

# Christopher A. Bogart

## Contact Information

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## Research Interests

- HCI of Programming: How can programming languages and environments aid both end-user programmers and professional programmers in designing, refining, and debugging their instructions to a computer?
- Domain-specific language design for end-user programmers
- Natural Interaction for Debugging: How do people naturally describe anomalous behaviors of software, of agents, or of cognitive models? How do they iteratively refine that description in conversation with another person? Can we design more natural debugging tools around these interaction patterns?

## Education

Currently pursuing a PhD in Computer Science  
Oregon State University

Master's degree in Computer Science, May 1992  
Colorado State University, Grade Point Average (GPA) 4.0

Bachelor's degree in Computer Science, May 1988  
Colorado State University, GPA 4.0, Honors  
Minors in Mathematics and Psychology

## Technical Skills/Experience

- Computer Languages/Libraries: C, C++, Perl, UNIX shells, Java, JavaScript, Lisp, Haskell, Python, Visual Basic, ASP, OpenGL, SQL
- Human Languages: English, Spanish
- Human participant experiments for software testing
- Classroom teaching, lesson planning and some course design experience

## Professional And Academic Projects

***HCI of Programming Research*** Teaching and research as a graduate student in Human-Computer Interaction as applied to programming languages and

software engineering tools. (Oregon State University, Department of EECS, Corvallis OR. September 2007 – Present)

**User Experience Studies** Design, implementation, analysis and communication of the results of two user studies involving programmer experiences while debugging programs written in functional languages. (Intern for Microsoft, Seattle, WA. Summer, 2008).

**Database Query Adaptor** Implementation and maintenance of a query server, which mapped a preexisting specialized database query tool written in Microsoft Access (for querying a database of real estate documents in the Denver Metro area) to a preexisting set of fifteen separate databases on an IBM AS/400 which are part of a commercial title plant database system. The system uses an engine written in Visual Basic to queue up requests, convert them to the more complex queries needed for the newer database, and format and organize the results as they are finished running on the AS/400. (Consultant for SKLD, 720 S. Colorado, Suite 1000N, Denver CO. June 2003 - May 2007)

**Phone Security Query Tool** Intranet web-based software to do regularly scheduled queries of customers' office telephone servers, analyze the security of their systems' configuration, and maintain a searchable database of the results of these tests. The software was written in Perl on a UNIX system. (Consultant for Avaya, Thornton, CO, March 2001 - August 2002)

**Assistant Project Analyst** Provided technical and conceptual assistance to a project manager hired to analyze a large and severely delayed software project, in terms of both the status of project management, and the structure and progress of the product itself. After the analysis, I planned, installed, operated, and trained developers to use a new configuration management system using Visual SourceSafe, did installation, administration and training for defect tracking software, created custom tools in Visual Basic for carrying out a biweekly build, and developed some modules in Visual Basic as part of the product itself. (Consultant for Summit Technology, 3300 South Parker Road, Aurora, CO. April - October 2000)

**Digital Document Repository** Management of a software system for reception, indexing, and storage of scanned images of real estate documents at a title company data center. Responsibilities included supervision of three part-time personnel; liaison with fourteen county clerks supplying data; porting of code from a non-Y2K compliant Data General UNIX system to Red Hat Linux; design, creation, and support for several Visual Basic image viewer programs; UNIX system configuration and administration; Perl, UNIX shell, and C programming; design and production of a plat image distribution consisting of 100+ CDs of images, a viewer, and a database. (Consultant for SKLD, 720 S. Colorado, Suite 1000N, Denver CO. August 1999 - February 2000; created a web interface for this system in 2006/2007)

**Computer Training:** Designed and implemented a computer training course for English- and Spanish-speaking beginning computer users, including Windows 95 and internet skills. (Consultant for Kara Stevens, Boulder Family Independence Initiative; February 1999 - June 1999)

**Graphical User Interface:** Design and implementation of various parts of a Windows 3.1 graphical user interface, for a program which simulates and determines air conditioning needs for large buildings. C++, Visual Basic, Fortran, SQL, and Crystal Reports were used. (Consultant for SEI, Associates, 2892 Shadow Creek Drive #303, Boulder, CO 80303 USA; August 1993 - September 1994, intermittently for a total of about eight months; then June - December 1998, and ongoing support through present.)

