

# Prapun Suksompong, Ph.D.

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## CURRENT ADDRESS:

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## EDUCATION

**Cornell University**, Ithaca, New York

Doctor of Philosophy in Electrical and Computer Engineering (ECE), Aug 2008.

GPA: 4.24/4.00. Minor in Mathematics.

Master of Science in ECE, Jan 2006.

GPA: 4.24/4.00. Minor in Mathematics.

Bachelor of Science in ECE, Summa Cum Laude, May 2002.

GPA: 4.27/4.00.

## HONORS & AWARDS

Awarded **Teaching Assistant of the Year** by IEEE student branch 2005-06 for exemplary teaching in ECE.

2002-2003 recipient of Fellowship from Cornell University.

Graduated **Summa Cum Laude** from Cornell University in 2002.

**Ranked 1<sup>st</sup>** in engineering class.

Member of the Electrical and Computer Engineering Honor Society Eta Kappa Nu.

1997-2002 recipient of the **King's Scholarship** from the Thai Government.

## WORK EXPERIENCE

**Lecturer**, Sirindhorn International Institute of Technology (SIIT), Thammasat University, Thailand

Nov 2008–Present

**Teaching Assistant**, Cornell University, Ithaca, NY

Introduction to Digital Logic Design

Fall 2003 and Spring 2004

Theory of Linear Systems (Graduate Level)

Fall 2005

Radio Frequency Circuits and Systems

Spring 2006

Digital Communication Receiver Design

Fall 2006

Introduction to Probability and Random Signals

Spring 2007

Computer Networks and Telecommunications

Fall 2007

(Co-meeting between undergrad and graduate courses)

Networks and Systems

Spring 2008

(Additional topics on medical imaging, projection-slice theorem, and filtered backprojection algorithm.)

**Research Assistant**, Cornell University, Ithaca, NY

Fall 2004 and Spring 2005

Analyzed theoretical properties of stochastic inputs to neurons in human brain

with support from National Academies Keck Futures Initiative (NAKFI), USA.

## RESEARCH AREA

Wireless communication, digital communication theory, information theory, probability theory, computation neuroscience, neuro-informational theory.

## CONTRACTED RESEARCH SUPPORT

“Physical Layer OFDMA Based Wireless Communication Systems”, Source:

Telecommunications Research and Industrial Development Institute (TRIDI), NTC,

December 2008 – December 2009.

“Enhancement of Wireless Communication and Applications Research Laboratory”,

Source: TRIDI, NTC, November 2008 – October 2009.

**PAPERS**

- P. Suksompong and T. Berger, “Capacity Analysis of Neurons with Descending Action Potential Thresholds”, IEEE Transactions on Information Theory, 2010, in press. (ISI/Impact: 3.79 (2008))
- P. Suksompong, “Capacity Analysis for Neurons with Descending Action Potential Thresholds”, Ph.D. Dissertation, Cornell University, August 2008.
- P. Suksompong and T. Berger, “Jitter Analysis of Timing Codes for Neurons with Descending Action Potential Thresholds”, IEEE International Symposium on Information Theory (ISIT) 2006, July 11, 2006.
- D. S. Chan, P. Suksompong, J. Chen, and T. Berger, “Improving IEEE 802.11 Performance with Cross-Layer Design and Multipacket Reception via Multiuser Iterative Decoding,” IEEE 802.11-05/0946r0, September 2005.
- J. Chen, P. Suksompong, and T. Berger, “Communication through a Finite-State Machine with Markov Property”, Conference on Information Sciences and Systems (CISS) 2004, January 1, 2004.

**COURSEWORK**

Senior-level Courses:

Random Signals in Communication and Signal Processing  
 Computer Networks and Telecommunications

Global Position System: Theory and Design  
 Radio Frequency Circuits & Systems  
 Honors Introduction to Analysis  
 Introduction to Combinatorics  
 Game Theory

Graduate-level Courses:

Fundamental Information Theory  
 Error Control Codes  
 Communication Networks  
 Multiaccess Communications

Advanced Digital Communications  
 Wireless Networks  
 Detection and Estimation  
 Probability Theory

**ACADEMIC PROJECTS**

**JAVA Projects:** Encoder and decoder for communication over *wireless* peer-to-peer channel. The software provides two operational modes: *a)* binary BCH, and *b)* Reed-Solomon. The decoding is done by Berlekamp’s algorithm • Equilibrium structure finder for molecules where the molecules and their connections are defined by arbitrary graphs.

**MATLAB Projects:** Digital Radio Receiver • Modem for channels with memory including Viterbi algorithm for maximum likelihood sequence estimation • Two-dimensional GPS navigation where less than four satellites are visible • Integrate-and-fire model of neuron as a filtered non-homogeneous Poisson process • Capacity and capacity per unit cost calculation for neuron.

**REFERENCES**

Available upon request