

Shurui Huang

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Objective:

Seeking a full time position in the field of digital communications and signal processing with emphasis on communication system design (physical layer).

Highlights:

- Solid academic background in digital communications, digital signal processing, detection and estimation, wireless communication, error control coding, information theory and network coding.
- Experience with analysis, optimization, and design of communication, network coding system.
- Strong programming and simulation skills with C++ and Matlab under Windows and Linux systems.
- Highly motivated individual with years of team work on a variety of research problems.

Education:

2006- present Iowa State University, Master of Science in Electrical Engineering, major in Communication and Signal Processing. Expecting Minor in Statistics.
Anticipated graduation date: August 2009. GPA:3.8/4.0.

2002-2006 Tsinghua University, Bachelor of Engineering in Department of Automation, GPA: 85/100.

Professional experience:

Research Assistant

2007-present

Iowa State University, Dept. of Electrical and Computer Engineering,

- Analysis and estimation of the frame error rate of LDPC codes in bit interleaved coded modulation system, interleaver design for modulated LDPC code in communication system.
- Analysis and design of source information distribution in networks with network coding, optimization of information storage and transmission with network coding, cost computation when the source contains subset information set and coded information set.
- Given an output sequence of Hidden Markov model, estimation of the parameters with Newton Raphson method, comparison of the performances of Newton Raphson method and Expectation Maximization method.

Research Assistant

2005-2006

Tsinghua University, Dept. of Automation, Broadband Network & Digital Multimedia Lab,

- Video Processing and communications including lightfield and 3-dimensional video.

Teaching Assistant

2006-2007

Iowa State University, Dept. of Electrical and Computer Engineering,

- Signal and Systems II: Applications to linear systems and analog/digital filters. Feedback systems.
- Communication System I: Frequency domain analysis, spectral filtering. Linear modulation systems. Sampling and pulse code modulation. Digital data transmission, pulse shaping, multiplexing.
- Probabilistic Methods for Electrical Engineers: Discrete and continuous random variables.
- Tutored and mentored more than 100 junior and senior undergraduates.

Skills:

- Excellent in C/C++(5,000 lines of code for error control coding algorithm for communication systems)/Matlab language(10,000 lines of code for simulation of communication systems, digital signal processing)/ Windows /Linux / Microsoft Office
- Good in Assembly language/ JMP/Protel 99 / PSpice and latex

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Publication:

[1] Aditya Ramamoorthy, Shurui Huang. "Error Floors of LDPC Coded BICM", submitted to IEEE Transactions on Communications.

Relevant course work:

Advanced communications, Detection and estimation theory, Digital signal processing, Advanced Probability theory, Random Process Communication and signal processing, Coding theory, Theory of Probability and Statistics I& II, Bases and Application of Digital Media, Advanced probability theory.

Honors and Award:

Iowa State University graduate college assistantship, 2006-present
Tsinghua University Scholarship in excellent academic performance, 2004
The second-class award in the Physics contest of the undergraduate of Beijing, 2003
Member of Department Women Volleyball Team in Tsinghua University, won 4th in 2004, 1st in 2005.

Homepage

<http://www.ece.iastate.edu/~hshurui/>

Reference

Available upon request