

# CHANTRI POLPRASERT

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Assistant Professor at Department of Computer Science, Faculty of Science, Srinakharinwirot University

## EDUCATION

- Ph.D., Electrical Engineering** 5/09  
University of Washington, Seattle, WA  
Research Advisor: James A. Ritcey, Professor, Ph.D.  
Thesis Title: Wideband communications over time and frequency spread fading channels
- M. Eng., Telecommunications** 12/00  
Asian Institute of Technology (AIT), Pathumthani, Thailand  
Research Advisor: Nandana Rajatheva, Professor, Ph.D.  
Thesis Title: Performance of turbo codes with multilevel modulation over frequency selective fading channels using turbo equalization
- B. Eng., Electrical Engineering** 5/99  
Chulalongkorn University, Bangkok, Thailand

## AWARDS

- 2011 NRCT Ph.D. Thesis Award** 01/12  
National Research Council of Thailand (NRCT)
- Mobile App Award for Tangmochecker Android App** for technologically challenging app 10/11  
National Electronics and Computer Technology Center (NECTEC)
- Werner von Siemens Excellence Award** for Outstanding academic performance. 11/00  
Asian Institute of Technology (AIT), Pathumthani, Thailand
- Excellent Student Paper Award** 11/00  
Proceeding of IEEE Wireless Personal Multimedia Communications Conference (WPMC), Bangkok, Thailand

## TEACHING INTERESTS

Data Science, Data Science  
Computer network  
Computer cryptography and network security  
Numerical methods

Queueing theory and applications  
Computer Programming (lecture+lab) (C/C++, Matlab, Python)  
Probability and stochastic processes  
Digital signal processing  
Fundamental of digital communications  
Fundamental of wireless communications

### **RESEARCH INTERESTS**

Data mining and Machine learning  
Acoustic signal processing  
Digital signal processing in wireless communications  
Computer cryptography and network security  
Internet of Things

### **ACADEMIC EXPERIENCES**

<b>Instructor</b> , Srinakharinwirot University (SWU), Computer Science Program Computer Networks and Security (IT510)	8/14-Present
<b>Instructor</b> , Srinakharinwirot University (SWU), Computer Science Program Numerical Analysis (CP381)	8/14-Present
<b>Instructor</b> , Srinakharinwirot University (SWU), Computer Science Program Data communications and networking (CP431)	8/14-Present
<b>Instructor</b> , Srinakharinwirot University (SWU), Computer Science Program Computer security (CP432)	8/14-Present
<b>Instructor</b> , Asian Institute of Technology (AIT), School of Engineering and Technology Introduction to Teletraffic Engineering (TC403)	1/14-5/14, 8/14-Present
<b>Instructor</b> , Asian Institute of Technology (AIT), School of Engineering and Technology Fundamentals in Telecommunications (TC201)	9/13-Present
<b>Instructor</b> , Sirindhorn International Institute of Technology (SIIT), School of Information, Computer, and Communication Technology Introduction to Computers and Programming (ITS100) <ul style="list-style-type: none"><li>• Basic C programming language. <i>-416 students</i></li></ul>	11/12-3/13
<b>Lab Instructor</b> , Sirindhorn International Institute of Technology (SIIT), School of Information, Computer, and Communication Technology Introduction to Computers and Programming (ITS100) <ul style="list-style-type: none"><li>• Basic Python programming language. <i>-410 students</i></li></ul>	6/13-9/13
<b>Lab instructor</b> , Sirindhorn International Institute of Technology (SIIT), School of Information, Computer, and Communication Technology	6/11-9/11

Introduction to Computers and Programming

- Basic C programming language. -48 students

**Postdoctoral**, University of Washington, Electrical Engineering Department

6/09-9/09

Project: Underwater acoustic communications

**Lecturer**, University of Washington, Electrical Engineering Department

3/09-6/09

Fundamental of wireless communications

- Covered fundamental topics in wireless communications. -38 students

**Research Assistant**, University of Washington, Electrical Engineering Department

3/07-3/09

- Develop single carrier frequency-domain equalization (SC-FDE) and orthogonal frequency division multiple access (OFDMA) systems for data transmission over real underwater acoustic (UWA) channels.
- Investigate channel capacity of OFDM systems over UWA fading channels.

**Lead Teaching Assistant**, University of Washington, Electrical Engineering Department 9/04-5/05, 9/05-5/06

- Supervised and mentored over 50 teaching assistants
- Coordinated among teaching assistants, faculty members and staff in EE to guarantee quality teaching in the department.
- Designed workshops in teaching assistant seminar for new teaching assistants to constantly monitor and improve their teaching performance.

