Sam Nelson

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Education

Boise State University Boise, Idaho

Bachelor of Science in Mechanical Engineering, Minor in Math *Aug. 1997 – May 2007*

Experience

IT Consultant March 2018 – present

Siliconfuture LLC *Boise, ID*

- Develop custom software solutions and provide training/coaching
- Reverse engineer, bugfix and document legacy systems
- Collaborate with clients to architect, develop and implement new systems

DevOps Engineer May 2024 – Jan 2025

Treasury4 *Spokane, WA*

- Automated the deployment of Snowflake data warehouse schemas and config using Azure DevOps Pipelines
- Built and maintained Kubernetes (AKS) clusters with ArgoCD, kubectl and k9s
- Led the migration from Terraform to Opentofu and implemented remote state encryption
- Developed a custom Powershell Azure DevOps Pipeline YAML linter to catch errors before committing
- Created a Go program to activate Azure PIM for multiple resources concurrently

Software Engineer September 2022 – May 2024

Clenera LLC *Boise, ID*

- Built custom data pipelines using Django, Python, Quickbase and Office 365
- Automated investor reports from engineering data using custom LaTeX templates, Plotly, Pandas and Matplotlib
- Created office TV dashboards using Grafana and Postgres
- Containerized and migrated applications to Azure using Docker and Terraform

Infrastructure Engineer April 2018 – April 2019

J.R. Simplot Company *Boise, ID*

- Designed, built and maintained an Azure hosted multi-node Splunk Enterprise cluster used for SEIM
- Trained and coached teams on Git source control best practices and basic Python scripting
- Configured RHEL and CentOS using Ansible
- Created virtual machine image build tooling using Vagrant

System Administrator March 2014 – March 2018

Kount *Boise, ID*

- Built, supported and deployed AI credit card fraud detection app in a high availability, high performance, PCI compliant, SaaS environment
- Supported Oracle RAC database and Oracle Enterprise Linux servers running on Cisco UCS with Nimble SAN Storage
- Supported PHP applications running on Apache
- Built and supported Elastic Search cluster for customer facing web applications
- Used monitoring and Observability tools such as Nagios, Splunk and Grafana to monitor system performance and availability

SAN Engineer / Software Developer August 2010 – February 2014

Hewlett-Packard *Boise, ID*

- Built and maintained a custom infrastructure configuration management tool using Perl, Oracle and Apache to manage SAN storage array and switch configuration
- Profiled and optimized Oracle SQL queries and Perl application code to improve performance and stability. Assisted end users with SQL query development and tuning
- Created a team wiki and championed open and standardized documentation practices. Documented the processes for configuration management tool usage and troubleshooting
- Trained new team members on tool usage and support processes

Mechanical Engineer July 2009 – August 2010

Adecco Technical *Boise, ID*

- Created a Postgres database to track and analyze product failures in the field
- Created Python scripts to automate ETL processes and utilize Google Translate API to translate field failure reports to English
- Created Python tool using NLTK to analyze translated field failure report keywords and suggest potential root causes for later investigation

Packaging Engineer November 2007 – July 2009
Adecco Technical *Boise, ID*

- Coordinated with corrugated box, wooden pallet and packaging foam cushion manufacturers to apply engineering design changes
- Conducted instrumented vibration, drop, crush and environmental testing of packaging to replicate and remediate field packaging failures
- Created reports and presentations to communicate test results and engineering recommendations
- Optimized packaging supply chain by adjusting packaging size and pallet layout for better shipping container utilization and additional cost savings

Manufacturing Engineer May 2007 – November 2007
Photronics *Boise, ID*

- Supported the production of custom semiconductor masks. Worked all stages of the mask production process
- Evaluated and repaired mask defects using electron microscopy and atomic force microscopy tools

UNIX Systems Administrator / SAN Engineer June 2000 – May 2007
Hewlett-Packard *Boise, ID*

- Ran the UNIX helpdesk for the HP Boise site serving all HP-UX end users
- Built and supported site email systems running Sendmail and Postfix
- Built and maintained HP-UX systems running SAP applications
- Provisioned and supported SAN storage arrays and switches for HP-UX, Windows and Linux enterprise servers

Projects

Schemachange | Python Sept 2024 – Present

- Added support for Snowflake SQL object dependency resolution using directed graphs via the NetworkX and SQLGlot Python libraries
- Added schema 'baseline' feature to migrate existing databases to Schemachange
- Collaborating with the Schemachange community to add new features and fix bugs
- Created a Schemachange plugin system per Schemachange community pull request feedback

Eclipsing Binary RZ Cassiopeiae: Generating a light curve with a DSLR camera Spring 2020
Boise State University - PHYS205: Stellar Astronomy | Python, Jupyter Notebooks, LaTeX

- Used a consumer DSLR to image the eclipsing binary star RZ Cassiopeiae during the primary eclipse phase
- Used Python and Jupyter Notebooks to process the images and generate a light curve
- Used LaTeX and Beamer to create a research poster for the project

homebrew-freecad | Ruby, CMake, Homebrew Nov 2014 – 2016

- Created and maintained the Homebrew formula for FreeCAD until transferring to the FreeCAD organization

Technical Skills

Languages: Python, Go, Java, C, SQL, bash, zsh, Powershell, PHP, Perl, Ruby, HTML/CSS
Markup: Markdown, LaTeX, XML, JSON, YAML, Jinja, Django templates
Databases: Oracle, MySQL, PostgreSQL, SQLite, SQL Server, Quickbase, Snowflake
CI/CD: Azure Pipelines, Jenkins, Bitbucket Pipelines, ArgoCD, GitHub Actions, Boomi
Observability: Azure Monitor, Azure Log Analytics, Grafana, Prometheus, Loki, Promtail, CheckMK, Nagios, Splunk, Sumo Logic
Virtualization: WSL, Hyper-V, VMware, VirtualBox, Azure VMs, EC2, Docker, Kubernetes
DevOps Tools and IaC: Git, Docker, VS Code, Vim, make, Postman, IaaC, Ansible, Puppet, Opentofu, Terraform, Packer, Vagrant, ARM Templates, GitOps
Operating Systems: Linux: RHEL, Ubuntu, Debian, SUSE; Windows, OSX, iOS, Android, UNIX v6
Security: Nmap, Nessus, Wireshark, Burp, iptables, OWASP, OpenVPN, IPsec, SSL/TLS, PGP, GPG, 1Password, Keeper, Azure Key Vault, Oauth2
Libraries: pandas, NumPy, Plotly, Matplotlib, requests, requests_cache, environs, rich, Pytest, Django REST Framework