Behtash Babadi

CONTACT INFORMATION

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RESEARCH INTERESTS

Distributed resource allocation algorithms, Information theory, Compressed sensing

EDUCATION

Harvard University, Cambridge, Massachusetts USA

Ph.D. candidate, Electrical Engineering

- Advisor: Prof. Vahid Tarokh
- Co-advisor: Prof. Roger W. Brockett

Sharif University of Technology, Tehran, Iran

B.Sc., Electrical Engineering, June 2006

ACADEMIC EXPERIENCE

Harvard University, Cambridge, Massachusetts USA

Teaching Fellow **September 2007 - present**

Designing homework assignments, holding sections and grading.

- Mathematical Methods in Sciences (Applied Mathematics 21a), Fall 2007.
- Graph Theory and Combinatorics (Applied Mathematics 107), Spring 2009.

Sharif University of Technology, Tehran, Iran

Teaching Assistant **September 2005 - June 2006**

Holding sections and grading.

- Probability and Statistics, Fall 2005.
- Communication Systems I, Spring 2006.

Pars Research Center for Electronics and Communications, Tehran, Iran

Research and Development project member **May 2005 - May 2006**

Project on efficient implementation of W-CDMA physical layer. Researched the Turbo/Convolutional coding and decoding. Using MATLAB and C platforms worked on the simulation of the 3GPP standard requirements on channel coding/decoding along with rate matching.

HONORS AND AWARDS

Ranked **2**nd out of 170 member class of 2006, with GPA : 19.09/20, Sharif University of Technology, 2006

Gold Medalist of the 33rd International Physics Olympiad (IPhO-2002), Bali, Indonesia, 2002

Gold Medalist of the 14th National Physics Olympiad, Tehran, Iran, 2001

PUBLICATIONS

JOURNAL PUBLICATIONS

G. Mileounis, B. Babadi, N. Kalouptsidis, and V. Tarokh, *An Adaptive Greedy Algorithm with Application to Nonlinear Communications,* submitted.

N. Kalouptsidis, G. Mileounis, B. Babadi, and V. Tarokh, *Adaptive Algorithms for Sparse System Identification,* submitted.

B. Babadi, N. Kalouptsidis, and V. Tarokh, *SPARLS: The Sparse RLS Algorithm,* submitted.

B. Babadi and V. Tarokh, *GADIA: A Greedy Asynchronous Distributed Interference Avoidance algorithm,* submitted.

B. Babadi, N. Kalouptsidis, and V. Tarokh, *Asymptotic achievability of the Cramér-Rao bound for noisy compressive sampling,* IEEE Transactions on Signal Processing, Vol. 57, No. 3, March 2009.

Conference Proceedings

N. Kalouptsidis, G. Mileounis, B. Babadi, and V. Tarokh, *Adaptive Algorithms for Sparse Nonlinear Channel Estimation,* Proceedings of the 2009 IEEE Workshop on Statistical Signal Processing (SSP'09), Cardiff, Wales, UK

B. Babadi, N. Kalouptsidis, and V. Tarokh, *Comparison of SPARLS and RLS algorithms for adaptive filtering*, Proceedings of the 2009 IEEE Sarnoff Symposium, Princeton, NJ

B. Babadi and V. Tarokh, *The impact of spectrum sensing time on the performance of the GADIA algorithm*, Proceedings of the IEEE Symposia On New Frontiers In Dynamic Spectrum Access Networks (IEEE DySPAN 2008), Chicago, IL.

B. Babadi and V. Tarokh, *Distributed dynamic frequency allocation in wireless networks under time-varying user activities,* Proceedings of the 2008 IEEE Sarnoff Symposium, Princeton, NJ.

B. Babadi and V. Tarokh, *Iterative approach to base station positioning in cellular networks,* Proceedings of the the 2008 IEEE Sarnoff Symposium, Princeton, NJ.

B. Babadi and V. Tarokh, *A distributed asynchronous algorithm for spectrum sharing in wireless Ad hoc networks,* Proceedings of the 42nd Annual Conference on Information Sciences and Systems (CISS 2008).

B. Babadi, P. Shariatpanahi and, B. H. Khalaj, *An adaptive feedback bit allocation method for wireless systems with transmit diversity,* Proceedings of CCSP'05, Kuala Lumpur, Malaysia, November 2005.

P. Shariatpanahi, B. Babadi. B. H. Khalaj, *Feedback bit reduction for antenna selection methods in wireless systems,* Proceedings of the IEEE MICC-ICON'05, Kuala Lumpur, Malaysia, November 2005.

Skills

- *Computer Skills:* C, MATLAB, Simulink, VHDL, Mathematica, Windows and Linux Operating Systems
- *Languages:* Fluent English and Farsi
- *Music:* Composer and player of Tanboor, Divaan and Oud in Iranian traditional music bands; Director of the Harvard's *Dudley World Music Ensemble.*