Jason R. Gochanour

IT Support Engineer & Systems Architect

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Professional Summary

Dedicated software developer/architect, systems engineer, and systems administrator with 15+ years of experience at Los Alamos National Laboratory, currently pursuing permanent return to LANL's world-class research environment. Proven track record in large-scale infrastructure management, scientific software development, and user facility operations and experiment support. Expert in configuration management, web application development, and systems integration with deep understanding of LANL's mission-critical computing needs.

Excited to transition from Guest Scientist to permanent HPC Programming & Runtime Environments team member, bringing extensive LANL institutional knowledge and passion for supporting groundbreaking scientific discovery.

Core Technical Competencies

Web Development & Full Stack Architecture

- **Full Stack Development** - Expert in architecting enterprise web applications from concept to deployment
- **Backend Frameworks** - Grails, NodeJS, MySQL, RESTful API design and implementation
- **Frontend Technologies** - React, Angular, Vue, jQuery, Bootstrap, MUI
- **Scientific Web Applications** - Specialized in building complex proposal management and experiment tracking systems for research facilities

Software & Build Systems

- **Package Management** - Spack, node, Gradle, various Python tools
- **Build Automation** - CMake, Autotools, Make
- **Container Technologies** - Docker, LXD
- **Programming Languages** - Java, C/C++, Python, Bash, Fortran

Infrastructure & Automation

- **Configuration Management** - Ansible, SaltStack for infrastructure-as-code
- **CI/CD Pipelines** - GitLab CI, GitHub Actions, Jenkins
- **Linux Systems** - RHEL/CentOS, Ubuntu server administration and tuning

Emerging Technologies

- **AI/ML Integration** - Installed PyTorch/TensorFlow environments on custom high-end systems at LANSCE
- **GPU Programming** - Installed CUDA environments and debugged GPU-accelerated scientific applications
- **Scientific Computing Platforms** - Experience deploying and maintaining computational environments for research workflows

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Professional Experience

Guest Scientist | *Los Alamos National Laboratory* | 2024-2025

Advanced systems engineering and infrastructure development

- **Supported critical LANL systems** outside official work duties while at IMCA-CAT, demonstrating continued commitment to Laboratory mission

Systems Engineer | *IMCA-CAT Team at Argonne National Laboratory* | 2024

Six-month assignment supporting Advanced Photon Source beam line operations

- **Managed updates to Ansible infrastructure** resynchronizing configuration management with operational reality
- **Documentation and ticketing** ensuring record of system's state of truth
- **Managed the removal of unneeded hardware** improving physical/digital inventory management
- **Systems integration and troubleshooting** in high-availability research environment

Computer Systems Professional 4 | *Los Alamos National Laboratory: LANSCE* | 2012-2023

Lead systems administrator and software developer for premier neutron science user facility

- **RedHat OpenShift integration efforts** for the LANL HPC project
- **Collaborated with HPC team** through weekly meetings to advance Physics Division integration
- **Coordinated with enterprise software vendors** (Salesforce, ServiceNow) for institutional system planning
- **Designed and developed universal proposal management system** in Grails/MySQL/ReactJS for use at LANSCE
- **Created comprehensive experiment and sample tracking application** managing complete facility lifecycles using Grails/MySQL/jQuery/Bootstrap
- **Architected Infrastructure-as-Code** for 100+ RHEL machines using SaltStack, later migrating to Ansible for Ubuntu deployments
- **Led major OS migrations** from RHEL6 to Ubuntu 20/22 LTS across Materials Science DAQ infrastructure
- **Managed 1+ PB RAID 6 storage systems** ensuring high-availability data management for scientific computing
- **Rebuilt and modernized EPICS IoC systems** migrating from v3.15 x86 to v7 x64 architecture
- **Provided 24/7 on-call support** during beam delivery operations, for computing needs of experimenters (6+ months annually)
- **Mentored junior staff** in web development and systems administration best practices

Key Achievements:

- Recipient of 2022 Large Team Distinguished Performance Award for Coherent Captain Mills Experiment support
- Multiple LAAP and SPOT awards (2013-2017) for infrastructure, web development, and user support excellence

