

## HEIDI J. FOX

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### Summary

Over thirteen years experience in the field of natural language processing including cutting-edge research and delivery of functional prototype systems.

### Education

#### **Brown University**

Providence, RI

Ph.D. in Computer Science, expected December 2005.

Thesis advisor: Eugene Charniak

Thesis topic: Statistical Machine Translation from Czech to English

#### **Brown University**

Providence, RI

S.M. in Computer Science, May 1999.

Thesis title: Lexicalized, Edge-based, Best-first Chart Parsing

#### **Massachusetts Institute of Technology**

Cambridge, MA

S.B. in Computer Science and Engineering, June 1991.

Thesis title: Deriving a Bayesian Probability Network from Data.

### Employment

#### **BBN Technologies**

Cambridge, MA

Staff Scientist

June 1995 to August 1999

- Designed and implemented **information extraction** (IE) servers for use in an intelligence analysis environment.
- Designed and implemented server side of **client-server** protocol between IE servers and clients (e.g. an Oracle database).
- Trained users in NLU Shell, a system for building IE applications. Training culminated in creation of a working IE system.
- Represented research team as interface to system administration staff. Prioritized tasks, investigated group computing needs and purchased computing equipment.
- Supervised data annotation effort.
- Managed effort adapting IE system to new law enforcement domain.

#### **BBN Technologies**

Cambridge, MA

Associate Scientist

June 1991 to May 1995

- Researched and developed a statistical text relevance classification preprocessor for the PLUM (Probabilistic Language Understanding Models) **information extraction** (IE) system.
- Designed and implemented the first **entity recognition** component of the PLUM system, which labels person and corporation names in text.
- Participated in several Message Understanding Conference (MUC) evaluations of the PLUM system. Contributed at virtually all levels of processing (text zoning, part-of-speech tagging, entity and relationship recognition, parser, lexicon, discourse, template output).
- Created, with two other researchers, a functional prototype IE system for a law enforcement domain.
- Implemented subsystem for semiautomated merging of extracted data with contents of a database.
- Designed and implemented server side of **client-server** protocol for communication between IE server and GUI for browsing and modifying extracted data.

- Co-designed NLU Shell, a system of editors to allow domain experts to build simple IE systems.
- Designed and implemented subsystem of NLU Shell which compiles user-created factbases into an IE system.
- Incorporated statistical part-of-speech tagger into PLUM system.
- Ported statistical part-of-speech tagger to several different languages (e.g. Spanish).

**Brown University** Providence, RI  
 Research Assistant January 1997 to June 1997

- Performed research into variations of the probability model of a statistical parser.

**General Electric – R&D Center** Schenectady, NY  
 Summer Intern Summer 1988

- Designed and implemented a **text classification** system using keyword and pattern matching.

**Massachusetts Institute of Technology** Cambridge, MA  
 Undergraduate Research Opportunities Program January 1988 to May 1988

- Designed and implemented a **generative process planning** system using **manufacturing logic** to determine feasible machining sequences.
- Utilized **dynamic programming** strategies to control the complexity of the search space.

**Citibank** New York, NY  
 Summer Intern Summer 1987

- Assisted in the **knowledge engineering** phase of the development of an **expert system** for credit administration.
- Developed a **machine learning** program to recognize similarities between document paragraphs and to generate document outlines.

### Languages

C/C++, Java, Perl, Common LISP, Scheme, Prolog, Pascal, CLU

### Operating Systems

Unix (Linux, IRIX, Solaris, SunOS), Windows NT

### Foreign Languages

Reading proficiency in French and Czech

### Activities and Honors

- Visiting researcher, Charles University, January 2003
- IGERT Fellowship, Brown University
- Eta Kappa Nu Electrical and Computer Engineering Honor Society
- Sigma Xi Scientific Research Society
- Reviewer for ACL 2004 Student Workshop
- Treasurer and Member of Board of Directors of the Theta Lambda Chapter House Corporation of Sigma Kappa Sorority

### Professional Affiliations

- Association for Computational Linguistics (ACL)
- Association for Machine Translation in the Americas (AMTA)
- Association for Computing Machinery (ACM)