

Andrew Gaul

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Summary

Systems programmer interested in early-stage startups and technical leadership opportunities. Background includes work in file systems, compression, cloud technologies, and free software.

Experience

Maginatics Senior Engineer 2011 - present

Pre-venture funding employee at a stealth startup.

Riverbed Technology Member of Technical Staff 2006 - 2011

File system engineer for Granite 1.0, an iSCSI block cache with asynchronous write-back to primary storage. Contributed to core indexing structures, transactional persistence and recovery of data, and overall system performance. Took a proactive role in establishing internal dogfood setup, initial customer installs, and evangelizing failure-injection testing.

File system engineer for Whitewater 1.0, a deduplicating storage appliance. Implemented algorithms for large-window data compression and designed data structures for efficient indexing and storage of compressed data. Made fundamental contributions to segmentation and garbage collection algorithms, improving performance and space efficiency, particularly in the presence of snapshots. Provided key performance enhancements, realizing 2-10x speedups on various workloads via algorithmic improvements, assembly-level optimizations, and implementation tuning. Implemented file system check and fuzz tester which found dozens of bugs and memory leaks.

Device framework engineer for Steelhead 3.0-5.0, a network optimization appliance. Technical lead for implementing Python language bindings and modernizing command-line interface, supervising one junior engineer and one intern. Redesigned Berkeley DB-based statistics subsystem, realizing a 100x performance improvement, substantial space savings, and simplified garbage collection. Integrated SSL acceleration, the Proxy File Service, transparent CIFS cache warming, and encrypted storage with various system services. Maintained and extended RHEL 4-based distribution across multiple products.

Tabernus Software Engineer 2004 - 2006

Lead engineer for the Tabernus E800, disk refurbishing hardware capable of requalifying dozens of hard drives simultaneously. Features include hot-swapping, configurable tests including S.M.A.R.T., and network expandability. Designed and implemented Disk Purge, a bootable Linux CD for securely erasing storage devices. Added tape functionality, including SCSI commands and performance tests, to NorthstarADT, a Windows-based tool for designing and testing storage devices.

Education

University of Texas at Austin BS Computer Sciences 1997 - 2002

Studies included internships at HRL Laboratories, Trilogy, and United Devices and undergraduate research with the Real-Time Systems Group, supervised by Dr. Aloysius Mok.

Skills

- experience with C, C++, Haskell, Java, Python, shell scripting, SQL, and x86 assembly
- knowledge of Berkeley sockets, GTK+, HTML and CSS, kernel programming, Pthreads, STL, and XML
- familiar with Linux (including Fedora, Red Hat Enterprise Linux, and Ubuntu) and Windows
- comfortable with Linux development tools: GCC, GDB, Git, make, OProfile, Subversion, Valgrind, etc.

Miscellaneous

- received an honorable mention at the 2001 ACM International Collegiate Programming Contest
- placed 2nd at the 2000 ACM South Central USA Regional Programming Contest
- free software involvement: dialog, dispad, Firefox, jclouds, K-9 Mail, OpenSSH, Pidgin, Python, and Webware