

KEN GUYTON

KENGUYTON.ORG

EXPERIENCE

2012-present, Atlanta, GA

Currently employed, Reliability Engineer and Linux System Admin

- Write software tools in Python to support data center operations and engineering.
- Teach classes in Python and other topics.
- Mentor colleagues in programming, software engineering, and other topics.

2007–2012 Google, Inc. Atlanta, GA

Linux System Administrator, System Engineer

- Wrote Python code nearly every day using nearly 100% test-driven development. Taught classes including Linux kernel internals.
- Engaged in various types of data analysis.
- Mentored colleagues for promotion to systems admin positions.

2007 Emory University, Research Computing Atlanta, GA

Lead UNIX System Administrator

- As part of the HPC team, helped select and install a 1024-core (256-machine), Linux-based high-performance computing cluster.
- Served on selection committee, attended vendor meetings and reviewed proposals.
- Assisted with reviewing and selecting data center space.
- Worked on physical installation of systems including network cables and installing the OS on each system.
- Wrote Python code to help manage clusters via serial console ports, and to analyze logs for usage accounting.
- Also helped maintain the older 128-core (64-machine) cluster, and other research computing systems.
- Hardware included Sun X2200, X4200, X4500 Thumper, Foundry BI-RX, Sun 6140 storage.

2005–2007 Emory University, AAIT CTS Atlanta, GA

Lead UNIX System Administrator

- Maintained Email system with up to 26 servers, up to 42,000 accounts.
- Designed and implemented conversion of UW IMAP servers (Solaris) to Cyrus IMAP (RHEL 3).
- Wrote code in Perl, and a little C, to do migrations while servers were on-line and in use. This included moving email files across the network and synchronizing processes on two servers as well as updating LDAP.
- Continued to maintain Wiki documentation.
- Continued to help maintain account management software.
- Conducted a series of training sessions for a new identity management group on the account management software.
- Continued to develop a library of object classes for system software in Perl and to write many tools.

2001–2005 Emory University, ITD Technical Services Atlanta, GA**Lead UNIX System Administrator**

- As part of team, wrote account management software for provisioning accounts, synchronizing passwords to diverse systems, UNIX, LDAP, others.
- Continued to develop a library of object classes for system software in Perl and used to write many tools.
- Upgraded systems to Solaris 8 and Solaris 9
- Began implementing production systems on Red Hat Linux
- Wrote software and process for distributing users across multiple email systems and migration
- Set up a group documentation Wiki
- Automated and documented many system admin functions using Perl and POD.
- Hardware includes Sun Enterprise 220R, 420R, 280, 480, Ultra 10, 240, 440, connected to EMC Symmetrix and CLARiiON, Egenera, HP DL360

1997–2001 Emory University, ITD Internet/Intranet Services Atlanta, GA**Senior UNIX System Administrator**

- As part of a team, administer about 30 Solaris servers providing internet and intranet services to about 23,000 users.
- Rolled out upgrade to campus-wide email architecture to eliminate reliability problems.
- Wrote RFP and RFI for a new campus-wide email system.
- Upgraded all systems to the same Solaris version (2.6).
- Tested and modified systems for Y2K, including custom in-house NIS+/Kerberos password synch software.
- Installed and maintained software to provide campus-wide email, USENET news, DNS, CSO on-line phone book, NIS+, Radius, and Kerberos authentication, and on-line timeshare services.
- Automated and documented many system admin functions using Perl and POD.
- Hardware included Sun Enterprise 4000s, 450s, 250s, 220Rs, 420Rs, 280s, 480s, Ultra 10s, SPARCserver 1000s, SPARCstorage arrays, A3500 StorEdge, other SPARCstation 20s, and many other SPARCstations.
- Provide consulting to other units in ITD. Reviewed RFPs and proposals.
- Taught classes in UNIX and Perl programming.
- Wrote system monitoring scripts and admin tools (e.g., password sync) in Perl.

