Justin (Jashandeep) Bains

289-707-3333 | jashandeepjbains@gmail.com | GitHub | justin-bains | Website

Education

Honours Bachelor of Computer Science (BCS), University of Waterloo, Waterloo, ON **September 2019 – August 2023**

Relevant Coursework: Computer Networking, Computer Security and Privacy, Database Systems, Application Development, Operating Systems, Introduction to Artificial Intelligence, Algorithm Design and Data Abstraction, Mathematical Statistics, User Interface Design, Applied Linear Models, Sampling and Experimental Design

Certifications

- **Cisco** CCNA
- **CompTIA** Security+
- **CompTIA** Network+
- **CompTIA** A+
- **GCP** Associate Cloud Engineer

Professional Summary

Versatile IT professional transitioning from web development and programming into infrastructure, networking, and cloud operations roles. Experienced in computer hardware, structured cabling, troubleshooting, and customer support, with a proven track record in delivering web and cloud solutions. Strong foundation in physical and virtual infrastructure, technical problem-solving, and supporting mission-critical systems in ticket-based environments. Currently pursuing the AZ-104 Microsoft Certified: Azure Administrator Associate, with plans to complete the AZ-305 Azure Solutions Architect Expert certification. Seeking to leverage broad technical skills and hands-on experience to focus on IT operations, networking, and systems administration.

Experience

Cloud Infrastructure Monitor and Technical Support, Lion's Appliance Repair **June 2024 – Present**

- Provide L2/L3 support for cloud infrastructure, resolving OpenProject tickets related to networking, security, and system performance
- Aligned the development with the principles and best practices of web design
- Migrated AWS architecture to Cloudflare, cutting costs while maintaining security, performance, and scalability
- Used Terraform to create secure and reusable infrastructure modules for cloud environments
- Migration of applications using Dockerfiles for use in Kubernetes cluster and event-driven software to a serverless implementation

Tax Accountant, H&R Block **January 2024 – April 2024**

- Demonstrated attention to detail in preparing accurate tax returns, highlighting precision in tasks, earning the Top Performer Award
- Helped mediate the transition to a new software system, including writing documentation and helping train staff. Resulting in the location completing the most returns on the new system
- Communicated complex information clearly to clients with varying levels of technical and financial knowledge
- Delivered customer-facing support, Resolved conflicts and de-escalated situations with upset or frustrated clients

Fullstack Developer, Lion's Appliance Repair **August 2023 – November 2023**

- Developed a responsive company website with modern web stack: HTML, CSS, JavaScript, TypeScript, Node.js, Astro, and React
- Automated billing processes with Google Apps Scripts, reducing invoice generation time from 3 hours to 15 minutes weekly
- Implemented CI/CD pipelines using GitHub Actions for automated testing and deployment
- Automated the creation and sending of invoices using Google Apps Scripts, improving efficiency and accuracy in billing processes
- Used scikit-learn for data preprocessing and model evaluation. Processed and manipulated images using Pillow/PIL
- Built web applications for employee landing pages using Python, Django and Flask, ensuring robust and maintainable code

Fullstack Developer, Oakville Town Taxi **April 2020 – October 2020**

- Led the development of a responsive website with AWS S3 using HTML, CSS, JavaScript, and NodeJS
- Enhanced site security, speed, and user experience via AWS Secrets Manager, load balancing, caching, compression, and encryption
- Implemented CI/CD pipeline using GitHub Actions for automated testing and deployment

IT Setup Assistant, AA Taxi **June 2018 – July 2018**

- Assisted with the installation and configuration of radio communication systems, computer hardware, and dispatch software under the guidance of senior staff
- Supported setup activities, including basic wiring and software installation, gaining foundational experience in IT operations
- Authored user-friendly documentation outlining setup procedures, wiring diagrams, and basic troubleshooting steps for staff reference

Volunteer & Extracurricular Experience

AV Helper, Robert Bateman High School (Grades 9–10) **September 2016 – June 2017**

- Assisted with setup, operation, and troubleshooting of audio-visual equipment for school assemblies, events, and presentations
- Supported local events hosted in the school with projector, microphone, and sound system configuration
- Gained hands-on experience with basic AV wiring, equipment maintenance, and event logistics

Audio-Visual Volunteer, Local Gurudwara **June 2017**

- Helped install and organize cabling for the Gurudwara's sound system, including speaker placement and wiring
- Assisted in first time install, setup and labeling the AV cabinet for easier access and maintenance

Projects

Hybrid Server Cluster

- Designed and deployed a cost-effective hybrid infrastructure using a self-hosted Kubernetes cluster for computation, Azure Web App Service for public access and Cloudflared tunnel for inter-network communication with public resources
- Implemented network isolation, firewall rules, and Fail2Ban for security; automated deployment and configuration with Ansible

