

## **PROFESSIONAL EXPERIENCE**

Systems Analyst with experience in academic, business and government computing environments. My skills include extensive High Performance Computing, Scientific Simulation, Data Analysis, Visualization, Project Planning and management. I am a motivated self-starter with excellent communication skills. I continually work to update my skill set to meet new challenges.

## **TECHNICAL SKILLS**

- Hardware:** Extensive Enterprise Server and Desktop Class Hardware experience, Multiple processors from Intel x86, x86\_64, IBM Power series, HP-PA, Alpha, SAN and NAS appliance, Blade servers, Remote management through IPMI.
- Virtualization/Containers:** VMware vSphere, VirtualBox, Xen, KVM, Docker, Singularity
- Operating Systems:** RHEL, CentOS, Ubuntu, SLES, MS-Windows Desktop, Server and WindowsHPC, Mac OSX, Compaq Tru64 Unix, Sun OS, HP-UX, Irix, Solaris, Unicos, QNX, VMS, VM/CMS, MVS
- Clustering:** Bright Cluster Manager, Rocks, xCAT, HP CMU, Platform CM
- Workload:** PBSpro, Torque/Maui, Moab, LSF, Slurm, SGE/UGE
- Programming Languages:** Fortran, C, C++, Perl, Perl/CGI, HTML, DHTML, CSS, XML, PHP, Javascript, OpenGL, Applescript, C Shell Script, Assembler, Basic, MySQL and others
- Application Software:** Multiple IDEs for Unix, Ansys Suite of Engineering Software, Matlab, LS-Dyna, Star-CCM+, Sage Math, MS-Office, IDL, PV-Wave, AVS, Iraf (Astronomical Image Analysis) and related packages, Drupal and Wordpress content management, Apache
- Network Analysis:** Network analysis with Nmap, Wireshark, Nbtstat, Nbtscan and other protocol analysis utilities.

## **EMPLOYMENT HISTORY**

### **HPC Lead Engineer** MORI Associates **2017 to Present**

Providing HPC expertise exclusively to NASA Jet Propulsion Laboratory (JPL) under I2S2 contract.

Developed High Performance Computing Strategic Plan for Jet Propulsion Laboratory. Plan was crafted to guarantee measured enhancements to Computing Capabilities to meet lab mission and science needs. Plan also transitions to an Operational Expenditure funding model to allow for better planning of computing budgets

Implemented HPC Strategic Plan over 18 months. Gradually reduced and retired legacy HPC capabilities. Designed, Specified and Installed new Cluster hardware in 2019 to meet JPL mission goals for the Perseverance Mission.

Managed HPC support team consisting of System Administrator and Customer Support Specialist.

Managed JPL external relationships with the Texas Advanced Computing Center at the University of Texas and the San Diego Supercomputing Center at the University of Southern California. Responsible for provisioning JPL users and projects at each institution. Provide technical contract management support to JPL for each institution. Report usage and project budget needs on contracts. Make periodic visits to institutions in support of JPL relationships.

832 - 687 - 8603 (m)  
baleshaus@sbcglobal.net

Bryan Bales

1314 Fairview  
Houston, Texas 77006

Implemented GPU capability incubator environment utilizing Nvidia DGX-1 and IBM AC822 servers with V100 and P100 GPUs. Maintained and upgraded servers at remote datacenter. Provided support to the NISAR mission, a joint NASA/ISRO project, for developing CUDA based code on these servers. Also supported several groups with ML/DL on these same servers.

Facilitated the creation of a Science Data Pipeline POC between Caltech NexSCI, JPL, Kitt Peak Observatory and TACC to automate the analysis of data from the NEID instrument at Kitt Peak utilizing Globus endpoints at Caltech and TACC. Data transfer from Caltech to TACC endpoint initiates processing of NEID data and automatic return to NexSCI also utilizing Globus for transport.

Attended Supercompute conference in 2017 and 2019 on JPL's behalf. Maintain relationships with major hardware and software vendors in support of JPL initiatives.

