John S. Bucy

bucy@gloop.org

1141 N. Highland Ave. #26
Pittsburgh, PA 15206
412-606-6294

Education

Carnegie Mellon University, Pittsburgh PA

M.S. in Electrical and Computer Engineering — May 2005

B.S. in Mathematics and Computer Science — May 2001

Experience

Carnegie Mellon University

Systems Programmer, Parallel Data Lab (http://www.pdl.cmu.edu) — June 2001 - present

- Overhauled DiskSim, the most accurate publicly available disk drive simulator. Engineered the release of DiskSim 3.0, the first public release in several years.
- Factored several of DiskSim's modules into a freestanding library, diskmodel. Collaborated with lab members to establish diskmodel's API to enable integration with other applications.
- Refined Dixtrac, a suite of disk characterization tools. Solved several outstanding problems including designing a general, time/space-efficient layout model and developing more accurate methods for measuring several disk performance properties.
- Redesigned PDL's block-based storage intrusion detection system. Reimplemented inefficient datastructures to improve performance and robustness. Improved internal abstractions to simplify implementation.
- Developed a flexible configuration file library shared across the entire disk tools chain including DiskSim. Used Lex and Yacc to parse complicated inputs spanning multiple files. Used Perl to generate stub code glue between the parser and client applications.
- Adapted FreeBSD's SCSI Target-mode driver into the first version of PDL's storage emulator.
- Implemented major changes in existing codebases developed in a research environment.
- Administered a Bugzilla deployment to help lab members keep track of software development efforts and lab infrastructure.

Undergraduate Research — May 1999 - August 2000

- Investigated novel Instant Messaging technology
- Developed a simple implementation of OpenPGP from scratch
- Designed a reliable, message-oriented transport protocol
- Implemented software utilizing a lot of low-level programming: asynchrony, threads, cross-platform (Solaris and Linux)
- Supported by Carnegie Mellon's Undergraduate Research Initiative and USENIX

Publications

- A Framework for Building Unobtrusive Disk Maintenance Applications. Eno Thereska, Jiri Schindler, John Bucy, Brandon Salmon, Christopher R. Lumb, Gregory R. Ganger. USENIX Conference on File and Storage Technologies, 2004.
- On the Feasibility of Intrusion Detection inside Workstation Disks. John Linwood Griffin, Adam Pennington, John S. Bucy, Deepa Choundappan, Nithya Muralidharan, Gregory R. Ganger. CMU-PDL-03-106, December 2003.
- Design and Implementation of a Freeblock Subsystem. Eno Thereska, Jiri Schindler, Christopher R. Lumb, John Bucy, Brandon Salmon, Gregory R. Ganger. CMU-PDL-03-107, December 2003.
- The DiskSim Simulation Environment, Version 3.0 Reference Manual. John S. Bucy, Gregory R. Ganger. CMU-CS-03-102, January 2003.
- Timing-accurate Storage Emulation. John Linwood Griffin, Jiri Schindler, Steven W. Schlosser, John S. Bucy, Gregory R. Ganger. USENIX Conference on File and Storage Technologies, 2002.

Achievements and Awards

Best Student Paper FAST04 (A Framework for Building Unobtrusive Disk Maintenance Applications) — January 2004

Student Research Grant, USENIX — Fall 1999

Research Fellowship, Carnegie Mellon Undergraduate Research Initiative — Summer 1999

Skills

Programming Languages	C/C++, Perl, Python, SML, lex, yacc
Unix Tools	gcc, make, autoconf, gdb, cvs, emacs, LaTeX
System-level Programming	POSIX
Unix System-Administration	Apache, Qmail, OpenAFS, Kerberos, NNTP, OpenSSH, dns

Activities

Interests	Classical piano, classical and electronic music, mountain biking, swimming, anime	
Leadership	Carnegie Mellon Computer Club, President	1999-2001
	Carnegie Mellon, WRCT FM, Talk Show Host	1999-present