Software Developer 2 | *Los Alamos National Laboratory: NIE Division* | 2011-2012

Cloud computing research and enterprise software development

- **Researched cloud platforms** for DoE implementation: CloudStack, OpenStack, VMware, Ubuntu Cloud
- **Developed HP OO Flows** using Java and C# for Active Directory and vCloud Director integration

Post Baccalaureate | *Los Alamos National Laboratory: D Division* | 2010-2011

Early career systems administration and software development

- **Built aerial imaging system components** in C++/C# with multi-threaded TCP/IP networking

- **Achieved DIACAP accreditation** for 26-server system as Information Assurance Officer
- **Implemented CI/CD infrastructure** using CMake/CTest/CDash with SCRUM methodology

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Education

Bachelor of Science in Computer Network and System Administration | *Michigan Technological University* | 2004-2009

- **Minor:** Computer Science
- **Focus Areas:** Enterprise systems, network infrastructure, software development, system security

Professional Development & Continuous Learning

- **Eagle Scout** - Leadership and project management foundation
- **LANL Training Programs** - Ongoing professional development in HPC technologies, security compliance, and scientific computing
- **Industry Conferences** - Regular participation in systems administration and community events

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Technical Portfolio & Recent Projects

HPC Interview Preparation Portfolio | *October 2025*

Comprehensive technical demonstration of PRE team competencies

Created production-quality technical portfolio showcasing:

- **Complex Spack Environments:** Production, GPU, and debug environments with sophisticated dependency management
- **Advanced MPI Debugging:** Practical deadlock and race condition scenarios with systematic resolution documentation
- **Performance Testing Framework:** ReFrame test suites with statistical baselines and regression detection
- **Infrastructure Automation:** Complete Ansible role for HPC build host provisioning
- **AI/ML Integration:** Distributed PyTorch training with Slurm integration
- **Production CI/CD:** Multi-stage pipeline with comprehensive testing and deployment automation

Repository: Available for technical review and demonstration

Side Projects & Innovation

Universal Proposal Management Concept

- **Full-stack rewrite** of LANSCE proposal and sample tracking systems using modern technologies
- **Technology exploration:** NodeJS backends (currently Strapi), React/Angular/Vue frontends (currently Refine.dev)
- **API-first design** documented in OpenAPI 3 specification via SwaggerHub

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Awards & Recognition

Los Alamos National Laboratory Excellence

- **2022 Large Team Distinguished Performance Award** - Coherent Captain Mills Experiment Team support
- **LAAP Awards (2013-2017):**
  - March 2017: RHEL6 Configuration Management/Infrastructure architecture and migration
  - September 2016: Systems administration and web development excellence
  - September 2015: Sample and experiment management system development
  - September 2013: Creation of sample and experiment management system
- **SPOT Award (2014):** User support and web development contributions

Community Leadership

- **Eagle Scout** - Demonstrated leadership and project management capabilities

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Why Transition to HPC Programming & Runtime Environments?

As a current Guest Scientist with 15+ years of LANL experience, I'm uniquely positioned to contribute immediately to the PRE team's mission. My extensive background in:

- **Infrastructure automation** (Ansible, SaltStack, configuration management for 100+ systems)
- **Scientific software development** (custom applications supporting neutron science research)
- **User facility operations** (24/7 support, workflow optimization, researcher enablement)
- **Enterprise integration** (OpenShift, cloud platforms, vendor coordination)

directly aligns with PRE responsibilities of ensuring reliable, performant HPC environments.

My deep institutional knowledge combined with proven technical expertise and genuine passion for enabling scientific discovery makes me the ideal candidate to transition from Guest Scientist to permanent PRE team member.

Ready to leverage my comprehensive LANL experience to advance the next generation of high-performance computing capabilities supporting world-class research.

References

Available upon request - Former LANL colleagues and HPC industry professionals ready to provide detailed references.

This CV demonstrates not just technical competency, but genuine enthusiasm for the challenges and opportunities that define world-class HPC environments. Ready to discuss how my experience directly translates to immediate value for the PRE team.