

Ryan Scherbarth

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PROFESSIONAL EXPERIENCE

Tesla

Jan. 2025 – Present

Senior Software Engineer, ML Operations

- Led end-to-end bring-up of hyperscale HPC clusters (>300K H100-equivalents), from hardware validation through production deployment.
- Built self-healing infrastructure and automated node remediation pipelines, sustaining >450K H100e across heterogeneous fleets (A100, H100, H200, MI325, GB300).
- Owned and scaled Slurm scheduling infrastructure and Kubernetes control plane supporting large-scale ML workloads.
- Designed and deployed observability systems enabling granular, per-component performance and utilization attribution across clusters.
- Optimized high-performance networking (InfiniBand, RoCE) and parallel storage (Lustre, SDS, NFS), improving reliability and workload efficiency at scale.

Sandia National Laboratories

Oct. 2022 - Mar. 2025

Software Engineer, HPC

- Led project for CS2-Hops (H100) Top500 submission, increasing submission score by 35%.
- Optimized cluster upgrade pipeline & version control system, improving runtime by 76%.
- Currently maintaining DOE-Q Top Secret security clearance.

Center for Advanced Research Computing

May 2023 - Dec. 2024

HPC Systems Specialist

- Configured, benchmarked, & optimized UNM's HPC clusters.
- Installed complex programs for researchers, such as Alphafold, NASA WRF, COSMOS.
- Taught technical workshops for new users & research professionals at CARC.

The University of New Mexico

Jan. 2024 - Dec. 2024

Teaching Assistant, CS491: High Performance Computing

- Worked directly with faculty to create course curriculum surrounding HPC team's competitions.
- Troubleshoot and Debugged class clusters, & verified benchmark leader-board results.

Air Force Research Laboratory

Aug. 2022 - Dec. 2022

Software Engineer Intern

- Created a virtual test environment for measuring impact of cyber attacks on simulated space vehicles.
- Gained familiarity with NASA's Core Flight Software (cFS), Open Sat Kit (OSK), & COSMOS.

PROJECTS & COMPETITIONS

Google Student Developer Club, UNM | *Founder & President*

Fall 2024

SC24 HPC Competition | *Team Manager*

Fall 2024

ISC24 HPC Competition | *Team Manager*

Spring 2024

WC24 HPC Competition | *Team Manager*

Spring 2024

SC23 HPC Competition | *Team Manager*

Fall 2023

WC23 HPC Competition | *Team Manager*

Spring 2023

NASA Minds Team Chilhouse | *Machine Learning Team*

Spring 2023

EDUCATION

University of New Mexico

Albuquerque, NM

B.S. Computer Science, Minor in Mathematics

December 2024

TECHNICAL SKILLS

Distributed Sys. & HPC: Slurm, Kubernetes, Parallel Computing, Cluster Provisioning, HPC Scheduling, ML Infra
Infra & DevOps: Ansible, Ci/CD Pipelines, Linux OS Provisioning, Docker, Singularity, Apptainer, Podman, Enroot
Storage & Networking: Lustre, Distributed Storage (SDS, NFS), Infiniband, RoCE, High-Performance Networking
Benchmarking & Performance: HPL, HPCG, DGEMM, OSU Micro-Benchmarks, MLPerf, iperf, perftest, gprof
Observability & Monitoring: Prometheus, Splunk, Ganglia