

Amanda M. Holland-Minkley

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Education:

Ph.D., Computer Science, 2004 (projected). Cornell University, Ithaca, NY
Thesis: *Restructuring Formal Mathematics for Natural Texts*
Cognitive Studies graduate minor

M.S., Computer Science, 1999. Cornell University, Ithaca, NY

B.A., Summa Cum Laude, Mathematics and Computer Science, 1995. Amherst College, Amherst, MA
Honors Thesis: *Teaching a Computer to Reason: Considerations in the Development of an Automated Theorem Prover*

Teaching Experience:

Cornell University, Ithaca, NY

Instructor, Computation, Information and Intelligence, Fall 2003, Summer 2003.

Performed all teaching duties for 3-credit introductory computer science course presenting rigorous artificial intelligence content to freshmen engineering students. Coordinated course staff for effective support of students.

Teaching Assistant, Java Practicum, Spring 2003.

Composed and administered semester-long programming practicum for intermediate computer science students, including assignment write-up, sample- and solution-code creation, grading, and student support.

Teaching Assistant, Computation, Information and Intelligence, Fall 2001, 2002.

Met extensively with students to support course content. Advised on assignment creation and performed grading duties and other administrative tasks.

Instructor, Unix Tools, Spring 2001.

Performed all teaching and administrative duties for four-week, 1-credit course on the UNIX operating system, including lecture and assignment preparation.

Academic Excellence Workshop coordinator and *Section Instructor*, Introduction to Computer Science, Spring 2000.

Developed biweekly cooperative-learning workshops and coordinated materials with student facilitators. Wrote and presented weekly lectures for three sections of the introductory programming class.

Exam Coordinator, Computer Science freshman placement exam, Summer 1998.

Led three-member team to update and grade yearly freshman programming placement exam, including making student placement recommendations.

Teaching Assistant, Data Structures. Summers 1996, 1997.

Designed and administered programming/lab component of course. Graded assignments and held regular office hours.

Research Experience:

Research Assistant, Professor Robert Constable, 1996–2004. Cornell University, Ithaca, NY.

Explored automatically generating natural language texts from formal mathematics proofs produced by an automated theorem prover, using transformations of the structure of high-level formal proofs into natural English-language proof texts. Drew upon the fields of natural language generation, knowledge representation, automated reasoning, and formal mathematics. Performed multiple studies of human users of formal and textual

mathematics to evaluate preferences and regularities. Designed and implemented an effective system for automatically generating proof texts for the Nuprl theorem proving system.

Technical Consultant, Summer 2001. Cytacle, Ithaca, NY.

Advised start-up on suitable natural language technologies for proposed products.

Programmer, Biomedical Research Group, Summers 1992–1995. Pittsburgh Supercomputing Center, Pittsburgh, PA.

Designed and implemented algorithms for identifying proposed protein structure regularities in conjunction with research chemists. Created animated educational videos illustrating various protein secondary structures.

Awards:

NSF Cognitive Studies Trainee Fellowship, 1998–1999.

NSF-CEE Graduate Fellowship, 1995–1998.

Publications:

“Planning Proof Content for Induction.” A. Holland-Minkley, *International Natural Language Generation Conference (INLG '02)*

“Verbalization of High-Level Formal Proofs.” A. Holland-Minkley, R. Barzilay and R. Constable, *Sixteenth National Conference on Artificial Intelligence (AAAI '99)*

“A Case for Building Inclusive Research Communities as an Integral Part of Science and Engineering Graduate Education.” S. Hobbs, A. Holland-Minkley, L. Millett, *1999 International Symposium on Technology and Society (IEEE)*

Presentations:

Planning Proof Content for Induction, International Natural Language Generation Conference, July 2002.

Structure in Computing and Language, Dedication of the Charles F. & Barbara D. Weiss Directorship of the Information Science Program in Computing and Information Science, Cornell University, October 2001.

Verbalization of High-Level Formal Proofs, Sixteenth National Conference on Artificial Intelligence, July 1999.

A Case for Building Inclusive Research Communities as an Integral Part of Science and Engineering Graduate Education, IEEE International Symposium on Technology and Society, July 1999.

Generating Text from High-Level Formal Proofs, Second Annual Graduate Conference of the Northeastern Cognitive Science Society (NECCS), University of Pennsylvania, April 1999.

Using a Reasoning System in Planning Natural Language Texts of Formal Proofs, Cognitive Studies Graduate Research Forum, Cornell University, October 1998.

Professional Activities:

President (2000), Diversity Committee Chair (2001), Web Master (1999-2000), Engineering Graduate Student Association, sponsoring events and professional development activities to promote a cross-departmental research and social community for engineering graduate students.

Czarship Coordinator, Cornell Computer Science Dept. (1997-2002) organizing student volunteers to provide departmental services.

Co-Founder and Financial Officer (2002), Cornell At What Cost?, a student-run informational group regarding the pros and cons of graduate student unionization.

Member (2001-present), ACM; member (1995-present), Sigma Xi.