

Wen-Chi Tu

Address: 3777 Mentone Ave. Apt. 110, Los Angeles, CA 90034

Email: b89901072@ntu.edu.tw Phone: 626-715-1168

Education	<p>M.S. in Electrical Engineering, UCLA, Los Angeles, CA</p> <ul style="list-style-type: none">- Sep 2006 – Jun 2008- Communications and Telecommunications Systems Track- GPA overall 3.83- Coursework: <p><u>Communications:</u> Estimation and Detection in Communication and Radar Engineering, Stochastic Modeling with Applications to Telecommunication Systems, Information Theory: Channel and Source Coding, Channel Coding Theory, Digital Communication Systems, Wireless Communications Systems</p> <p><u>Digital Signal Processing:</u> Multimedia Communications and Processing, Adaptive Filtering</p> <p><u>Optimization:</u> Linear Programming, Nonlinear Programming</p> <p>B.S. in Electrical Engineering, National Taiwan University, Taiwan</p> <ul style="list-style-type: none">- Sep 2000 – Jun 2004- GPA overall 3.61- GPA last 60 3.77
Research and Publications	<p><u>Dynamic Resource Allocation of Delay Sensitive Users Using Interactive Learning over Multi-carrier Networks</u> (Accepted)</p> <ul style="list-style-type: none">- <i>IEEE International Conference on Communications 2008</i>- Author: Hsien-Po Shiang, Wenchi Tu, and Mihaela van der Schaar- Proposed distributed solutions for power control and channel selection in multi-carrier networks <p><u>Distributed Spectrum Allocation of Delay-sensitive Users over Multi-user Multi-carrier Networks</u> (Accepted)</p> <ul style="list-style-type: none">- <i>IEEE Globecom 2008 Communications Quality of Service, Reliability, and Performance Modeling Symposium</i>- Author: Wenchi Tu, and Mihaela van der Schaar- Proposed foresighted channel selection strategies for delay-sensitive users to minimize their packet loss rate in collision avoidance multi-carrier networks <p><u>Predictive Spectrum Access for Multimedia Users over Multi-Channel Wireless Networks</u> (Submitted)</p> <ul style="list-style-type: none">- <i>IEEE Transaction on Multimedia</i>- Author: Hsien-Po Shiang, Wenchi Tu, and Mihaela van der Schaar- Developed algorithms for autonomous multimedia users to adaptively select spectrum access strategies to maximize their utilities
Specialties	<ul style="list-style-type: none">- Digital communications, fading channel modeling, OFDM, MIMO, Source and channel encoding and decoding- Queuing analysis- (Adaptive) Filter Design and Algorithms- FPGA, VHDL- Standards: IEEE 802.11n, IS-95- Linear and convex optimization- Some familiarity with H.264

Awards and HonorsFine Work Award

- 2003 National Taiwan University Science and Engineering Award
- Topic: Virtual 3D Sound Effects
- Emulated sound effects with Direct Sound designing tool to make real time sound environment, including echoes and multiple sources.

Skills

Design and simulation: MATLAB, C++, Visual Basic, VHDL

Equipment: Oscilloscope, Function generator

Document: Microsoft office, Visio

Term ProjectsDistributed Spectrum Allocation of Delay-sensitive Users over Cognitive Radio Networks, 2007

- Constructed and analyzed distributed channel selections for foresighted users in the cognitive radio network
- Priority queuing analysis
- A Matlab project

IEEE 802.11n System Simulation, 2007

- Simulated the IEEE 802.11n system with 1-ray, 2-ray, and 4-ray channel models and compare the results of theoretical Rayleigh fading channel.
- Discussed the effect of diversity, Doppler frequency, and spatial streams.
- Understood basic MIMO and OFDM systems
- A Matlab project

Message Passing Decoder, 2007

- Simulated and compared the performance of message passing decoder with syndrome decoder (erasure decoder) in BSC, BEC, and AWGN channel.
- A C++ project

Performance Analysis of MFSK Modulation in AWGN Channel, 2006

- Analyzed the performance of coherent and non-coherent MFSK modulations and simulating them to verify the theoretical bounds
- A Matlab project

A Digital Recorder Design on FPGA, 2003

- Used the RAM, ADC, DAC, a speaker, a microphone, and a self-made control panel to design a multifunction digital recorder on a FPGA board.
- A VHDL project

Chinese Speech Recognition, 2003

- Advisor: Prof. Lee, Lin-Shan, National Taiwan University
- Used Hidden Markov Model and Viterbi Algorithm to detect and recognize pronunciations of Chinese words.
- A C++ project