

Haruna Adoga, PhD

Glasgow, UK.

Networks | HPC Systems | Cloud | Research & Development

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ABOUT

Haruna Adoga has over ten years of experience in systems and network engineering, focusing on Cloud and Linux HPC systems automation including compute and storage. He also has experience in IT project design, implementation and management. He has experience and training as a researcher in computing science, with research endeavours in systems, high-performance computing, and virtual network management. He is an active member of the British Computer Society (BCS) and the Institution of Engineering and Technology (IET).

Work Experience

HPC Systems Engineer - Research Computing

August 2023 – Present

University of Sussex, England

- Automated the deployment of HPC services using Infrastructure as Code - Ansible, terraform, CI/CD
- Carried out the design and installation of compute (VMs and bare metal), storage (NFS and Lustre) and networking (high-speed Ethernet) solutions for HPC
- Designed and installed the needed physical computing and networking for OpenStack private cloud in the datacentre
- Design of a private cloud HPC infrastructure for Research Computing
- Collaborating with industry experts and researchers in delivering tailored HPC solutions
- Working with external vendors (Dell, Nvidia, Juniper) to design, procure and implement HPC solutions
- Providing design and technical support in troubleshooting problems with HPC clusters and Linux systems
- Carrying out upgrades, migration and applying security patches on Linux/Unix systems, compute, storage and networking
- Managed the GridPP distributed Computing infrastructure, including new service deployments and upgrades
- Led the network and IP address design for OpenStack Private Cloud HPC infrastructure
- Led the network and IP address design and implementation for OpenStack Private Cloud and Lustre storage integration
- Managing an HPC facility comprising almost 1250 CPU cores distributed across 81 compute nodes connected via 100Gb/s omnipath fabric.
- Automated the design and configuration of GridPP computing middleware using Ansible and Terraform for GridPP external HPC jobs
- Hands-on Datacentre experience including cabling, server and high-speed 200G Ethernet network deployment for HPC - QSFP56 cabling
- Implemented a three-tier network infrastructure for power management, provisioning and data transfer in private cloud environment
- Hands-on experience with HPC management and monitoring tools: Prometheus, SNMP, perfSONAR

Tutor & Graduate Assistant

Feb 2021 – August 2023

University of Glasgow, Scotland

- Providing technical support in troubleshooting problems with HPC clusters and Linux systems
- Carrying out upgrades and applying security patches on Linux/Unix systems
- Performing Linux/UNIX system administration and design, including storage and web server hosting with Nginx
- Practical and theoretical teaching of Information Technology course for MSc – Web development with Python (Django framework)
- Working as a marking assistant to help with grading undergraduate and postgraduate students' assessments

Networks & Systems Engineer

November 2016 – Present

Freelance

- Troubleshooting network devices, e.g., Cisco Routers/Switches and computer hardware
- Proficient in using the Linux command prompt

- Networks, Linux and Windows server administration
- Designing and managing Cisco networks for LAN & WAN connectivity
- Performing Cloud infrastructure monitoring and configuration

University Lecturer - Systems Engineer

May 2012 – January 2020

Federal University of Lafia, Nigeria

- Delivering lectures in computer programming using Python and Java
- Presenting theoretical and practical lectures on networks, distributed systems, and system administration
- Assisting with routine systems maintenance by managing updates and patches
- Leading troubleshooting efforts on Windows, Mac and Linux servers
- Teaching undergraduate and postgraduate diploma students courses in networking and programming

Technical Support Specialist

April 2011 – May 2012

Airtel Telecommunications, Abuja, Nigeria

- Actively processing technical service requests from Airtel subscribers
- Served as a tier 1 skilled service desk personnel in incident management
- Carried out hierarchical escalation to tier 2 support engineers for resolution
- Proffered solutions to subscribers to resolve service disruptions, based on SLA

Education

University of Glasgow

Glasgow, United Kingdom: Jan 2020 to May 2024

PhD. Computing Science.

University of Hertfordshire

Hertfordshire, United Kingdom: July 2014 to Jan 2016

MSc. Computing Science, Distinction.

