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Research interests

Error-correcting coding and digital signal processing for wireless communication systems and networks

Education

- PhD.EE (1992) University of Hawaii. Thesis: *Multilevel Error Correcting Codes*. Advisor: Shu Lin
- MSEE (1987) National University of Mexico (UNAM). Thesis: *Design of a Viterbi Decoder*. Advisor: Francisco Garcia-Ugalde
- BSEE (1985) National University of Mexico (UNAM). Thesis: *Analysis and Simulation of Cyclic Error Correcting Codes* Advisor: Dr. Francisco Garcia-Ugalde

Academic and Professional Experience

- Professor (August 2012 - present) Electrical Engineering, San Jose State University
- Associate Professor (August 2002 - August 2012) Electrical Engineering, San Jose State University
- Research Associate, Courtesy Appointment (2005 - 2006) University of California at Santa Cruz
- Researcher (August 1999 - June 2002) Advanced Telecommunication Laboratory, Sony CSL, Tokyo, Japan
- Staff Member (1997 - 1999) LSI LOGIC Corporation, Milpitas, CA, U.S.A.
- Research Associate (1995 - 1997) Institute of Industrial Science, University of Tokyo, Tokyo, Japan
- Research Fellow (1994 - 1995) Nara Institute of Science and Technology, Nara, Japan
- Endowed Chair on Intelligent Information Processing Systems (1993 - 1994) Osaka University, Japan
- Assistant Professor (1992 - 1993) Instituto Tecnológico y de Estudios Superiores Monterrey, Mexico

Professional service

- Co-Chair, 2016 International Symposium on Information Theory and Its Applications (ISITA2016), Monterey, CA, Nov. 6-9, 2016.
- Associate Technical Editor, *IEEE Communications Magazine*, 2012-2015
- Technical program committee (TPC) member in numerous peer-reviewed international conferences
- Reviewer for numerous journals and editorials (full list: <http://www.engr.sjsu.edu/rmorelos/biography.htm>)

Honors and awards

- DARPA Spectrum Challenge finalist (Team SJSU Spartans), March 2013
- Visiting Fellow, Japanese Society for the Promotion of Science, Osaka University, January 2009
- Best paper award, IEEE WPMC 2001 conference, 2001

Selected publications—Full list at <http://www.engr.sjsu.edu/rmorelos/publications/>

BOOK

The Art of Error Correcting Coding, second edition, John Wiley & Sons, 2006. Translated to Chinese.

CONFERENCES

Precoding by Priority: A UEP Scheme for RaptorQ Codes (coauthor: K. Elliadka), *Proc. 2014 International Symposium on Information Theory and Its Applications (ISITA 2014)*, pp. 269 – 273, Melbourne, Australia, October 26-29, 2014.

Using Software Defined Radios to teach Wireless Communication Courses, Tutorial Presentation, *The 2014 Wireless Innovation Forum (SDR WinnComm 2014)*, Schaumburg, Illinois, March 11-13, 2014.

Unequal Error Protection with CRC-16 Bits in EPC Class-1 Generation-2 UHF RFID Systems, *Proc. 2012 International Symposium on Information Theory and its Applications (ISITA 2012)*, pp. 36-40, Honolulu, Hawaii, October 28-31, 2012.

On Error Performance Improvements of Passive UHF RFID Systems via Syndrome Decoding, *Proc. 2011 IEEE iThings 2011 conference*, pp. 127-130, Dalian, China, October 19-22, 2011.

On Iterative Decoding of Two-Level Superposition Codes for Cooperative Broadcasting Based on QPSK and 4-PAM Constellations, *Proc. IEEE MILCOM 2010*, pp. 2369-2374, San Jose, CA, Oct. 31-Nov. 3, 2010.

An Adaptive Adjacent Channel Interference Cancellation Technique, (coauthor: Shobha Kuruba), *Proc. 9th Wireless World Congress*, pp. 1-4, San Jose, CA, May 14-15, 2008 and Shanghai, China, August 2009.

PAPERS

On the Error Performance of Coding and Equalization in Low-Complexity Ultra-Wideband Communication Systems, *Journal of Communication Software and Systems*, vol. 2, no. 3, pp. 245-251, November 2006.

Method of Non-Data-Aided Carrier Recovery with Modulation Identification, (coauthors: K. Umabayashi and R. Kohno), *IEICE Transactions on Fundamentals and Electronics, Communications and Computer Science*, vol. E87-A, no. 3, pp. 656-665, March 2004.

A Software Radio Receiver with Direct Downconversion and Its Digital Signal Processing, (coauthors: S. Haruyama, M. Abe, N. Sasho, L. Michael and R. Kohno), *IEICE Transactions on Communications*, Special Issue on Software Defined Radio Technology and Its Applications, vol. E85-B, no. 12, pp. 2741-2749, December 2002.

A Two-Stage Decoder for Pragmatic Trellis-Coded M-PSK Modulation Using a Symbol Transformation, (co-author: A. Mogre), *IEEE Transactions on Communications*, vol. 49, no. 9, pp. 1501-1505, September 2001.

Multilevel Coded Modulation for Unequal Error Protection and Multistage Decoding - Part I: Symmetric Constellations, (co-authors: M.P.C. Fossorier, S. Lin and H. Imai), *IEEE Transactions on Communications*, vol. 48, no. 2, pp. 204-213, February 2000.

On Primitive BCH Codes With Unequal Error Protection Capabilities, (coauthor: S. Lin), *IEEE Transactions on Information Theory*, Vol. 41, No. 3, pp. 788-790, May 1995.