1993–1997 Emory University, ITD CRS Atlanta, GA**Senior Computing Consultant**

- Provided senior-level technical support to Computing Resource Services, ITD, and other departments at Emory.
- Administered UNIX (Solaris, BSD), Novell 3.x and 4.x, and NT servers.
- Installed and administered the first Novell System Fault Tolerant III server on campus.
- Provided AIX consulting to the Beck Center for Electronic Texts in the Woodruff Library
- Technical Architecture Team; Architecture, Standards and Recommendations Board; Network Planning Working Group; Facilitators Guild; Electronic Infrastructure Committee (Woodruff Library); Software Server Committee; Center for Library and Information Resources at Emory Planning Team.
- Wrote web-based, on-line performance review system in Perl/CGI and UNIX system monitoring tool.

**1993–1996 Georgia State University Atlanta, GA
Graduate Lab Assistant**

- Taught Astronomy 101 and 102 labs for ~13 quarters.

**1987–1993 Emory University, ITD CRS Atlanta, GA
Supervisor Consulting**

- Built and led a team of five professional consultants plus student employees who supported UNIX, VM, VMS, DOS, MacOS, and dozens of third party applications.
- Trained consultants in UNIX, networking and other topics.
- Wrote call tracking software in NeXTSTEP
- Was also in charge of short course training program, software licensing and distribution, ITD computing labs, at various times.

**1985–1987 Emory University, ITD CRS Atlanta, GA
Programmer/Analyst**

- Supported end users on UNIX, VM, VMS, DOS, MacOS.
- Installed and maintained third-party mainframe software (SPSS, SAS, TeX, etc.)
- Implemented TeX on all of the above platforms and set up printing to large Xerox printers in data center using Pascal, REXX.

**1980–1985 Museum of Arts and Sciences Macon, GA
Director of Astronomy**

- Responsible for the development of planetarium and astronomy education programs for the general public and schools.
- Developed and maintained planetarium, observatory and support facilities.
- Led staff of one assistant and up to twelve part-time employees. Responsible for astronomy budget and planning.
- Built low-voltage control system and implemented automation for slide projectors. Wrote software for programming slide sequences in Turbo Pascal.
- Purchased photometer for observatory and established Astronomical Research Group, a team of five astronomers in the area.

SYSTEMS, SOFTWARE AND LANGUAGES

- UNIX (Linux (Ubuntu, Debian, RedHat Enterprise Linux, CentOS), Solaris, BSD, SVR4, AIX, HP/UX, NeXTSTEP), Windows XP and 2000; in years past: all previous versions of Windows and DOS; also MacOS.
- VAX/VMS, VM/CMS, and MVS.
- Python 2 and 3, conversions to 3, object-oriented, pipenv, and virtual environments.
- PEP8, Pycodestyle, Pylint.
- Flask, SQLAlchemy, SQLite, requests.
- Have engaged in purely test-driven development with unit testing, functional tests, and large scale tests.
- VMware, Parallels, VirtualBox, Multipass and QEMU.
- AWS S3 including web server buckets, EC2, and VPC.
- Perl (mainly object-oriented), C, FORTRAN, Ksh, Objective-C, Pascal, Modula-2, BASIC.
- Have written programs in Smalltalk, C++, LISP, APL, SNOBOL, and yes, even structured COBOL.
- Have written a few programs learning Go and Scheme.
- Racket Scheme LISP and Squeak SmallTalk for fun and entertainment.
- GNU Emacs Lisp.
- Grid Engine, IBRIX file system.
- Veritas Volume Manager and File System on Solaris with SPARCstorage arrays, and EMC. Raid Manager with A1000, A3500.
- Sendmail, Procmail, UW IMAP and POP, BIND, NTP, Tcpwrappers, OpenSSH, Apache, Tcpdump, OpenLDAP, Big Brother, MySQL, Exim, Squid, and others.
- Mapreduce, Bigtable, Protocol buffers, Colossus file system, and the Google File System.
- Hadoop, HDFS, Mesos, Pants, Aurora, and Manhattan.
- RCS, SCCS, CVS, Bazaar, Mercurial, Perforce, and Git.
- nroff, troff, TeX, LaTeX, Markdown

EDUCATION

Georgia Institute of Technology Atlanta, GA

- B.S. Physics.
- Focus on optics.
- Computer science core curriculum.

