

EDUCATION	MIT, Electrical Engineering & Computer Science	Ph.D Candidate	2010–Present
	<i>Advisor:</i> Gregory W. Wornell		GPA: 5.0/5.0
	MIT, Electrical Engineering & Computer Science	Master of Science	2010
	<i>Thesis:</i> Distinguishing codes from noise: fundamental limits and applications to sparse communication		
	<i>Advisor:</i> Gregory W. Wornell		GPA: 5.0/5.0
	University of Toronto, Electrical Engineering	Bachelor of Applied Science	2008
	<i>Major:</i> Electrical Engineering, <i>Minor:</i> Mathematics		GPA: 3.95/4
RESEARCH EXPERIENCES	Signals, Information & Algorithms Lab, Research Laboratory of Electronics (RLE), MIT		
	<i>Advisor:</i> Prof. G. W. Wornell		
	<i>Computation with noisy information or computations</i>		Oct. 2011–Present
	<ul style="list-style-type: none"> Investigate the fundamental trade-off between computation complexity and accuracy for various algorithms in the presence of noisy computing units or noisy data. 		
	<i>Fundamental limits of joint source-channel coding</i>		Mar. 2011–Dec. 2011
	<ul style="list-style-type: none"> Investigate behavior of joint source-channel coding at finite block lengths. 		
	<i>Efficient frame synchronization</i>		Sep. 2008–Jun. 2010
	<ul style="list-style-type: none"> Identified the inefficiency in existing frame synchronization schemes and investigated the fundamental performance limits of frame synchronization in the presence of noise. 		
	Electrical & Computer Engineering, University of Toronto		
	<i>Multicast capacity of network coding in broadcast-mode</i>		May 2007–Aug. 2008
	<ul style="list-style-type: none"> Mentor: Prof. F. R. Kschischang Proposed a protocol to counter the pollution attack in network coding without sacrificing much communicate rate. 		
	<i>Webpage prefetching in wireless heterogeneous networks</i>		May 2005–Aug. 2005
	<ul style="list-style-type: none"> Mentor: Prof. B. Liang Applied queueing analysis to search for the optimal strategy for webpage prefetching in heterogeneous wireless networks. 		
WORK EXPERIENCES	Swipely Inc.		Providence, RI
	<i>Intern Engineer</i>		June 2011–Aug. 2011
	<ul style="list-style-type: none"> Developed a statistical inference algorithm to identify merchants from highly noisy and heterogeneous credit/debit card transaction records, with significant accuracy improvement over the existing system for a large number of banks. Used Elastic MapReduce on Amazon EC2 extensively for large scale data analysis. 		
	Bain Capital Absolute Return Capital (ARC)		Boston, MA
	<i>Intern Analyst</i>		June 2010–Aug. 2010
	<ul style="list-style-type: none"> Completed a subsystem in Python to enable <i>large scale option data collection and cleanup</i> and <i>option pricing analysis</i>, which was integrated into existing quantitative research software at ARC. 		
	Mitsubishi Electric Research Lab (MERL)		Cambridge, MA
	<i>Intern Researcher</i>		Jun. 2009–Aug. 2009
	<ul style="list-style-type: none"> Researched and implemented in Python a constraint satisfaction algorithm named “divide and concur”, and applied it to <i>infer 3D human motion from 2D video segments</i>. 		
	Altera Corporation: Toronto Technology Center		Toronto, ON, Canada
	<i>Intern Engineer</i>		May 2006–May 2007
	<ul style="list-style-type: none"> C++ development for FPGA CAD software and regression tests maintenance. Embedded system development (in Verilog and C) for educational FPGA boards. 		

TEACHING EXPERIENCE	6.437 Inference and Information <i>Teaching Assistant</i> <ul style="list-style-type: none"> • Instructors: Prof. P. Golland, Prof. G. W. Wornell • Led recitations, wrote problem sets and exams, and held office hours for the graduate-level statistical inference course. 	EECS, MIT Spring 2011
PUBLICATIONS	<ol style="list-style-type: none"> 1. D. Wang, V. Chandar, S.-Y. Chung and G. W. Wornell, "On Reliability Functions for Single-Message Unequal Error Protection," submitted to <i>IEEE International Symposium of Information Theory</i>, Cambridge, MA, 2012. 2. D. Wang, A. Ingber, Y. Kochman, "A Strong Converse for Joint Source-Channel Coding," submitted to <i>IEEE International Symposium of Information Theory</i>, Cambridge, MA, 2012. 3. D. Wang, A. Ingber, Y. Kochman, "The Dispersion of Joint Source-Channel Coding," <i>49th Annual Allerton Conference on Communication, Control, and Computing</i>, Monticello, IL, September 2011. 4. D. Wang, V. Chandar, S.-Y. Chung and G. W. Wornell, "Error Exponents in Asynchronous Communication," <i>IEEE International Symposium on Information Theory</i>, St. Petersburg, Russia, August 2011 5. D. Wang, D. Silva and F. R. Kschischang, "Robust network coding in the presence of untrusted nodes," <i>IEEE Transactions on Information Theory</i>, vol 56, issue 9, pp 4532-4538, September 2010. 6. B. Liang, S. Drew, and D. Wang, "Performance of multiuser network-aware prefetching in heterogeneous wireless systems," <i>ACM/Springer Wireless Networks</i>, vol 15, no. 1, pp 99-110, January 2009. 7. D. Wang, D. Silva, F. R. Kschischang, "Constricting the Adversary: A Broadcast Transformation for Network Coding," <i>45th Annual Allerton Conference on Communication, Control, and Computing</i>, Monticello, IL, September 2007. 	
GRADUATE COURSES	Advanced Stochastic Processes (S12), Optimization Methods (F11), Cloud Computing (S11), Wavelets, Approximation and Compression (Listener, S11), Statistical Inference in High-Dimensional Settings (Listener, S11), Coding Theory (F10), Principles of Wireless Communication (F09), Convex Optimization (Listener, F09), Information Theory (S09), Inference and Information (S09), Digital Communication I (F08), Algorithms for Estimation and Inference (F08).	
SKILLS & KNOWLEDGE	Quantitative: probability, statistics, inference, estimation, optimization. Programming: Python, C/C++, Java, MATLAB, Elastic MapReduce (hadoop) on Amazon Web Services.	
RECENT AWARDS AND FELLOWSHIPS	<ul style="list-style-type: none"> • Claude E. Shannon Research Assistantship (2011) • NSERC Postgraduate Scholarship (Master & Doctoral level) (2009, 2010) • MIT Hewlett Packard Fellowship (2009) • MIT Irwin M. Jacobs and Joan K. Jacobs Presidential Fellowship (2008) 	
AFFILIATIONS & ACTIVITIES	<ul style="list-style-type: none"> • Co-organizer, <i>RLE Information & Signals Seminar Series (ISSS)</i> Spring 2010–present • VP Academic, EECS Graduate Student Association (GSA), MIT 2010 - Led a five-member team to organize academic and career events for EECS graduate students. • Student organizer, <i>6.454 Graduate Seminar in Area I</i>, MIT Fall 2009 	
LANGUAGES	Fluent in English, Mandarin and Cantonese.	