

Matthew Gerber

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Objective

Obtain an internship position in the field of natural language processing research, with the goal of advancing the state-of-the-art in semantic textual analysis.

Education

Ph.D. (in progress), Michigan State University

2005 – Present

Expected date of completion: May, 2010

Degree program: Computer Science

GPA: 3.88 / 4.0

Advisor: Dr. Joyce Chai

B.S. (High Distinction), Ohio Northern University

2001 – 2005

Degree program: Computer Science

GPA: 3.86 / 4.0

Research Interests

Natural language processing, specifically in

- ❖ Nominal semantic role labeling
- ❖ Information extraction
- ❖ Automated question answering

Research Experience

Graduate Research Assistant

Michigan State University

- ❖ **Nominal argument structure**, although common in natural language, has not received as much attention as verbal argument structure in recent years. To help narrow this gap, I

developed logistic regression-based approaches to automatically identify nominal argument structure in free text. Duration: January 2009 – Present.

- ❖ **The Advanced Question Answering for Intelligence (AQUAINT)** project developed techniques to facilitate intelligence analysts' exploration of data in a conversational setting. While working on this project, I leveraged the abundance of information contained in Wikipedia to help users navigate complex concept spaces using intuitive visualization models. Duration: September 2006 – December 2007.
- ❖ **The Complex Interactive Question Answering (CIQA)** project developed retrieval methods and interfaces to facilitate users' exploration of complex information needs in an interactive question answering setting. While working on this project, I implemented relevance feedback models that used explicit user feedback to re-rank answer passages. Duration: May 2007 – August 2007.

Undergraduate Researcher

University of California at Berkeley

- ❖ I developed an OWL-based representation of the FrameNet data. In its OWL form, FrameNet data is readily consumed by standard semantic web tools, facilitating inference and knowledge discovery. Duration: June 2004 – August 2004.

Teaching Experience

Teaching Assistant

Michigan State University

- ❖ Introduction to Programming (Python), in which I administered lab sessions for 30 students. Duration: May 2008 – August 2008.
- ❖ Information Retrieval, in which I held consultation hours to help students resolve technical questions related to the course. I also gave two full-length lectures, one on automatic text summarization and the other on automatic question answering. Duration: September 2008 – December 2008.

Teaching Assistant

Ohio Northern University

- ❖ Introduction to Programming (Java)
 - ❖ Digital Logic
 - ❖ Computer Architecture
- Duration: 2002 – 2005.

Industry Experience

Systems Analyst (summer intern)

Berlin, Ohio. Duration: 2002 – 2004.

Ontario Systems Corporation

Conference Publications

1. M. Gerber, J. Chai, and A. Meyers. The Role of Implicit Argumentation in Nominal SRL. *Proceedings of the North American Chapter of the Association for Computational Linguistics*, 2009.
2. M. Gerber and J. Chai. Class-based Nominal Semantic Role Labeling: A Preliminary Investigation. *Proceedings of the Midwest Computational Linguistics Colloquium*, 2008.
3. C. Zhang, M. Gerber, T. Baldwin, S. Emelander, J. Chai, and R. Jin. Michigan State University at the 2007 TREC ciQA Task. *Proceedings of the Sixteenth Text Retrieval Conference*, 2007.
4. M. Gerber and J. Chai. Automatic Topic Term Identification for Contextual Question Answering. *Proceedings of the Midwest Computational Linguistics Colloquium*, 2006.

Relevant Coursework and Technical Skills

Courses

Theory of Probability and Statistics
 Machine Learning
 Introduction to Linguistics
 Introduction to Syntax

Introduction to Computational Linguistics
 Information Retrieval
 Human-Computer Communication
 Natural Language Processing

Operating systems

Linux, UNIX, Windows NT

Programming/representation languages

C#, Java, Perl, Python, C++, XML, OWL

Fellowships and Awards

Integrated Graduate Education and Research Training Fellowship

NSF-supported fellowship, Michigan State University, 2005 – 2007.

Academic Honors Scholar

Ohio Northern University, 2001 – 2005.