SUMMARY VITA – Mina Sartipi
Assistant Professor

Years on Faculty: 2 (original appointment 08/01/06)

Degrees:

Degree	Field	Institution	Date
Ph.D.	Electrical & Computer Engineering	Georgia Institute of Technology	2006
M.Sc.	Electrical & Computer Engineering	Georgia Institute of Technology	2003
B.S.	Electrical & Computer Engineering	Sharif Univ. of Technology	2001

Other Related Experience:

Where	Dates	Description of Duties
Georgia Institute of Technology	2002-2006	Conducting Research in WSNs
Georgia Institute of Technology	Fall 2001	Teaching Assistant

Principal Publications of Last Five Years:

Journal Papers:

[1]M. Sartipi, F. Fekri, "Lossy Distributed Source Coding using LDPC," accepted to be published in *IEEE Communications Letters*, June 2008.

[2] F. Delgosha, M. Sartipi, and F. Fekri, "Construction of Two-dimensional Paraunitary Filter Banks over Fields of Characteristic Two and their Connections to Error-Control Coding," *IEEE Transactions on Circuits and Systems I*, Volume 55, Issue 10, pp. 3095-53109, November 2008.

[3] M. Sartipi, F. Fekri, "Distributed Source Coding using Short to Moderate Rate-Compatible LDPC Codes: The Entire Slepian-Wolf Rate Region," *IEEE Transactions on Communications*, Volume 56, Issue 3, pp. 400-411, March 2008.

[4] M. Sartipi, F. Delgosha, F. Fekri, "Two-Dimensional Half-Rate Codes Using two-Variable Finite-Field Filter Banks,'' *IEEE Transactions on Signal Processing*, Volume 55, Issue 12, pp. 5846-5853, December 2007.

[5] F. Fekri, M. Sartipi, R. M. Mersereau, R. W. Schafer, "Convolutional Codes Using Finite-Field Wavelets; Time-Varying Codes and more,'' *IEEE Transactions on Signal Processing*, Volume 53, Issue 5, pp.1881-1896 May 2005.

Invited Papers:

[6] M. Sartipi and F. Fekri, " Distributed Source Coding using LDPC Codes: Lossy and Lossless Cases with Unknown Correlation Parameter," *Forty-Third Annual Allerton Conference on Communication, Control and Computing*, October 2005.

[7] F. Fekri, F. Delgosha, M. Sartipi, "Results on Finite-Field Wavelets and Their Applications to Error Correcting Codes," *American Mathematical Society special meeting on codes and applications*, October 2004

Conference Papers:

[8] M. Sartipi and J. Patterson, "TinyTermite: A Secure Routing Algorithm on Intel Mote 2 Sensor Network Platform," *accepted to be published in Proc. of the twenty-First Conference on Innovative Applications of Artificial Intelligence (IAAI-09)*, July 2009.

[9] M. Sartipi, B. N. Vellambi R, N. Rahnavard, F. Fekri," DSCM: An Energy Efficient Multicast Protocol for Wireless Sensor Networks Using Distributed Source Coding," *Proc. of IEEE Infocom*, April 2008.

[10] M. Sartipi, F. Fekri, "Distributed Source Coding in Wireless Sensor Networks Using LDPC Coding: a Non-Uniform Framework,'' *Proc. of IEEE Data Compression Conference*, pp. 477 – 477, March 2005.

[11] M. Sartipi, F. Fekri, "Distributed Source Coding in Wireless Sensor Networks Using LDPC coding: The entire Slepian-Wolf Rate Region,'' *Proc. of IEEE Wireless Communications and Networking Conference*, pp. 1939-1944, March 2005.

[12] M. Sartipi, F. Fekri, "Source and Channel Coding in Wireless Sensor Networks Using LDPC Codes,'' *Proc. of IEEE Communications Society Conf. on Sensor Communications and Networks*, pp. 309-316, October 2004.

[13] M. Sartipi, F. Fekri, "Two-Dimensional Error Correcting Codes Using Finite-Field Wavelets,'' *Proc. of IEEE Information Theory Workshop*, pp. 22-29, October 2004.

Grants Received:

2007 **PI,** Tennessee Higher Education Commission, $35,000- Funded.
"An Energy-Efficient and Rate-Optimal Multicast Protocol on Intel Mote 2 Sensor Network Platform"

2007 **PI**, Wheeler Odor Research, $20,000- Funded.
In collaboration with Dr Li Yang and Dr. Joseph Kizza.
"Sustainable and Scalable Wireless Sensor Network to Monitor Chemical Concentration"

2008 **PI,** Tennessee Higher Education Commission, $40,000- Funded.
"TinyID: A Revolutionized Warehouse Management Tool"

2009 **PI**, NSF BRIGE- Pending.
"Energy-Efficient, Reliable, and Adaptable Communication Scheme for Concurrent Applications in Wireless Sensor Network"

2009 **PI**, NSF CPS- Pending.
In collaboration with Dr. Stephen Craven
"CPS Foundations in Computation and Communications"

2009 **Co-PI**, GENI- Pending.
In collaboration with Dr. Li Yang and Dr. Joseph Kizza.
"Developing a Prototype to Secure Collaboration in GENI and Educating Students Using GENI".

Scientific and Professional Society Memberships:

ACM SIGCSE	IEEE WCNC	Allerton
IEEE INFOCOM	IEEE SECON	
IAAI	IEEE ITW	

Professional Development Activities in the Last Five Years:

-Scholarly Activities: Serving on NSF Panel
-Advising: MS Thesis Advisor (Josh Patterson)
-Member of Thesis Defense Committee: Alma Cemerlic, Aliosman Demirbas
-Reviewer: IEEE journals (IEEE Transactions on Information Theory, IEEE Tranasctions on Signal Processing, IEEE Transaction on Wireless Communications, IEEE Transactions on Communications, IEEE Transaction on Communications Letters)
-IEEE conferences (ICASP, Infocom, Globecom, SECON).

Major research and scholarly activities: (Time devoted to scholarly and/or research activities: 50%)

-Research:

- Created a wireless sensor work research group
- Built a communication lab for undergraduate and graduate courses in telecommunication areas.
- Proposed TinyTermite- a secure and scalable routing algorithm.
- Proposed a communication scheme for warehouse management using wireless sensor networks
- Implemented an energy-efficient multicast algorithm on TinyOS-based Inetel Mote2
- Proposed Information hiding scheme using modern error control coding
- Introduced an energy-efficient and reliable multicasting protocol for wireless sensor networks
- Proposed a new design criteria for data compression in wireless sensor network
- Designed two-dimensional codes by two-dimensional wavelet transform
- Generated new algebraic finite-length low-density parity check (LDPC) codes
- Proposed a new scheme for generating rate-adaptive codes by wavelet transform

-Scholarly Activities:

- Serving on NSF Panel
- Advising MS Thesis students
- Member of Thesis Defense Committee
- Reviewer for IEEE journals and conferences