

Anna Noonan Rafferty

PERSONAL

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EDUCATION

University of California, Berkeley, Berkeley, CA **August 2008 - present**

Ph.D. student in Computer Science

- Advised by Professors Dan Klein and Tom Griffiths.
- GPA: 3.95/4.0

Stanford University, Stanford, CA **September 2003 - June 2007**

Masters of Science, Symbolic Systems (Awarded 06/2007)

- Advised by Professor Dan Schwartz
- Thesis: *Using FACT to Challenge Assumptions: Frequency, Accuracy, Choice, and Timing in Machine Learning.*
- Coursework includes: Artificial intelligence techniques, Probabilistic models, Logic, Mathematics, Computer Programming, Natural language processing, Machine learning, Data mining, Cognitive psychology, Linguistics, Philosophy, and Developmental psychology

Bachelors of Science, Symbolic Systems, with Distinction (Awarded 06/2007)

- Concentration: Artificial intelligence

Bachelors of Arts, Feminist Studies, with Distinction (Awarded 06/2007)

- Advised by Professor Estelle Freedman

Undergraduate GPA: 3.9/4.0; Masters GPA: 4.0/4.0

RESEARCH EXPERIENCE

Graduate Student, Berkeley, CA **August 2008-present**

Current research focus is primarily on Bayesian models of pedagogy; creating models predicting and improving student learning in computerized tutoring systems; and experimental and theoretical work on language evolution and iterated learning.

Advised by Professors Dan Klein and Tom Griffiths

Research Programmer, NLP Lab, Stanford, CA **July 2007 - August 2008**

Conduct research in textual entailment and automatic contradiction detection using probabilistic natural language processing and machine learning techniques. Work as part of a research team and lead meetings concerning improvement of shared code to further research. Create graphical interfaces for research code, and issue releases of software distributions for use by the public.

Advised by Professor Chris Manning.

Research Assistant, AAA Lab, Stanford, CA **June 2006 - June 2007**

Investigated data-mining techniques to understand and improve performance of computer-based tutors for teaching geometry. Used machine learning and other tools to automatically determine what students learn in computer tutors and how to create cognitive models of their progress. Designed and ran an experiment using a new computer learning environment. Assisted with conducting research in elementary classroom settings.

Advised by Professor Dan Schwartz.

Research Assistant, NLP Lab, Stanford, CA **June 2005 - March 2006**

Member of research team designing and implementing a system for textual inference using natural language processing techniques. Investigated the use of existing semantic resources to parse verb arguments in order to create more robust models of semantic meaning from sentences.
Advised by Professor Chris Manning.

PUBLICATIONS

Rafferty, Anna N., Tom L. Griffiths, and Dan Klein. "Convergence Bounds for Language Evolution by Iterated Learning." *Proceedings of CogSci 2009*.

Ramage, Daniel, Anna N. Rafferty, and Christopher D. Manning. "Random Walks for Text Semantic Similarity." *ACL-IJCNLP TextGraphs-4 Workshop 2009*.

Pado, Sebastian, Marie-Catherine de Marneffe, Bill MacCartney, Anna N. Rafferty, Eric Yeh and Christopher D. Manning. "Deciding entailment and contradiction with stochastic and edit distance-based alignment." *Text Analysis Conference 2008 (RTE Track)*.

Rafferty, Anna N. and Christopher D. Manning. "Parsing Three German Treebanks: Lexicalized and Unlexicalized Baselines." *Proceedings of Workshop on Parsing German, ACL-HLT 2008*.

de Marneffe, Marie-Catherine, Anna N. Rafferty, and Christopher D. Manning. "Finding Contradictions in Text." *Proceedings of ACL-HLT 2008*.

Rafferty, Anna N. and Michael Yudelson. "Applying Learning Factors Analysis to Build Stereotypic Student Models." *Proceedings of Artificial Intelligence in Education*. 2007.

de Marneffe, Marie-Catherine, Bill MacCartney, Trond Grenager, Daniel Cer, Anna Rafferty and Christopher D. Manning. "Learning to distinguish valid textual entailments." *Proceedings of The Second PASCAL Challenges Workshop*. 2006.

TEACHING EXPERIENCE

University of California, Berkeley

Graduate Student Instructor (GSI)

August 2008 - December 2008

Taught a recitation section for students in the undergraduate artificial intelligence course. Provided one-on-one assistance in office hours, and prepared homeworks and projects for the course.

ACADEMIC AWARDS

- Departmental Outstanding GSI Award for teaching performance. One GSI from each of EE and CS is chosen for this annual award. (2009)
- University-wide Outstanding GSI Award for teaching performance. Given to fewer than 10% of all GSIs university-wide. (2009)
- NSF Graduate Fellowship recipient: 3 years of graduate funding for stipend and tuition. (2008)
- Winner of Best Paper Award for the Young Researcher Track, Artificial Intelligence in Education 2007
- Graduated with Distinction from Stanford University. Awarded to the top 15% of the undergraduate graduating class. (2007)
- Phi Beta Kappa, Stanford University. (2007)
- Member of Cap and Gown, Stanford Womens Honors Society. (2007)
- Alworth Scholarship recipient: scholarship for students from northern Minnesota pursuing math or science degrees; up to 8 years, \$4300 per year. (2003)
- Robert C. Byrd Honors Scholarship recipient: scholarship awarded based on academic achievement; up to 4 years, \$1500 per year. (2003)
- Siemens Award for Advanced Placement winner: award and scholarship given to 24 students nationally based on advanced placement scores in mathematics and science; \$3000. (2003).
- Research Science Institute Alumnae, sponsored by the Center for Excellence in Education. (2002)

RELEVANT
LEADERSHIP AND
VOLUNTEER
EXPERIENCE

- Volunteer with Girls Inc. developing and teaching girls ages 6-14 science material (4-5 hr/wk, June 2009-present)
- Women in Computer Science and Electrical Engineering Outreach Coordinator (August 2009-present)
- Volunteer for periodic one day events encouraging young women's interest in science and mathematics ("Expanding Your Horizons" and "Girls Go Tech"). (August 2008-present)
- Peer Health Educator, Vaden Health Center (September 2005-June 2006)
- Palo Alto Medical Foundation College Intern (June 2005-October 2005)
- Foundations for Education Instructor (June 2004-August 2004)
- HIV Peer Counselor Vaden Health Center (February 2004-June 2007; co-coordinator March 2005-March 2007)