

Wei Chen

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Objective

To obtain a research position in dialog systems, natural language understanding and related applications.

Education

Carnegie Mellon University, Pittsburgh, PA
Ph.D. in Computer Science - Language Technologies expected: 05/2011

Johns Hopkins University, Baltimore, MD
M.S.E. in Computer Science 05/2007

Peking University, Beijing, China
B.S. in Computer Science 07/2005

Awards

NSF TRAVEL GRANT (\$2000) -2009 QG WORKSHOP 2009
CMU RESEARCH FELLOWSHIP 2008-present
AAAI SCHOLARSHIP 2008

Publications

Wei Chen, Gregory Aist and Jack Mostow. Generating Questions Automatically from Informational Text. In *Proceedings of The 2nd Workshop on Question Generation*. Brighton, UK. (8 pages)

Jack Mostow and **Wei Chen**, Generating Instruction Automatically for the Reading Strategy of Self-Questioning. In *Proceeding of AIED2009*. Brighton, UK. (8 pages)

Wei Chen. Understanding Mental States in Natural Language. 2009. In *Proceedings of IWCS-8*. Tilburg, the Netherlands. (12 pages)

Wei Chen and Scott E. Fahlman. Modeling Mental States and Their Interactions. *AAAI 2008 Fall Symposium on Biologically Inspired Cognitive Architectures*. Arlington, VA. (6 pages)

Wei Chen. Dimensions of Subjectivity in Natural Language (Short Paper). In *Proceedings of ACL-HLT'08*. Columbus Ohio. (4 pages)

Unpublished Technical Reports

Wei Chen. Discriminative Word Alignment with Syntactic Features. *Machine Translation Lab Report*. Language Technologies Institute, Carnegie Mellon University, May 2008. (9 pages)

Wei Chen. Building Language Model on Continuous Space Using Gaussian Mixture Models. *Technical Report submitted to Center of Language and Speech Processing*, Johns Hopkins University, July 2007. (66 pages)

Vamshi Ambati and **Wei Chen**. Cross Lingual Syntax Projection for Resource-Poor Languages. 2007. (20 pages)

Research Experiences

CARNEGIE MELLON UNIVERSITY, *Language Technologies Institute-Robotics Institute*, 08/2008-present
A reading tutor that listens to children's questions about text.

- Developing a dialog system that helps young children make questions about their reading material.
- Improving speech recognition system to better recognize children speech.
- Classifying children's utterances.

Question generation and answering from children stories.

- Developed automatic question generation from deep text analysis.

- Implemented methods for automatic scoring of answers.
- Designed an automatic intervene scenario for Project LISTEN's reading tutor to scaffold children's learning of reading comprehension strategies.

CARNEGIE MELLON UNIVERSITY, *Language Technologies Institute,* 10/2007-present
Understanding mental states in natural language.

- Developed a multi-mental-context network that represents various mental states expressed in English.
- Designed and implemented an inter-contextual inference mechanism which performs reasoning based on new information and a multi-modal memory.
- Implemented and modified anaphora resolution algorithm for children stories.
- Analyzed experimental results of the mental state understanding system on children stories.
- Implemented a package for mental state understanding from raw English text (runs on Linux machines).

CARNEGIE MELLON UNIVERSITY, *Language Technologies Institute,* 02/2008-05/2008
Applying syntactic features to discriminative word alignment.

- Designed three types of syntactic features for discriminative word alignment.
- Modified and implemented the three types of features using belief prorogation algorithm on an existing discriminative word alignment system.
- Analyzed experimental results on Chinese-English corpus.

JOHNS HOPKINS UNIVERSITY, *Center of Language and Speech Processing,* 02/2007-07/2007
Building a language model on continuous space using Gaussian Mixtures.

