

Christine F. Reilly

Web Version – See my web page for contact information.
<http://pages.cs.wisc.edu/~chriss>

Research Interests

My main research interest is scientific data management. The focus of my dissertation is data provenance, specifically methods for transparently collecting provenance during the execution of a program. When provenance is collected transparently, the user doesn't need to alter her application or how she interacts with the system, the system management activities do not need to change, and the changes made to the computing system are superficial. This allows all applications that run in the computing system to have the benefit of provenance collection.

In the long term, my interests generally revolve around discovering methods to easily store and query data and metadata. I am interested in observing how scientists interact with data in order to improve how they use and manage their data.. Another interest is instrumenting existing applications to transparently gather provenance and other metadata.

Education

- 2010 Ph.D. Computer Sciences (expected May), University of Wisconsin-Madison.
Minor: Science and Technology Studies
- 2005 M.S. Computer Sciences, University of Wisconsin-Madison.
- 2002 M.S. Environmental and Resource Engineering, State University of New York College of Environmental Science and Forestry.
- 1999 B.S. Environmental Engineering Science, Massachusetts Institute of Technology.

Research Experience

Research Assistant

June 2003 – present

University of Wisconsin-Madison

Developed noninvasive methods for gathering provenance from programs that store data in files. Modified the Condor distributed job execution system to gather information about files used by a job. Currently developing methods for gathering fine granularity provenance from programs written in a declarative programming language. Member of the team that developed Quill, a tool that transparently gathers operational data from Condor.

Research Assistant

June 2000 – May 2002

SUNY Environmental Science and Forestry

Researched statistical methods for estimating low streamflow. Used a simulation to compare methods for estimating low streamflow statistics at measurement stations that have partial streamflow records. Compared the accuracy of different statistical techniques for estimating low streamflow quantiles when the streamflow record is incomplete.

Undergraduate Research Opportunities Program

February 1998 – June 1999

Massachusetts Institute of Technology

Built educational web site and wrote fact sheets about non-native marine species. Assisted with planning First National Conference on Marine Bioinvasions. Awarded two semesters of funding from MIT-UROP.

Industry Experience

Intern

Summer 2006

Google, Inc., *Mountain View, California*

Developed tools to query and manage data from the software bug tracking system. Discovered that queries on the existing database were difficult to write and slow to run. Designed a data warehouse to store bug data in a format that is more efficient to query.

Probabilistic Risk Assessment Center Intern

Summer 2002

SRC, *North Syracuse, New York*

Built a Windows user interface for the USEPA's Pesticide Root Zone Model. Wrote Excel macros.

Environmental Specialist

July 1999 – April 2000

Beals and Thomas, Inc., *Southborough, Massachusetts*

Analyzed environmental regulations in relation to proposed land developments and existing buildings. Prepared applications for various environmental and zoning permits.

Teaching Experience

Lecturer, Introduction to Programming

Summer 2009

University of Wisconsin-Madison

Taught object-oriented programming in Java. Developed course schedule, wrote assignments and exams, prepared and presented lectures, determined grades, supervised a teaching assistant.

Teaching Assistant, Introduction to Programming

September 2002 – May 2003

University of Wisconsin-Madison

Lead discussion sections to practice material learned in lecture. Interacted with individual students in the computer lab and during office hours. Graded assignments and exams.

Tutor

various times

Volunteered for two semesters at the UW-Madison Greater University Tutoring Service. Experienced with teaching basic computer skills.

Peer-Reviewed Publications

Reilly, Christine F. and Jeffrey F. Naughton. Transparently gathering provenance with Provenance Aware Condor. Workshop on the Theory and Practice of Provenance, San Francisco, California, February 2009.

Reilly, Christine F. and Jeffrey F. Naughton. Exploring provenance in a distributed execution system. International Provenance and Annotation Workshop, Chicago, Illinois, May 2006.

Reilly, C.F., and C.N. Kroll. Estimation of low streamflow statistics using baseflow correlation. *Water Resources Research*, 39(9), September 2003.

Technical Skills

Programming and scripting languages: Java, C++, Perl, Python, HTML, CSS, SQL, XML

Operating Systems: Linux, Mac OS X, Windows XP