**Teaching Assistant**, University of Washington, Electrical Engineering Department

6/03-9/04, Spring 07

Introduction to Computer-Communications Network

- Supervised senior undergraduate students in implementing 'Network Simulator (NS)' to analyze TCP/IP protocol. -40 students

Capstone Design in Digital Communications

- Designed laboratory experiments for capstone design in communications using Texas Instrument (TI) DSP chips for senior undergraduate students. -40 students

Capstone Design in Signal Processing

- Supervised senior undergraduate students in the capstone design DSP lab in filter design using TI DSP chips. -20 students

Modern Wireless Communications

- Supervised senior undergraduate students and assisted in instruction of discussion sessions. -30 students

Fundamentals of Wireless Communications

- Assisted in instruction of general lab and discussion sessions for graduate students. -30 students

Probability and Random Processes

- Wrote course lecture and assisted in instruction during tutorial sessions for graduate students. -30 students

### Stochastic Analysis of Data from Physical Systems

- Assisted in instruction of general lab and discussion sessions for graduate students. -30 students

**Reviewer**, University of Washington, Electrical Engineering Department 1/03-Present

Evaluate papers for conferences and journals

- IEEE Transaction on Wireless Communications
- IEEE Communication Letters
- IEEE International Conferences in Communications (ICC)
- IEEE Global Telecommunications Conference (GLOBECOM)

**Guest lecturer**, University of Washington, Electrical Engineering Department 9/04

- Gave lectures in basic computer data network for freshmen. -20 students

**Guest lecturer**, Asian Institute of Technology (AIT), Thailand 12/00

Error Control Coding

- Gave lectures in basic error control coding and its applications for graduate students. -20 students

### JOURNAL PUBLICATIONS

**C. Polprasert** and T. Demeechai, "Performance of a frequency-domain OFDM-frame detector", *Physical Communication* (impact factor 1.583) Volume 29, pp 141-146.

M. Xia, D. Rouseff, James A. Ritcey, X. Zou, **C. Polprasert** and W. Xu, "Underwater Acoustic Communication in a Highly Refractive Environment using SC-FDE", *IEEE Journal of Oceanic Engineering*. (impact factor 0.95) Volume: 39, Issue: 3, July 2014

S. Thiemjarus, K. Teachasrisaksakul and **C. Polprasert**, "A Bayesian approach for sound source estimation", *ECTI Transactions on Computer and Information Technology* 2013, 7, 197-205.

**C. Polprasert**, P. Kukieattikuool, T. Demeechai, J. A. Ritcey and S. Siwamogsatham., "New stimulus pattern design to improve P300-based matrix speller performance at high flash rate", *J. Neural Eng.* 10 (2013) 036012 (impact factor 3.81).

**C. Polprasert**, and J. A. Ritcey, "Performance analysis of the bit-interleaved coded modulation using turbo equalization with single carrier frequency domain equalization over fast fading channels", *Signal Processing* 92(12), Elsevier Dec 2012 (impact factor 1.567)

**C. Polprasert**, J. Ritcey, and M. Stojanovic, "Capacity of OFDM systems over underwater acoustic communications", *IEEE Journal of Oceanic Engineering*, vol. 36, no. 4, Oct 2011, pp. 514-524. (impact factor 0.95)

**C. Polprasert** and J. Ritcey, "A Nakagami fading phase difference distribution and its impact on wireless systems," *IEEE Trans. Wireless Commun.*, vol. 7, no. 7, July 2008, pp. 2805-2813. (impact factor 2.586)

### CONFERENCE PROCEEDINGS

**Chantri Polprasert**, Sirapop Kongpatyuen, Chaksawat Aungurasuchon, Atchariya Mana and Chalee Vorakulpipat, “Advertisement Distribution Systems Using Acoustic Data Transmissions”, to be presented at the 2nd International Conference on Advances in Computer Science, Engineering and Communications (ICACEC 2017), 16-17 January 2017, Hongkong.

**Chantri Polprasert**, Soravit Premanan, Nawapas Deemark, Tammarong Nerapusri, “Development of the mobile service robot equipped with multiple sensors for human detection and tracking”, ISTEK 2016, 13 June 2016, Vienna, Austria

Jakawal Ongthongkum\*, Wannisa Anurat, Thanawat Charoenpuangkaew and **Chantri Polprasert**, “A New Approach to Improve The Performance of a Two-Player Board Game using P300-based Brain-Computer Interface”, The 4th International Symposium on Engineering, Energy and Environments, 8-10 November 2015, Thammasat University, Pattaya Campus, Thailand.