- Rebuilt the Azure Monitor stack locally by self-hosting and integrating Prometheus, Grafana, and Loki for unified, multi-layer Kubernetes monitoring and alerting
- Configured automated certificate rotation for cluster components using cert-manager with cloudflare TLS/SSL certificates and internal CA for private services
- Streamlined log aggregation with Fluent Bit for parsing and enriching log data before ingestion into Loki
- Expanded cluster with Cisco Catalyst 3650 switches implementing VLANs for network segmentation and QoS policies for traffic prioritization
- Configured redundant power supplies and network paths using LACP for high availability
- Instantiated High Availablility CoreDNS
- Developed custom metrics exporters for monitoring switch health and network throughput
- Enforced application segmentation through NetworkPolicy objects governing east-west traffic
- Implemented system-level controls: RHEL nodes with CIS benchmarks, Debian control plane with AppArmor profiles
- Configured cloudflared tunnels with TCP stream termination at the edge router before reaching NodePort services
- Extended Prometheus monitoring to track: Per-node power draw via IPMI BMC sensors, Wattage efficiency (GFLOPS per watt) for compute workloads, Switch ASIC utilization via SNMP exporters
- Monitor and maintain hybrid infrastructure: Cisco Catalyst 3650 switches via SNMPv3 and IMNI (tracking power/port stats), RHEL/Debian servers using Prometheus/Grafana (CPU/RAM/disk/wattage), k3s cluster health through OpenTelemetry metrics
- Rebuilt the Azure Monitor stack locally by architecting and deploying a self-hosted observability platform using Prometheus (metrics), Grafana (visualization), and Loki (log aggregation)
- Replicated Azure Monitor's multi-layer monitoring approach, collecting and correlating metrics and logs from infrastructure, Kubernetes control plane, and application workloads
- Developed unified dashboards and alerting rules to provide comprehensive visibility and actionable insights, similar to Azure's managed monitoring solution
- Integrated OpenTelemetry and custom exporters to extend monitoring coverage and support advanced troubleshooting
- Implemented enterprise networking solutions: FreeRADIUS for 802.1X device authentication, ISC Kea DHCP server with IP reservations, Secure Cloudflare Tunnels with mTLS for Azure to k8s connectivity
- Hardened systems following CIS benchmarks: RHEL compute nodes (SELinux/firewalld), Debian control plane (AppArmor/minimal install), Kubernetes (PodSecurityPolicies/NetworkPolicies)
- Expanded cluster with Cisco Catalyst 3650 switches implementing VLANs for network segmentation and QoS policies for traffic prioritization
- Configured redundant power supplies and network paths using LACP for high availability and increased throughput
- Developed custom metrics exporters for monitoring switch health and network throughput
- Enforced application segmentation through NetworkPolicy objects governing east-west traffic
- Implemented system-level controls: RHEL nodes with CIS benchmarks, Debian control plane with AppArmor profiles
- Extended Prometheus monitoring to track: Per-node power draw via IPMI BMC sensors, Wattage efficiency (GFLOPS per watt) for compute workloads, Switch ASIC utilization via SNMP exporters
- Created energy monitoring system with Grafana dashboards tracking device usage
- Customized MIBs for tracking PoE budget utilization on switch ports
- Correlated SNMP metrics with application performance in Grafana

Residential Network Installation

- Designed and installed structured cat6 cabling systems for residential properties with patch panels and keystone jacks

Game Simulation Framework & Analytics Platform (Open Source)

- Performed ETL (Extract, Transform, Load) on raw gameplay telemetry to ensure accurate data for modeling and analysis
- Implemented statistical and forecasting models for in-game economy and player behaviour using Python and Pandas
- Built Grafana dashboards to visualize simulation results, KPIs, and forecast metrics
- Designed and implemented ETL pipelines ingestion and normalized gameplay telemetry into MongoDB for analysis and downstream dashboards
- Ensured code quality through modular design, testing, and documentation to support collaborative development
- Managed the GitHub organization: provisioned collaborators, configured teams, repository permissions, and branch protection policies
- Administered Azure Active Directory (Entra ID) for the project tenant: provisioned users/groups, configured RBAC, and managed service principals/managed identities for secure CI/CD workflows

Penetration Testing

- Executed stored and reflected cross-site scripting (XSS) attacks, performing session hijacking to gain unauthorized access
- Conducted SQL injection attacks, extracting database information and injecting administrator credentials to escalate privileges
- Documented vulnerabilities with CVSS scoring and recommended remediation strategies including input validation and parameterized queries
- Tested network services for vulnerabilities using Nmap and Metasploit framework

OpenFlow Mininet Routing

- Configured and analyzed Software-Defined Networking (SDN) routing policies using OpenFlow in a Mininet simulation
- Designed and implemented network traffic management strategies, optimizing data flow and security in virtualized environments
- Investigated network segmentation and access control techniques to enhance security and performance in simulated SDN networks

- Developed custom controllers using Python and POX for traffic engineering experiments

Skills

Networking: LAN, WAN, Core Networking, VLANs, VRFs, OSPF, BGP, DHCP, DNS, Peering, Wave, Cisco IOS/NX-OS, LACP, QoS, NAT, Firewalls, VPNs, SDN (OpenFlow), 802.1X, RADIUS, LDAP, CDP
Security: IDS/IPS (Snort, Suricata), SIEM (Splunk, Prometheus, Grafana, Loki), mTLS, PKI, Network Hardening, Incident/Change Management, Documentation, Wireshark, Network Policies, Hardened Kubernetes
Monitoring: Prometheus, Grafana, Splunk, Loki, SNMPv3 (Cisco), IPMI/BMC, IMNI, NetFlow, sFlow, Open-source NMS, Test Equipment
Cloud/DevOps: Microsoft Azure, Azure Active Directory (Entra ID), Azure Arc, Kubernetes (k8s/k3s), Docker, Containerd, Podman, Terraform, Ansible, Jenkins, Drone, GitHub Actions, Azure Pipelines, ArgoCD
Programming Languages: Python, JavaScript, TypeScript, Java, C++, C, Bash, PowerShell, Go, R, SAS
Frameworks: Kubespray, Flask, React, TensorFlow, Keras, FastAPI, Node.js, Astro
Databases: MongoDB, SQLite, MySQL, PostgreSQL, Elasticsearch, Redis
Operating Systems & Scripting: Red Hat Enterprise Linux (RHEL), Debian, Windows Server, GNU/Linux
Tools: Git, Jira, Vanta, Postman, LaTeX, Mininet, WireGuard