Currently planning full refresh of 2019 HPC infrastructure for fall 2023 implementation.

**Senior HPC Systems Analyst eXcellence in IS Solutions, Inc. (X-ISS)** **2013 to 2016**

HPC specialist consultancy. Onsite installation of HPC clusters using a variety of cluster managers including Rocks, Rocks+, xCat and Bright CM. Remote visualization utilizing remote rendering technologies.

Client support of HPC clusters, configuration management, root cause analysis, software installation and management both onsite and remote. Support client applications in multiple domains including engineering, biomedical and oil and gas.

Remote monitoring and analytics utilizing Ganglia, Cacti, Zabbix and custom software.

**Systems Analyst II University of Houston, Cullen College of Engineering** **2007 to 2012**

Managed and implemented project to build Rocks HPC computing cluster of 88 cores in Summer 2007. Configured switches for cluster communications. Set up KVM for cluster use. Remote management using Dell DRAC hardware.

Managed and implemented project to upgrade cluster with Dell M1000e Blade chassis and 16 additional blades totaling 128 additional cores in 2009.

Managed and implemented project for second Rocks cluster in Summer 2010 with M1000e blade chassis and 16 blades.

Managed project in December 2011-January 2012 combined two above clusters with new hardware from two faculty and reorganized network infrastructure of cluster to include 10 Gbps networking and 16 TB of directly attached storage. System is configured with 84 nodes having a total of 736 cores. Operating system is Red Hat Enterprise Linux 5.8 under the Rocks clustering system version 5.4.3. Installed and configured Maui/PBS queue environment on cluster. Cluster is configured for condominium operations to segment resources among 4 different research groups.

Manage network of Linux and Windows servers and workstations for Cullen College of Engineering. Provide security auditing as needed. Perform AD domain joins for new systems. Have admin privilege for Engineering sub-OU. Help maintain Engineering sub-OU as necessary.

Maintain and update EGR.UH.EDU DNS domain.

Provide technical advice and configuration options for Faculty and College equipment purchases.

Responsible for specifying and configuring RHEL 5 and 6 servers and desktop systems. Maintain Sun Solaris and Digital Unix (Tru64 Unix) servers until these legacy systems are decommissioned. Ongoing project

832 - 687 - 8603 (m)  
baleshaus@sbcglobal.net

Bryan Bales

1314 Fairview  
Houston, Texas 77006

maintaining commercial and public domain engineering applications and computational software packages. Also have responsibility for Windows XP, Vista, Win7 and Windows Server 200x systems.

Built virtual machines for College content management system. System is based upon Drupal 6 with planned migration to Drupal 7 to start fall 2012.

Managed procurement and installation of APC room-based UPS and InRow cooling solution for Cullen College of Engineering, Engineering Computing Center. Installation and Operational testing completed in early October 2008. Continuing support of these systems to present. Purchased additional battery capacity for UPS in July 2012.

Managed procurement and installation of Equallogic iSCSI SAN and Dell Blade Systems for virtualization of CCoE administrative and support computing needs in Spring to Fall 2009. Implemented virtualization environment based on VMware vSphere 4 and ESX hosts on Dell M610 blades. Moved major production services to virtual machines. Primary maintainer of virtualization environment. Virtual machines run RHEL (4, 5 and 6) and Windows Server (2003, 2008 and 2008R2).

Instructor for Introductory Linux Seminar for incoming engineering students. Class goal is to familiarize students with Linux and Unix at Cullen College of Engineering and basic Unix/Linux command line operations. Presenting technical information to a mixed group of technical and non-technical users with widely varying levels of computer literacy. Also present abbreviated versions of seminar for professors whose classes need a Linux indoctrination.

**Instructor Houston Museum of Natural Science (part-time)**

**2006 to 2007**

Facilitator and Instructor for Students participating in the Challenger Center Program.

Provide guidance for Challenger Center new software implementation.

Travel with portable planetarium to area schools and give presentations and lectures on Astronomy and Earth Science topics.