**Complaint Processing System:** Design, implementation, documentation, user training and support, of a system to accept citizen complaints at 16 offices around the city of Buenos Aires and send work orders to appropriate repair crews. Written in Visual Basic, with most functionality in ActiveX components for future migration to a web-based intranet. The database backend used Microsoft Access. Other duties included general user support and troubleshooting for city employees using Windows '95 and Office '97, and creation of various database-searching tools for a web-based intranet using ASP. (Consultant for Pablo Corvalán, Buenos Aires, Argentina. September 1997 - June 1998)

**Internet Data Publishing:** Design and implementation of a World Wide Web data browser for the GPS/MET program's satellite atmospheric dataset. Work included HTML, CGI, and Perl programming, discussing requirements with data users, design and population of a large metadata database, and building complex SQL queries from WWW form input. (Consultant for University Center for Atmospheric Research (UCAR), GPS/MET Program, 3300 Mitchell Lane, Suite 245, Boulder, CO 80307-3000 USA; April 1996 - August 1997)

**Internet Credit Card Processing:** Design, implementation, and documentation of a system to sell software over the Internet. This included a Windows 3.1 C++ application to charge credit cards and CGI script software written in C++ running under UNIX to take orders over the Internet and allow download of purchased software. Communication between the two parts used sockets on UNIX and WinSock in Windows. (Consultant for Bryan Griffin, 3300 Bridger Trail, Boulder, CO 80303 USA; November 1994 - April 1995)

**Multi-platform IPC toolkit:** Cross-platform Interprocess Communication (IPC) library in C for Macintosh, MS-Windows, X-Windows (Motif and Open Look) and OS/2-Presentation Manager; implemented using XVT. Other work for Dovetail included designing makefiles, debugging, and technical support by telephone; wrote manual pages for the IPC library. (Consultant for Dovetail Software, 3076 6th Street, Boulder, CO 80304 USA; June 1993 - February 1994, intermittently for a total of about seven months)

***Electric Utility Planning Software:*** development and documentation of a C-language computer model for planning expansion and pollution control projects at electric utilities (STARRSS). Also several smaller projects involving energy, pollution, and finance in the electric utility industry. (Research Associate at RCG/Hagler, Bailly, Inc., 1881 9th Street, Boulder, CO 80302 USA; December 1991 - May 1993)

***Artificial Intelligence research:*** as a Graduate Research Assistant; two years of research resulting in two published papers, and C code implementing various neural network and genetic algorithm models. (Colorado State University; August 1988 - July 1990)

***Teaching English:*** Team-teaching with Japanese teachers of English. (Assistant English Teacher at Sayama High School of Economics, Sayama City, Japan; August 1990 - July 1991)

## **Invited Talks**

“How to People Debug F#?”, Microsoft, Seattle, WA, December 15, 2008

## **Publications**

M. Burnett, C. Bogart, J. Cao, V. Grigoreanu, T. Kulesza, and J. Lawrance, “End-User Software Engineering and Distributed Cognition,” Proceedings of ICSE Workshop on Software Engineering for End-User Programmers, Vancouver, BC: 2009.

N. Subrahmaniyan, M. Burnett, and C. Bogart, “Software visualization for end-user programmers: trial period obstacles,” Proceedings of the 4th ACM symposium on Software visualization, ACM New York, NY, USA, 2008, pp. 135-144.

C. Scaffidi, C. Bogart, M. Burnett, A. Cypher, B. Myers, and M. Shaw, “Characterizing reusability of end-user web macro scripts,” Proceedings of the 2008 international workshop on Recommendation systems for software engineering, ACM New York, NY, USA, 2008.

V. Grigoreanu, J. Cao, T. Kulesza, C. Bogart, K. Rector, M. Burnett, and S. Wiedenbeck, “Can feature design reduce the gender gap in end-user software development environments,” Proc. VL/HCC 2008, IEEE, 2008.

C. Bogart, M. Burnett, A. Cypher, and C. Scaffidi, “End-user programming in the wild: A field study of CoScripter scripts,” IEEE Symposium on Visual Languages and Human-Centric Computing, 2008. VL/HCC 2008, 2008, pp. 39-46.

C. Bogart, "Rhetorical end-user programming," IEEE Symposium on Visual Languages and Human-Centric Computing, 2008. VL/HCC 2008, 2008, pp. 260-261.

D. Whitley, T. Starkweather, and C. Bogart, "Genetic Algorithms and Neural Networks: Optimizing Connections and Connectivity," Parallel Computing, vol. 14, 1990, pp. 347-361.