Chalee Vorakulpipta, **C. Polprasert**, Siwaruk Siwamogsatham, "Managing mobile device security in critical infrastructure sectors", to be presented at the 7<sup>th</sup> International Conference on Security of Information and Networks (SIN2014), Glasglow/UK, September 9-11, 2014.

**C. Polprasert**, Siwaruk Siwamogsatham and James A. Ritcey, "Performance analysis of the bit-interleaved coded modulation using turbo equalization with single carrier frequency domain equalization using subblock signal processing over fast fading channels," Computer Aided Modeling and Design of Communication Links and Networks (CAMAD), 2013 IEEE 18th International Workshop on , vol., no., pp.149,153, 25-27 Sept. 2013

**C. Polprasert**, Pornanong Pongpaibool, Pratana Kukieattikuool, Chalee Vorakulpipat, Siwaruk Siwamogsatham., “Sensor networks for acoustic source localization using acoustic fingerprinting in urban environments and construction sites”, *2011 Proceedings of the 28th ISARC*, Seoul, Korea, June 29<sup>th</sup> – July 3<sup>rd</sup>, 2011

**C. Polprasert** and J. Ritcey, “[EXIT chart analysis for the Bit-interleaved Turbo Frequency Domain Equalization under Fast Fading Environments](#)”, *the 43rd Asilomar conference on signals, systems and computers, Asilomar*, CA November 1st-4th, 2009.

**C. Polprasert**, J. Ritcey, and M. Stojanovic, “Capacity of OFDM systems over underwater acoustic communications”, *the 157<sup>th</sup> meetings of the Acoustical Society of America*, Portland, Oregon, May 19<sup>th</sup>-22<sup>nd</sup> 2009

**C. Polprasert** and J. Ritcey, “Performance of bit-interleaved frequency domain turbo equalization over experimental underwater acoustic channels“, *Proc. of ASILOMAR*, Monterey, CA, Oct 2008.

J. Ritcey and **C. Polprasert**, “A novel stochastic model and fast generation method for Nakagami fading channels”, *Proc. of ASILOMAR*, Monterey, CA, Nov 2007.

**C. Polprasert** and J. Ritcey, “A comparison of Nakagami and Ricean phase difference distributions”, *IEEE Pacific Rim Conference on Communications, Computer and Signal Processing (PACRIM)*, Victoria, Canada, Aug 2007.

C. Polprasert and J. Ritcey, "Phase difference statistics for Nakagami- $m$  fading channels", *IEEE Pacific Rim Conference on Communications, Computer and Signal Processing (PACRIM)*, Victoria, Canada, Aug. 2005.

C. Polprasert and J. Ritcey, "Effect of imperfect CSI on iteratively decoded BICM over Nakagami fading channels", *IEEE Pacific Rim Conference on Communications, Computer and Signal Processing (PACRIM)*, Victoria, Canada, Aug. 2005.

C. Polprasert and R. Rajatheva, "Performance of turbo codes with multilevel modulation and turbo equalization over frequency selective fading channels", *IEEE International Conference on Communications (ICC)*, Helsinki, Finland, June 2001.

C. Polprasert and R. Rajatheva, "Performance of turbo codes with multilevel modulation over frequency selective fading channels", *IEEE Wireless Personal Multimedia Communications Conference (WPMC)*, Bangkok, Thailand, Nov. 2000.

### **INDUSTRIAL EXPERIENCES**

**Researcher, National Electronics and Computer Technology Center (NECTEC),** 4/10-1/14

- Acoustic source localization in urban environments
- Tangmochecker Android App
- Brain-computer Interface using P300 matrix speller
- LED driver analysis

**Network Software Intern, Intel Corp., Hillsboro, OR.** 6/06-12/06

- Developed software simulating MAC layer of the future cellular network (LTE).
- Investigated power-efficient scheduling algorithms for WiMAX network.

**RF Software Intern, T-Mobile USA Inc., Bellevue, WA.** 6/05-8/05

- RF design in Technology Development department.
- Investigated the impact of Narrow-Band Adaptive Multi-rate speech codec (AMR-NB) and Wideband AMR (AMR-WB) over UMTS/WCDMA cellular network.

**Core Network Engineer, Ericsson Ltd., Bangkok, Thailand** 1/01-8/02

- Collaborated with customer's engineering team to deliver the best solution in designing GSM cellular network which covered around 10 million subscribers (during 02).
- Analyzed the impact of new services such as pre-paid, USSD, on the existing cellular network capacity e.g. number of subscribers it can handle, processor load.
- Analyzed the statistical data obtained from the customer's network and evaluated the current network situations or clarify present or impending problems.