Investigation and implementation of speech quality assessment criteria".

Professional services

Reviewer

International Journal on Knowledge based systems, Signal Processing, and couple of conferences

Graduate Course taken at A&M

Pattern recognition, Multivariate analysis, Applied Probability, Probability Models, Statistical computation in genomic signal processing, Models and Algo. for sequence alignment, Genomic signal processing, Nonlinear and dynamic programming, Information theory, Network coding, Wireless communication, Programming with C & java

Graduate Course taken at Shiraz U.

Introduction to spectral analysis, Statistical signal processing estimation theory, Stochastic processes, Digital communications, Digital signal processing, Advanced engineering math, Radar systems, Adaptive signal processing

Computer Skills

R, C, MPI, Java, MATLAB, L^AT_EX

Citizenship

Dual Citizenship: USA, Iran

References

Available Upon Request