Andrew J. Klosterman

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OBJECTIVE:
Engage in design and implementation of advanced computer storage systems in massively scalable, manageable, secure and distributed environments while simultaneously addressing client concerns, management requirements and administrative processes.

EDUCATION:
Carnegie Mellon University
5000 Forbes Ave., Pittsburgh, PA 15213
Doctor of Philosophy in Electrical and Computer Engineering, Fall 2008 (anticipated)
Ph.D. Thesis: *Delayed Instantiation Bulk Operations in a Clustered, Object-based Storage System*
Advisor: Dr. Greg Ganger (ganger@ece.cmu.edu)

- Research assistant investigating network processors, cooperative and distributed caching on distributed file system clients, NFS file server load-shedding and load-sharing, Andrew File System packet-level tracing, object-based distributed storage systems
- Design and implementation of Ursa Minor, a self-* storage system that strives to be a self-managing, self-tuning, self-healing, self-configuring, distributed, scalable and secure object-base storage system
- Computer data center design (one renovation and one bare-walls) with thermal, electrical, and mechanical design considerations, involving site-visits to equipment vendors
- Additional involvement with starting a weekly "entrepreneurship reading group" and summer supervision of undergraduate workers doing research and database entry
Master of Science in Electrical and Computer Engineering, May 2000
Master's Thesis: *Secure Continuous Biometric-Enhanced Authentication*
Advisor: Dr. Greg Ganger (ganger@ece.cmu.edu)

- Constructed and evaluated a computer access-control system based on continuous evaluation of biometric data (face-detection and face-recognition) acquired by a camera
- Contributed to building and evaluating an NFS metadata and data cache into a 3Com CoreBuilder network switch through modification of the management-plane system software for the embedded processor with Dr. Ganger and Dr. Dave Nagle (dfnagle@gmail.com)
- Graduate Teaching Assistant for graduate networking classes taught by Dr. Hyong Kim (kim@ece.cmu.edu)
    - 18-756: Packed Switching and Computer Networks
    - 18-757: Principles of Broadband Integrated Services Digital Networks

The University of Dayton
300 College Park Ave., Dayton, OH 45469
Bachelor of Science in Electrical Engineering, December 1997

- Concentration in Computer Engineering, Minor in Mathematics, Cum Laude
- Networking of department laboratory and installation of Linux SAMBA server
- Installation and configuration of ELE Department Networking Laboratory
- Undergraduate Thesis Project: Design and Implementation of TCP/IP Class C Network

WORK EXPERIENCE:
3Com Corp.
    5400 Bayfront Plaza, Santa Clara, CA 95052 (employment location)
    350 Campus Drive, Marlborough, MA 01752-3064 (current headquarters)
    Pervasive Networking Lab Intern
    May through August 1999
- Intern under Dr. Dave Lee (dave.lee@intransa.com)
- Worked on porting Linux to an embedded PowerPC system card running in a network router
- This work became a foundation for early Intransa, Inc. products

Multimedia Engineering Corp.
    Telecommuted from home in Dayton, OH
    Quality Control Engineer
    April through August 1998
- General programming support and feature validation for chess.net 2.0
- Statistical (Markov model) analysis of traffic through company web site (www.chess.net)

Holy Angels School
    223 L St., Dayton, OH 45409
    Volunteer Computer and Network Administrator
    February through April 1998
- Elementary school Windows computer/network administrator for classrooms and lab
- This volunteer work concluded a multi-year effort that I started in September 1995 to install a school-wide network, populate classrooms and the computing lab with computers through donations and new purchases, and connect all computers to the Internet

Macaulay-Brown, Inc.
    4021 Executive Drive, Dayton, OH 45430
    Technology Specialist I
    August 1996 through October 1997
- Part of undergraduate engineering curriculum co-op work experience
- Government security clearance
- Analysis of atmospheric modeling software, MATLAB 3D modeling and GUI generation

University of Dayton
    300 College Park Ave., Dayton, OH 45469
    Telecommunications: Computer Hardware and Network Technician
    May 1995 through June 1996
- Part of undergraduate engineering curriculum co-op work experience
- Scheduling and installation of network interface cards, transceivers, and software on Apple Macintosh and IBM compatible computers
    Microcomputer Services: Computer Hardware and Software Technician
    December 1993 through May 1995
- Receiving, scheduling, delivery, set-up, maintenance and troubleshooting of computer hardware and software for the University of Dayton academic and administrative offices

OTHER EXPERIENCE:
Children's Hospital of Pittsburgh of UPMC
    3705 Fifth Ave., Pittsburgh, PA 15213
    Volunteer
    April 2006 through present
- Work with Child Life Department staff in the Teen Lounge; 290+ hours donated (June 2008)
- Assist in supervision of teen patients and their families working with crafts, playing games, and providing general support with their overall hospital experience

PUBLICATIONS:

- **Early Experiences on the Journey Towards Self-* Storage**. Michael Abd-El-Malek, William V. Courtright II, Chuck Cranor, Gregory R. Ganger, James Hendricks, Andrew J. Klosterman, Michael Mesnier, Manish Prasad, Brandon Salmon, Raja R. Sambasivan, Shafeeq Sinnamohideen. Bulletin of the IEEE Computer Society Technical Committee on Data Engineering, September 2006.
- **Ursa Minor: Versatile Cluster-based Storage**. Michael Abd-El-Malek, William V. Courtright II, Chuck Cranor, Gregory R. Ganger, James Hendricks, Andrew J. Klosterman, Michael Mesnier, Manish Prasad, Brandon Salmon, Raja R. Sambasivan, Shafeeq Sinnamohideen, John D. Strunk, Eno Thereska, Matthew Wachs, Jay J. Wylie. Proceedings of the 4th USENIX Conference on File and Storage Technology (FAST '05). San Francisco, CA. December 13-16, 2005.
- **Replication Policies for Layered Clustering of NFS Servers**. Raja R. Sambasivan, Andrew J. Klosterman, Gregory R. Ganger. Proceedings of the 13th Annual Meeting of the IEEE International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS'05). Atlanta, GA. September 27-29, 2005.
- **Self-* Storage: Brick-based Storage with Automated Administration**. Gregory R. Ganger, John D. Strunk, Andrew J. Klosterman. Published as Carnegie Mellon University Technical Report, CMU-CS-03-178, August 2003.
- **Cuckoo: Layered Clustering for NFS.** Andrew J. Klosterman, Gregory Ganger. Published as Carnegie Mellon University Technical Report, CMU-CS-02-183, October 2002.
- **Secure Continuous Biometric-Enhanced Authentication**. Andrew J. Klosterman and Gregory R. Ganger. CMU SCS Technical Report CMU-CS-00-134, May 2000.

HONORS:

- Best Paper Award, FAST '05, **Ursa Minor: Versatile Cluster-based Storage**
- HKN, Electrical Engineering Honorary Fraternity
- 1996-1997 Electrical Engineering Student of the Year (1996-97)
- Vice-President of IEEE student chapter (1996-97)
- Dean's Leadership Council (1996-97)
- University of Dayton, University Honors Program

SKILLS:

- Programming: C/C++, Fortran, Pascal, Bash/tcsh shell scripts, GNU utilities, perl, MATLAB, SQL, PostgreSQL pl/pgsql, Embedded SQL in C
- Networking: 10/100/1000 Ethernet, TCP/IP, SunRPC, NFS and AFS protocols
- Hardware: JTAG debugging, PowerPC 501 assembly language, IXP 1200 network processor, personal computer design and assembly
- Construction: Computer data center thermal, mechanical and electrical design
- Other: Amateur radio operator, call sign KC8GDB