University of Maiduguri

Maiduguri, Nigeria: April 2004 to Dec 2009

Beng. E & E Engineering, 2:1.

Skills Summary

Networking and Systems : LAN, HPC, WAN, VPC, NFV, InfiniBand, BGP, Switching, RedHat, SLURM, Ubuntu, Routing, IPv6

Development Tools/Languages: Python, Bash Scripting, Git, Docker, Django, Xcat

Applications/Libraries: Wireshark, VMWare, Gurobi, KVM, NetworkX, Numpy, Matplotlib, Scapy, NMAP

Infrastructure: Datacentre networking, OpenStack private cloud, AWS cloud, Google Cloud

IaC/Automation : Ansible, Terraform, DevOps, CI/CD

Project Management: Trello, Jira, ITILv3

Storage: CEPH Object store, Network File System, Lustre, CERN VM File System

Research and Industry Certifications : Scientific paper reviews, Cisco CCNA, CCNP, AWS Cloud Practitioner

IT Certifications and Professional Memberships

British Computer Society (BCS)

2022

BCS, UK

Amazon Web Services (AWS) Cloud Practitioner

July 2022

Amazon Inc.

Information Technology Infrastructure Library (ITIL v3)

September 2014

Axelos - UK

Cisco Certified Network Professional (CCNP R & S)

Feb 2013

Cisco Systems

Selected Projects

- OpenStack Private HPC Cloud** | *Compute, Networks, Storage, High-performance* Nov 2023 - present
- * Design and deployment of OpenStack Cloud
 - * Linux Operating Systems upgrades and migration
 - * KVM server virtualization and network performance measurements
 - * Datacentre network design
 - * Software-defined networking for Cloud computing
- Testbed design and evaluation of NFV Platforms** | *SDN, NFV, UNIX, OpenFlow, Docker* June 2022
- * Carried out the performance evaluation of commonly used virtual network functions in ISP environments
 - * Real testbed design on commodity servers (UNIX) for hosting network functionalities
 - * KVM server virtualization
- Hybrid Network Functions Deployment on Commodity Servers** | *Routing, Firewall, IDS* 2020 - 2021
- * Virtualization, Switching, stateful and stateless firewall deployments
 - * Optimisation of virtual network functions placement at the edge
- Network and Server Penetration Testing** | *Unix, Windows, Server Security* November 2016
- * Designed pen-test infrastructure in a multi-OS environment
 - * Carried out a complete pentest lifecycle on a LAN with Linux & Windows Servers

Selected Publications | *NFV, Switching, UNIX, Virtualization, Containers*

- Leveraging NFV Heterogeneity at the Network Edge** Jan 2024
PhD Thesis, University of Glasgow [View publication](#) *United Kingdom*
- Latency-aware vNF Placement on Heterogeneous Hosts at the Network Edge** Dec 2023
IEEE Global Communications Conference – [View publication](#) *Kuala Lumpur, Malaysia*
- Performance Evaluation of Virtual Network Functions** July 2022
IEEE Network Softwarization Conference – [View publication](#) *Milan, Italy*
- Network Function Virtualization Frameworks: Review of Challenges** Feb 2022
MDPI Future Internet Journal – [View publication](#) *Basel, Switzerland*

Service and Volunteering

- University of Glasgow** May 2021 – May 2022
School of Computing Science Systems Section Seminars
 - * Scheduling and hosting weekly seminars for the Systems research group
- IEEE Journal** February 2021 – Present
Journal reviewer
 - * Reviewing conference and journal articles for the IEEE
- AFRINIC** May 2018 – Present
Policy Development Working Group Member
 - * Developing and discussing a number of resource policy proposals that AFRINIC implements towards distributing IPv4, IPv6 and ASN resources in Africa.
- YouTube** 2014 – Present
Hands-on tech tutorials
 - * I present hands-on videos on various aspects of Information Technology, emphasising Linux Server Administration, Windows, Networks and Automation. – [View YouTube Channel](#)