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Objective Consulting projects or full-time employment exercising my skills in network administration, scientific research and development, programming, technical writing, or teaching.

Skills

- Operating Systems and Languages: Solaris, BSD/FreeBSD/OpenBSD, Red Hat Linux, Windows 95/98/NT/2000/XP, MacOS, C, C++, Bourne shell/ksh/csh/tcsh/bash, awk, sed, lex, yacc, perl, cgi-bin, SQL (mySql), Common Lisp, Fortran, Java, Prolog
- TCP/IP Services and software support: SMTP, WWW, DNS, DHCP, FTP, TELNET, NIS, POP, IMAP, SMB, SSH, sendmail, apache, BIND, iptables, ipchains, samba
- Network Security: stateful inspection firewalls; packet filtering; intrusion detection, spam and network abuse investigation; site security audits; backups and disaster recovery
- Analysis and development environments: IDL, IRAF, Forte/Sun Visual Workshop, X11, Motif, CFITSIO, POSIX threads, Solaris IPC
- Strong background in physical sciences, math, and statistics
- Technical writing and speaking skills: participated in critical design reviews of EUVE, GALEX, and HST-COS satellite astronomy missions; published several peer-reviewed journal articles and numerous conference poster presentations; teaching assistant for upper-division computer science courses at U.C. Berkeley and Penn State.

Experience TEN SIGMA RESEARCH Richmond, CA
October 2001 - present
Proprietor of Ten Sigma Research (tensigmaresearch.com), my consulting business.

- Provided system administration, programming, technical support, and web design services to a variety of clients.
- Reimplemented NORAD Simplified General Perturbations family of low-earth and deep-space satellite tracking algorithms; translated from original FORTRAN to C; performed extensive validation and verification, revealing and repairing several bugs in the original NORAD implementation
- Implemented efficient multi-site, multi-satellite pass prediction algorithm, including WWW infrastructure for automatically updating pass predictions as updated orbital elements are released by NASA.

UC BERKELEY SPACE SCIENCES LAB Berkeley, CA
March 1997 - October 2001

System administrator and programmer for the Experimental Astrophysics Group, developing ultraviolet and X-ray detector subsystems for astronomical satellite missions:

- Administered a network of about 80 Solaris, SunOs, Linux, Windows, and MacOS computers, including servers, lab data acquisition workstations, and desktops; supervised junior system administrators

- Designed and implemented high-speed data acquisition hardware and software for space-based astronomy missions: Galaxy Evolution Explorer (GALEX) and Hubble Space Telescope Cosmic Origins Spectrograph (HST-COS).
- Analyzed science data from several other astronomical satellites, including FUSE, ROSAT, and ALEXIS.

UC BERKELEY CENTER FOR EUV ASTROPHYSICS

Berkeley, CA

April 1990 - March 1997

Programmer for the Extreme Ultraviolet Explorer (EUVE) project:

- Implemented, maintained, and documented major portions of the data processing pipeline for the EUVE satellite.
- Developed new techniques for detecting point sources and extended features in low signal-to-noise ratio skymap data.
- Enhanced mission planning and observation scheduling software.

Education

UNIVERSITY OF CALIFORNIA, BERKELEY

Berkeley, CA

1984-1989

Ph.D. studies in computer science, with minors in math and physics. Completed all Ph.D. course work requirements, passed comprehensive exams in hardware, software, theory, and artificial intelligence. Research in AI applications in software design. Teaching assistant for CS 160 (data structures) and CS 188 (artificial intelligence). Other areas of study: number theory, cryptography, neural networks, neuroanatomy of human vision.

PENNSYLVANIA STATE UNIVERSITY

University Park, PA

1980-1984

B.S. degree in computer science, GPA 3.95. Emphasis in compilers, automata theory, discrete math, artificial intelligence. Honors and graduate coursework in physics, computer science, and neuroanatomy via University Scholars Program. Other areas of study: probability and statistics, astronomical instrumentation and data analysis, psychology. Teaching assistant for CS 488 (artificial intelligence).

Awards and Honors

- NASA Goddard Space Flight Center Group Achievement Award (1993)
- National Science Foundation Graduate Fellowship (1985-1988)
- Summa Cum Laude graduate of Penn State University (1984)
- Honors program in Computer Science, Penn State University (1980-1984)
- Evan Pugh Scholar (1983,1984) Awarded to students with GPA in top 0.5 percent of their class
- National Merit Scholar (1980)

Selected Publications

- S. Bowyer, R. Lieu, M. Lampton, J. Lewis, X. Wu, J. J. Drake, and R. F. Malina. The first Extreme Ultraviolet Explorer source catalog. *ApJS*, 93:569–587, August 1994.
- J. Lewis, S. Bowyer, M. Lampton, X. Wu, and M. Mathioudakis. Searching EUVE data for transient/flaring extreme ultraviolet sources. In *IAU Colloq. 152: Astrophysics in the Extreme Ultraviolet*, pages 481+, 1996.

- J. Lewis, M. Lampton, X. Wu, and S. Bowyer. Variability in EUVE second catalog sources. In *American Astronomical Society Meeting*, volume 187, pages 0404+, December 1995.
- J. W. Lewis. Detecting point sources in EUVE survey skymaps. *Journal of the British Interplanetary Society*, 46:346–352, September 1993.
- J. W. Lewis. Cheating Poisson: A biased method for detecting faint sources in all-sky survey data. In *ASP Conf. Ser. 77: Astronomical Data Analysis Software and Systems IV*, volume 4, pages 327+, 1995.
- J. W. Lewis, C. A. Dobson, and V. Saba. Data indexing techniques for the EUVE all-sky survey. In *ASP Conf. Ser. 52: Astronomical Data Analysis Software and Systems II*, volume 2, pages 92+, 1993.
- J. W. Lewis, A. Wiercigroch, J. S. McDonald, B. Antia, K. E. McDonald, and B. Stroozas. The EUVE all-sky survey maps. In *American Astronomical Society Meeting*, volume 182, pages 4131+, May 1993.
- R. Lieu, J. Mittaz, S. Bowyer, J. Lewis, and C. . Hwang. EUV emission from a sample of active galactic nuclei. *Advances in Space Research*, 16:81–84, August 1995.