

Scott Chun-Yang Chen

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EDUCATION

- California Institute of Technology** *Pasadena, CA* Present
Ph.D. Electrical Engineering; GPA 4.0/4.0
Minor in Applied & Computational Mathematics,
Specializing in Digital Signal Processing, Advisor: Dr. P. P. Vaidyanathan
- National Taiwan University** *Taipei, Taiwan R.O.C.* June 2002
M.S. Communication Engineering, GPA 4.0/4.0
B.S. Electrical Engineering, GPA 3.6/4.0 June 2000

PROFESSIONAL SKILLS

- 10+ years of programming experience using C/C++ and MATLAB; Experienced in programming with teammates under time pressure; Have worked on various tools such as ASP, PHP, SQL and PowerBuilder
- 9+ years of experience in Digital Signal Processing and Communication theory: worked on practical algorithms such as FFT, Wavelet Transforms, Adaptive filtering, OFDM, CDMA and LDPC decoder.
- Strong background (Ph.D. minor degree) in Computational Mathematics: knowledgeable on Optimization, Statistical Modeling, Matrix Computation and Stochastic Process.

EXPERIENCES

- California Institute of Technology** *Pasadena, CA* 2004-Present
Ph.D. Researcher in Digital Signal Processing group
- Proposed novel algorithms for communication systems such as ultra-wideband signal design, optimal MIMO communication system with receiver feedback
 - Proposed novel algorithms for beamforming and radar systems such as robust beamforming, space-time processing for MIMO radar, and frequency hopping codes for MIMO radar
 - Authored 1 book chapter, 6 journal papers and 11 conference papers on my research results
- California Institute of Technology** *Pasadena, CA* 2005-Present
Teaching Assistant in EE111 Signals, Systems and Transforms, EE112ab DSP, and EE128ab Multirate Systems
- Held 3 hours of TA sessions every week which involved active discussions with students
 - Got excellent feedback (6.8/7.0) for my TA duties through the official survey conducted by Caltech
 - Lectured the class several times
- National Taiwan University** *Taipei, Taiwan* 2000-2002
Research Assistant in Signal Processing for Communication group
- Developed new algorithms for OFDM system such as BER optimized Time-Domain Equalizer and Fast algorithm for Per-Tone Shaping Filtering; published 1 journal paper and 4 conference papers on these results
- Mytelweb, Inc.** *Taipei, Taiwan* 2000-2001
Software Engineer
- Led a team of 3 people to develop several web and cell phone based applications such as transmitting instant messages to cell phones via web interface

- Helped developing several client-server and web based distributed database applications for management systems on NTU campus such as the school property management database systems, one of which won the 3rd prize in the student programming competition
- Worked on various tools such as SQL, ASP, PHP, and PowerBuilder

AWARDS AND HONORS

- Best student paper award, Intl. Conf. on Acoustics, Speech, and Signal Proc. (ICASSP), Honolulu, HI 2007
for the paper titled "**A Subspace Method for MIMO Radar Space-Time Adaptive Processing**"
- Li Ming Scholarship, Caltech 2006
- Center for the Mathematics of Information Fellowship, Caltech 2004
- Special Institute Fellowship, Caltech 2004
- Texas Instrument DSP Solution Challenge Merit Award, Taiwan 1999

BOOK CHAPTER AND JOURNAL PUBLICATIONS

1. **Chun-Yang Chen** and P. P. Vaidyanathan, "MIMO Radar Space-Time Adaptive Processing and Signal Design," chapter 6 in *MIMO Radar Signal Processing*, edited by J. Li and P. Stoica, Wiley, 2008
2. Ching-Chih Weng, **Chun-Yang Chen** and P. P. Vaidyanathan, "Generalized Triangular Decomposition in Transform Coding," in Preparation
3. **Chun-Yang Chen** and P. P. Vaidyanathan, "MIMO Radar Waveform Optimization with Prior Information of the Clutter and Target," submitted to IEEE Trans. on Signal Processing
4. Ching-Chih Weng, **Chun-Yang Chen** and P. P. Vaidyanathan, "MIMO Transceivers with Decision Feedback and Bit Loading: Theory and Optimization," submitted to IEEE Trans. on Signal Processing
5. **Chun-Yang Chen** and P. P. Vaidyanathan, "MIMO Radar Ambiguity Properties and Optimization Using Frequency-Hopping Waveforms," IEEE Trans. on Signal Processing, Dec. 2008
6. **Chun-Yang Chen** and P. P. Vaidyanathan, "MIMO Radar Space-Time Adaptive Processing Using Prolate Spheroidal Wave Functions," IEEE Trans. on Signal Processing, Feb. 2008
7. **Chun-Yang Chen** and P. P. Vaidyanathan, "Quadratically Constrained Beamforming Robust Against Direction-of-Arrival Mismatch," IEEE Trans. on Signal Processing, Aug. 2007
8. **Chun-Yang Chen** and P. P. Vaidyanathan, "Precoded FIR and Redundant V-BLAST Systems for Frequency-Selective MIMO Channels" IEEE Trans. on Signal Processing, July 2007
9. See-May Phoong, Yubing Chang and **Chun-Yang Chen**, "DFT-modulated filterbank transceivers for multipath fading channels" IEEE Trans. on Signal Processing, Jan. 2005

CONFERENCE PUBLICATIONS

ISCAS 2003-Poster, ICASSP 2004-Poster, Asilomar 2005 -Lecture, ISCAS 2006-Lecture, Asilomar 2006-Lecture & Poster, ICASSP 2007-Lecture, Asilomar 2007-Lecture, ICASSP 2008-Lecture, ISCAS 2008-Lecture, Asilomar 2008-Lecture&Poster, ICASSP 2009-Lecture & Poster

REFERENCES

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