Dagen Wang

Professional experience

Profile

I have more than 10 years of IT experience. During last 2 years, I mainly focused on embedded speech system development. I have prior experiences in computer system, compiler, communication, multimedia and human computer interaction.

During my career, I have gained experiences in the full software project life cycle: business analysis, design and implementation, quality assurance, customer cummunication and service.

Employer History

05/2007 - To date **IBM, Yorktown Heights, New York, United States of America**
business operation professional
embedded speech recognition and translation software
- developed P2 handheld software stability control system
- resolved software/hardware defects for product delivery
- SD card access error simulation and detection
- P2 usability improvement (GUI, effectiveness)

speech recognition core engine (Viavoice, Attila)
- improved FMLLR adaptation algorithm
- ported speech/silence detection algorithm between engines
- improved noise robustness of viavoice

05/2006 - 05/2007 **Conversay Computing Corp, Redmond, Washington, United States of America**
speech scientist
speech recognition software on embedded device
- algorithm optimization: speed, memory
- developed the regression test and build system
- developed fixed-point clipping reconstruction algorithm
- web-mining of vast amount of internet data
- developed a graph construction and search algorithm

01/2006 - 05/2006 **Tactical Language Training LLC, Los Angeles, California, United States of America**
internship
language learning software development
- ported Julian decoder to the system

08/2001 - 05/2006 **Speech Analysis Lab of USC, Los Angeles, California, United States of America**
research assistant
human computer interaction software research and development
project1: virtual human based training
project2: english-farsi speech to speech translation
- developed a speech recognition system from end to end
- designed the system architecture and communication protocal
- led the integration efforts

01/2001 - 08/2001 **Intel Microprocessor Lab, Beijing, China**
researcher

		open source compiler research and development - investigated Intel open source Java virtual machine (ORP) - IA-64 porting of open source Intel C/C++ compiler (ORC) - investigated inter-procedure communication (ORC)
	08/2000 - 01/2001	**Intel China Research Center, Speech Group, Beijing, China** **researcher** call center software development - developed Voice XML parser and set up runtime enviroment - ported speech recognition software from windows to linux - developed service interface for Intel speech server
	09/1997 - 05/2000	**Technology Corp. of Peking University, Beijing, United States of America** **software developer** communication and database management software development - developed communication code over TCP/IP with multi-threading - developed application on Dialogic telephony card
Assignment History	**05/2007 - 12/2007**	U.S. Government/Army, Yorktown Heights, New York, United States of America CARSON: speech to speech translation system on P2 handheld device business operation professional Project Description: P2 handheld speech translation system stability, performance and usability improvement: involved in design, implement, testing and deliver
	05/2007 - To date	IBM research, Yorktown Heights, New York, United States of America speech recognition engine research speech scientist Project Description: - improve the noise robustness of embedded Viavoice - improve the FMLLR algorithm on embedded Viavoice - port speech/silence detection from WVS engine to Attila engine

Key Skills

Developement Language:
- C/C++, Assembly language, Java, Delphi, VB

Script Language:
- Perl, Python, Bash

Computational Language:
- Matlab, Octave

System knowledge:
- Linux, Windows CE, Windows, Unix
- C/C++ compiler
- Java Virtual machine

Development Tools and automation:
- GNU development tools (make, gdb, cvs/subvision, scripting ...)
- Embedded system development enviroment and tools

- Visual Studio series

Hardware Knowledge:
- Computer architecture
- Analog/Digital circuits
- VHDL development

Key Courses and Training

Computer Science :
- software engineering, C language, assembly language
- computer systems, VHDL hardware description language
- algorithm analysis and design, artificial intelligence
- computer graphics

Electrical Engineering :
- digital signal processing theory/lab, multimedia compression, speech recognition, wavelet
- estimation theory, digital communication, random process, pattern recognition, information theory and coding
- analog/digital circuits system theory/lab

Education

Qualifications

Ph.D. in Electrical Engineering (Minor Degree: Computer Science)
University of Southern California, United States of America, 2006
Thesis Title: A study of meta-linguistic features for spontaneous speech processing, 2006

M.S. in Electrical Engineering
Peking University, China, 2000
Thesis Title: YDRQ communication system design and implementation, 2000

B.S. in Electrical Engineering
Peking University, China, 1997
Thesis Title: Spectral line stabilization of liquid scintillation counter, 1997

Languages

English	Fluent
Chinese (Simplified)	Fluent
Chinese (Traditional)	Fluent

Other relevant information

Publications

Dagen Wang and Shrikanth Narayanan: **An acoustic measure for word prominence in spontaneous speech**, in: IEEE Transactions on Speech, Audio and Language Processing, 15(2):690–701, IEEE, 2007

Dagen Wang and Shrikanth Narayanan: **Robust speech rate estimation for spontaneous speech**, in: IEEE Transactions on Speech and Audio Processing, 15(8):2190–2201, IEEE, 2007

Dagen Wang and Shrikanth Narayanan: **Piecewise linear stylization of pitch measure in spontaneous speech**, in: Eurospeech, IEEE, 2005

Dagen Wang and Shrikanth Narayanan: **An unsupervised quantitative measure for word prominence in spontaneous speech**, in: Proc. ICASSP, IEEE, 2005

Shrikanth Narayanan and Dagen Wang: **Speech rate estimation via temporal correlation and selected sub-band correlation**, in: Proc. ICASSP, IEEE, 2005

Dagen Wang and Shrikanth Narayanan: **A multi-pass linear fold algorithm for sentence boundary detection using prosodic cues**, in: Proc. ICASSP, IEEE, 2004

Dagen Wang and Shrikanth Narayanan: **A confidence-score based unsupervised map adaptation for speech recognition**, in: 36th Asilomar Conference on Signals, Systems and Computers, IEEE, 2002

Other job-related activities

HONORS
2005 Finalist in best student paper contest of ICASSP 2005, Philadelphia, PA
2004 Outstanding TA for electrical engineering undergraduates, USC
2001-06 Research Assistant/Teaching fellowship, USC
1999 Excellent Graduate Student Award at Peking University
1997 Motorola Fellowship at Peking University

TEACHING EXPERIENCE
2007 Teacher, Olympic Mathematics, grade 4, Northwest Chinese School, Seattle, WA
2003 Teaching Assistant, Digital Signal Processing, USC (received the only award for all undergraduate TAs)
2002 Teaching Assistant, Probability for engineers, University of Southern California
1998 Teaching Assistant, Circuit Theories, Peking University, Beijing, P.R.China