

# BARIŞ NAKİBOĞLU

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## EDUCATION

Ph.D in Electrical Engineering and Computer Science September 2005-June 2010  
*Massachusetts Institute of Technology (MIT), Cambridge, MA* (expected)  
Thesis: "Exponential Bounds On Error Probability with Feedback"

M.Sc. in Electrical Engineering and Computer Science September 2003 - September 2005  
*Massachusetts Institute of Technology (MIT), Cambridge, MA*  
Thesis: "Variable Block Length Coding for Channels with Feedback and Cost Constraints"

B.Sc. in Electrical and Electronics Engineering and in Physics September 1998 - June 2002  
*Middle East Technical University (METU), Ankara, TURKEY*  
GPA: 3.99/4.00 (EEE Major), 4.00/4.00 (Physics Major)  
1st rank in EEE Department 2nd rank in University

## RESEARCH INTEREST

*Information Theory and Communications:*

- Published on: Variable-length codes, error-and-erasure decoding, unequal error protection, feedback encoding schemes. An up to date list can be found at <http://www.mit.edu/~nakib>.
- Major Interest: Characterization and analysis of operational performance criterion's motivated by contemporary systems/applications.
- Side Interests: large deviations, network science, machine learning.

## TEACHING EXPERIENCE

Teaching Assistant for *6.452 Principles of Wireless Communications* Spring 2006

## PROFESSIONAL EXPERIENCE

*TÜBİTAK-BİLTEN (now known as TÜBİTAK-UZAY), Ankara, TURKEY*  
Information Technologies and Electronics Research Institute September 2002-July 2003

- Participated in the design of radio frequency (X-Band) power amplifier for a satellite communication system: conducted software simulations, experiments on the hardware.

## AWARDS

Bronze Medal, with 62nd rank  
*29th International Physics Olympiad (IPhO), Reykjavik, Iceland* July 1998

Bronze Medal in Physics  
*5th National Science Olympiad, Ankara, Turkey* December 1997

3rd rank in individual competition in Mathematics  
*7th International Test Rating Olympiad Intellectual Marathon; Antalya, Turkey* November 1997

## PUBLICATIONS

### Journal Papers

- B. Nakiboğlu, L. Zheng, “Error-and-Erasure Decoding for Block Codes with Feedback,” *Submitted to IEEE Transactions on Information Theory, March 2009.*  
arXiv:0903.4386v1 [cs.IT]
- R. G. Gallager, B. Nakiboğlu, “Variations on a theme by Schalkwijk and Kailath,” *Accepted to IEEE Transactions on Information Theory, December 2008.*  
arXiv:0812.2709v2 [cs.IT]
- S. P. Borade, B. Nakiboğlu, L. Zheng, “Unequal Error Protection: An Information-Theoretic Perspective,” *IEEE Transactions on Information Theory*, Vol 55 Issue 12, pp 5511-5539, December 2009.  
arXiv:0803.2570v4 [cs.IT]
- P. Berlin, B. Nakiboğlu, B. Rimoldi, E. İ. Telatar, “A Simple Converse of Burnashev’s Reliability Function,” *IEEE Transactions on Information Theory*, Vol 55 Issue 7, pp 3074-3080, July 2009.  
arXiv:cs/0610145v3 [cs.IT]
- B. Nakiboğlu, R. G. Gallager, “Error Exponents for Variable-length Block Codes with Feedback and Cost Constraints,” *IEEE Transactions on Information Theory*, Vol 54 Issue 3, pp 945-963, March 2008.  
arXiv:cs/0612097v1 [cs.IT]

### Conference Papers

- B. Nakiboğlu, L. Zheng, “Upper Bounds to Error Probability with Feedback” Forty-Seventh Annual Allerton Conference, University of Illinois at Urbana-Champaign, IL, Sept 30 - Oct 2 2009
- B. Nakiboğlu, L. Zheng, “Upper Bounds to Error Probability with Feedback” IEEE International Symposium on Information Theory, Seoul, Korea, July 2009.
- B. Nakiboğlu, L. Zheng, “Errors-and-Erasures Decoding for Block Codes with Feedback,” IEEE International Symposium on Information Theory, Toronto, Ontario, Canada, July 2008.
- S. P. Borade, B. Nakiboğlu, L. Zheng, “Some Fundamental Limits of Unequal Error Protection” IEEE International Symposium on Information Theory, Toronto, Ontario, Canada, July 2008.
- S. P. Borade, B. Nakiboğlu, L. Zheng, “Unequal error protection: some fundamental limits and optimal strategies,” Information Theory and Applications Workshop, UCSD, Jan. 2008.
- B. Nakiboğlu, R. G. Gallager, M. Z. Win, “Error Exponents for Variable-length block codes with feedback and cost constraints,” IEEE International Symposium on Information Theory, Seattle, WA July 2006.