

## CHI ZHANG

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### EDUCATIONS

- University of Texas at Dallas(UTD), Richardson, TX, USA Sep. 2006-Dec. 2010(Expected)  
**Ph.D.** in Electrical Engineering  
-Research Assistant in Center of Robust Speech Systems(CRSS)
- Aalborg University(AAU), Aalborg, DENMARK Aug. 2004-Jun. 2006  
**M.Sc.** in Electrical Engineering  
-Specialization: Signal and Information Processing in Communication  
-Thesis topic: **High-resolution channel parameter estimation for distributed scatterers**
- Nanjing University of Aeronautics and Astronautics (NUAA), CHINA Aug. 2000-Jun. 2004  
**B.E.** in Electrical Engineering  
-Thesis topic: **Analysis and Simulation of ALOHA protocols**

### MAIN FIELD OF INTERESTS

Digital Signal Processing, Vocal Effort Modeling and Analysis, Whispered Speech Processing, Speech/Speaker Recognition for Whispered Speech.

### PROFICIENCY SKILLS

**Programming Languages:** C/C++, Perl

**Operation Systems:** Windows, Unix, Linux

**Software:** MATLAB, Adobe Audition, HTK

### MAIN RESEARCH EXPERIENCES

#### *Ph. D. Program, CRSS, UTD*

**Supervisor: John, H.L. Hansen**

**Aug. 2006~Present**

-Designed and Constructed UT-VocalEffort I & II Corpus(hired three student workers) including speech produced under different vocal efforts and neutral speech with whispered speech islands;

-Analysis and modeling of speech under different vocal efforts;

-Developed an algorithm for detection of whispered speech island within neutral speech;

-Explore the improvement of the current speech/speaker recognition algorithms for whispered speech.

#### *Master Program, AAU*

**1) Master thesis: High-resolution channel parameter estimation for distributed scatterers**

**Supervisor: Bernard Henri Fleury, Xuefeng Yin**

**Sep. 2005~Jun. 2006**

-Applying channel estimation techniques based on the bivariate von-Mises stochastic model

-Simulating channel estimation in environments consisting of distributed and specular scatterers.

**2) Single channel speech enhancement using independent components**

**Supervisor: Soren Holdt Jensen, Jesper Jensen**

**Feb. 2005~Jun. 2005**

- Co-operated with ETI A/S (Company) , Norresundby.
- Studied Independent Components Analysis (ICA) theory, and relevant academic papers.
- Simulated and improved preprocessing system using ICA based Wiener filter and evaluated its performance.
- Enhanced the speech by reducing the noise level with ICA techniques.

### 3) Speech coding using two-sided linear prediction

**Supervisor: Soren Vang Andersen, Chunjian Li**

**Sep. 2004~Jan. 2005**

- Studied relevant theory, mathematical model and academic papers.
- Simulated speech coding systems with one-sided and two-sided linear prediction respectively, and compared the capabilities of them.
- Evaluated the performance of two-sided linear prediction with different speech coding methods.

### Bachelor Program, NUA

**Diploma Project: Analysis and Simulation of ALOHA protocols**

**Mar.~Jun. 2004**

- Analysis and simulations of typical ALOHA protocols;
- Evaluation of the CSMA protocol based on ALOHA;
- Discussed the limitation of ALOHA protocols and possible improvements.

### **PUBLICATIONS:**

#### **Conference:**

- **Zhang, C.** and Hansen, J. H. L., “Analysis and Classification of Speech Mode: Whispered through Shouted”, INTERSPEECH 2007-ICSLP, pp2289-2292, Antwerp, Belgium, 2007.
- **Zhang, C.** and Hansen, J. H. L., “Effective Segmentation based on Vocal Effort Change Point Detection”, ITRW 2008, paper 034, Aalborg, Denmark, 2008
- **Zhang, C.** and Hansen, J. H. L., “An Entropy based Feature for Whisper-Island Detection within Audio Streams”, INTERSPEECH 2008-ICSLP, pp2510-2513, Brisbane, Australia, 2008
- **Zhang, C.** and Hansen, J.H.L., “Advancements in Whisper-Island Detection within Normally Phonated Audio Streams”, INTERSPEECH2009-ICSLP, Brighton, United Kingdom, 2009
- **Zhang, C.** and Hansen, J. H. L., “Advancements in Whisper-Island Detection using the Linear Predictive Residual”, ICASSP2010, Dallas, TX, US, 2010

#### **Journal:**

- **Zhang, C.** and Hansen, J. H. L., “An Unsupervised Effective Algorithm for Whisper-Island Detection”, IEEE Transactions on Audio, Speech and Language Processing (submitted).

### **AWARDS AND ACHIEVEMENTS**

**ISCA Interspeech Student Travel Grant Award**

**2008**

**Research Assistantship at Dept. of Electrical Engineering, UTD**

**2006 to present**

**Tuition Waive Scholarship in Aalborg University, Denmark**

**2004 to 2006**

**Undergraduate Scholar Program Scholarship**

**2001 to 2003**