- Experimented on a new method for predicting infrequent words by borrowing information from frequent words that are close to them in a word vector space.
- Designed data structures and implemented Non-negative Matrix Factorization algorithm on large sparse matrices.
- Trained Gaussian mixture models on word vector space using the HTK toolkit.
- Trained MAP adaptation models to refine the language model.
- Analyzed experimental results.

JOHNS HOPKINS UNIVERSITY, *Computer Science Department,* 05/2006-08/2006
Morphology annotation.

- Generated training data files for fourteen different languages from the Germanic, Semitic, and Indo-European families for morphology analysis.
- Reported performance of Systran.

Teaching Experiences

JOHNS HOPKINS UNIVERSITY, Baltimore, MD Fall 2006

Head Teaching Assistant: Introduction to Algorithms (600.363/463, taught by Dr. Baruch Awerbuch)

- Gave lectures to 37 graduate/undergraduate students.
- Held review sessions.
- Held office hours.
- Graded homeworks.

JOHNS HOPKINS UNIVERSITY, Baltimore, MD Spring 2006

Course Assistant: Data Structures (600.226, taught by Dr. Peter Froehlich)

- Graded homeworks and final projects.
- Held office hours.

JOHNS HOPKINS UNIVERSITY, Baltimore, MD Fall 2005

Course Assistant: Computer Systems Fundamental (600.333/433, taught by Dr. Gerald Masson)

- Graded homeworks and exams.
- Held office hours.

Work Experiences

ADVANCED SYSTEM DEVELOPMENT CORPORATION (Sponsored by IBM and Tsinghua University) 06/2004-08/2004

Website Designer and Head Sales Representative, Intern

- Added several searching functions to the customer database for Asian Cup 2004 Ticket Website.
- Created advertisements for the ticket website.
- Supervised 5 other sales representatives.

Presentations and Public Speech

AAAI 2008 FALL SYMPOSIUM ON BIOLOGICALLY INSPIRED ARTIFICIAL INTELLIGENCE 11/2008

Plenary Session Talk: summarized the BICA symposium to all the AAAI FSS-08 participants.

CMU-LTI STUDENT RESEARCH SYMPOSIUM

09/2008

Poster Presentation: the mental state understanding system.

Selected Implementations

Mental State Understanding Package (Python, Lisp), Carnegie Mellon University

03/2008-09/2008

Non-negative Matrix Factorization on Large Sparse Matrices (C), Johns Hopkins University

05/2007

Synchronous Multimedia Editing System (C++), HCI & Multimedia Lab, Peking University

05/2004-06/2005

Professional Activities

AAAI 2008 FALL SYMPOSIUM ON BIOLOGICALLY INSPIRED ARTIFICIAL INTELLIGENCE

11/2008

Reviewer: reviewed paper submissions and gave feedback to authors and symposium organizers.

THE FREEBSD HANDBOOK PROJECT (CHINESE EDITION)

2004-present

Bug Reporter

Leadership and Volunteer Experiences

AAAI FSS-08, Arlington, VA

11/2008

Volunteer: assisted conference registration.

THE BORN FREE FOUNDATION (an international wildlife charity)

08/2008-present

Supporter

ACL/HLT-08, Columbus, OH

06/2008

Volunteer: assisted conference registration, provided help on setting up poster boards.

CARNEGIE MELLON UNIVERSITY, Language Technologies Institute, Pittsburgh, PA

Spring, 2008

Volunteer organizer: organized the LTI student winter skating event.

PEKING UNIVERSITY, Dept. of Computer Science and Technology, Beijing, China

09/2002-09/2003

Head of the Sports Department of Student Association

Computer Skills

Programming Languages: Java (proficient), C/C++ (experienced), Perl (proficient), LISP (experienced), Python (proficient), SQL (proficient)

Operating Systems: Windows (proficient), Linux (proficient), Sun Solaris (experienced)

Mathematical Tools: Matlab (experienced)

Interests

Running: Second place in Winter Long-distance Race, Peking University.

2002

Amateur Pianist: Grade Eight, Test of Central Conservatory of Music, China.

1998