**Systems Analyst Innovatum, Inc.**

**2001 to 2005**

Developed embedded software and display routines for new products using C and Assembly Language writing to proprietary LCD interface. Gave significant input to the overall computer hardware and software design.

Managed project to rewrite a major backend data analysis package for Ultra survey output using C and OpenGL for Win2K/XP replacing much slower Basic based graphics subsystem.

Adapted Active A/C tracking solution from the Ultra system for use with an Autonomous Underwater Vehicle.

Maintain legacy code for Innovatum's primary product, the Ultra system, a magnetic locator system designed for deployment on Remotely Operated Vehicles (ROVs) and used to find underwater pipelines, cables, and other metallic objects. Customized software when needed for customer use.

Setup and Maintained Rack-mount PC computers for use with our primary product.

**Systems Analyst Rice University. Department of Physics and Astronomy.**

**1987 to 2001**

Daily Management of multi-vendor departmental computer center, consisting of 50+ networked Macintosh computers, departmental Sun Solaris servers, Compaq Tru64 Unix and VMS based Alphas, HP HP-UX and Silicon Graphics IRIX computers. Largely responsible for creating this center. Original computer center consisted of a Perkin-Elmer, MicroVax II and a PDP 11/55.

832 - 687 - 8603 (m)  
[baleshaus@sbcglobal.net](mailto:baleshaus@sbcglobal.net)

Bryan Bales

1314 Fairview  
Houston, Texas 77006

Performed all Systems Management tasks. Added and Removed user accounts. Set account policy. Performed Usage Monitoring and Capacity Planning. Installed and configured user required software.

Installed, Managed and Updated department web servers and web pages. Implemented form processing with Perl CGI scripts on Apache web servers.

Provided technical expertise, software and hardware specifications tailored to project needs for inclusion in proposals to granting agencies. Subsequently supervised procurement and installation of equipment and software for grant PIs.

Organized departmental computing planning committee, responsible for long-term systems procurement and management policy.

Provided general and advanced user training to the Space Physics department. This was mostly on a one to one basis, but frequently included larger groups.

Coordinated and assisted in implementing Ethernet network wiring for department with university representatives. Primary department liaison for all technology related matters with university.

Specified and procured departmental computer and network systems.

Performed security audits of departmental computer and network activity using Unix and VMS based tools.

Responded to security breaches and break-ins of departmental computer systems. Was solely responsible for forensic analysis and recovery from security incidents.

Created and Managed computer maintenance accounts as a service center within the department. This system had the advantage that Grant writers could much more easily get budget approval for computer usage than for hardware and software purchases.

Wrote Perl scripts to automate monthly billing across multiple operating systems. Billing ran automatically and was collected on my office workstation for final review before submission.

Ported the data processing system for the NASA Pioneer Venus Orbital Ion Mass Spectrometer project from a PDP-11 assembly code to a MicroVAX computer. Used ported code to process a 6 year backlog of OIMS data in just 1 year.

Managed the software development and implementation of a Magnetospheric Modeling effort Rice contracted to produce for the US Air Force Space Environment Laboratory, USAF-SEL. This was the task for which I was originally hired at Rice. The Magnetospheric Specifications Model was completed on schedule and is still in use at the USAF-SEL. Derivatives of this code have also been used for academic research.

**Programmer Analyst Department of Defense. National Security Agency.**

**1985 to 1986**

Participated in Cooperative Education program at Ft. Meade, MD. Position was for alternating semesters.

Wrote Fortran signal processing code for Dec PDP-11 computers.

Wrote a work-alike of the VMS phone utility for PDP-11 systems to allow IRQ like function between terminals.

Wrote prototype graphics code in C and Pascal for mapping applications using World Databank III. A derivative of this project is still in use by the US Coast Guard.

## **EDUCATION**

Bachelor of Science, Computer Science with Mathematics minor, 1987.

National Merit Scholar.

Texas A&M University, College Station, Texas.

832 - 687 - 8603 (m)  
baleshaus@sbcglobal.net

Bryan Bales

1314 Fairview  
Houston, Texas 77006

---

**REFERENCES**

Available upon request.

Available upon request.