Georgia State University Atlanta, GA

- Completed all course work, qualifying exam, oral qualifier, and most research toward a PhD in astronomy.
- Research on spectroscopy of rapidly rotating Be stars including software written in FORTRAN and Perl.

INTERESTS

- Spectroscopy, cosmology, computational astronomy, operating systems, networking and telecommunications, object-oriented programming, technical architecture, software engineering.
- Amateur astronomy, computing, chess, photography, Italian cooking, science fiction, music, movies.

PUBLICATIONS

- *Communications Reference Guide*, D. Baxley, Editor, K. Guyton, Contributing Editor, Emory University ITD, 1989.
- *Gravity Darkened Balmer Line Profiles*, K. Guyton and I. Furenlid, 179th Meeting of the American Astronomical Society, 1991.
- *The Technical Architecture Report*, K. Guyton, J. Holden, L. Leon, G. Matthews, M. Peck, Emory University ITD, 1994.
- *Ultraviolet and Optical Line Profile Variations in the Spectrum of Epsilon Persei*, D.R. Gies, et al., *Astrophysical Journal*, 1 Nov 1999.

COURSES TAKEN

- “Sendmail,” Eric Allman, Sendmail, Inc., LISA 2004.
- “Solaris Architecture,” Richard McDougall and James Mauro, Sun Microsystems, USENIX, 1999.
- “UNIX Network Programming,” Richard Stevens, USENIX, 1999.
- “Solaris Internals,” Marc Stavelly, Sun Microsystems USENIX, 1998.
- “Essential UNIX Programming,” Richard Stevens, USENIX, 1998.
- “NT Now,” (NT Enterprise Networking), Bill Boswell, Start Now Seminars, 1997. “System V Release 4.0 Internals Part 1-Virtual Memory and File Systems,” Mike Scheer, ProLogic and Steve Buroff, AT&T, USENIX, 1992.
- “System V Release 4.0 Internals Part 2-Selected Topics,” Steve Buroff, AT&T and Mike Scheer, ProLogic, USENIX, 1992.
- “An Introduction to C++,” Robert Murray, AT&T Bell Laboratories, USENIX, 1991.
- “C++ Programming Style,” Tom Cargill, USENIX, 1991.
- “Mach Tutorial,” Avi Tevastian, Jr., USENIX, 1990.
- “Mach Virtual Memory Internals,” Nawaf Bitar, Open Software Foundation, USENIX, 1990.
- “UNIX 4.x BSD Systems Admon,” Evi Nemeth, Univ. of Colorado and Rob Kolstad, Prisma, USENIX, 1989.
- “Transformational Leadership Part 1,” IBM, 2 days.
- “Transformational Leadership Part 2,” IBM, 2 days.
- “TQ 101 (Total Quality),” Linda Chiappe, Emory University ITD.
- “Tools of Participation Part 1,” John and Marilyn Oyler, Institute for Cultural Affairs, and Martha Talbott, 3 days.
- “Tools of Participation Follow Up,” John and Marilyn Oyler, Institute for Cultural Affairs, and Martha Talbott, 1 day.
- “Tools of Participation Part 2 (Strategic Planning),” John and Marilyn Oyler, Institute for Cultural Affairs, and Martha Talbott, 3 days.

COURSES DEVELOPED AND TAUGHT

- “Introduction to UNIX” (Two 2.5-hr sessions)
- “Understanding UNIX-Advanced” (Four 2.5-hr sessions, 349 slides)
- “Perl Programming” (Three 2.5-hr sessions, 253 slides)
- A series of classes on Linux kernel internals created and taught internally at Google.
- Introduction to Python programming for non-programmers.
- Practical Python programming for those with shell script experience.