

## **Objective: Network Engineer**

### **Experience:**



#### **University of Tennessee, Knoxville | Graduate Student**

**Studying for Masters of Science in Computer Science | Dec 2022 - Present**

- Specialization is in Data Science & Intelligent Systems; with Dual-Major in Software Engineering.



#### **jPegDesign | Technical Specialist II**

**IT & Network Systems Design, Deployment & Support | March 2023 - June 2023**

- Implement and scale Managed IT Services, support and design for all levels of technical operations and infrastructure.
- Services include Network Management, Security analysis, production acquisition and integration, CAT6 & Fiber networking, Wireless Access Controllers, back-haul repeaters, Wireless (CDMA, LTE & MIMO) antennas, IP Cameras & NVR systems.



#### **Alchemy Computing | Freelance Technical Consultant**

**Full-stack Development, Systems Architecture & Design | Dec 2021 - March 2023**

- Services include, small business infrastructure design, development & deployment, full-stack development, wireless network design and server disaster recovery.
- Notable clients are primarily in the legal, entertainment and construction industries.



#### **Google | Operations Engineer II / DT3**

**Global & 3<sup>rd</sup> Party Datacenter, Engineering Field Services, Hardware, Network & Server Operations | Dec 2018 - Dec 2021**

- Coordinated deployment between Network, Hardware, Systems and Software Engineering teams to deploy full life cycle implementations, from schematic to deployment.
- Deployed, maintained and configured the Cisco and Juniper (3rd party vendor) network infrastructure to the Google Cloud GCVE east coast deployment. The project was completed 60% faster than was scheduled.
- Developed internal BASH, KSH, ZSH Shell scripting automation, dashboards and tools to administer and apply technical solutions to deployment, maintenance and production systems. Languages included Python, Ruby, JavaScript/ECMAScript, SQL, HTML, and CSS on the internal CI/CD "Git like" CVS.



- Received 19 Peer Bonuses, and 2 Awards for Hurricane & Pandemic Support.

### **Switch LTD | Datacenter Technician**

**Network Operations | July 2017 – Dec 2018**

- Deployed customer network configurations, utilizing Palo-Alto, Juniper, Cisco, Cienna, Dell, HP, Checkmate, Alcatel-Lucent as well as other proprietary vendor equipment.
- Coordinated with Engineering teams from over 2,300 customer deployments to provide regional technical support issues on customer provided infrastructure ranging on deployments that ranged from 1RU, to multi-campus / LAN and multi-sector-wide / WAN deployments.
- Ensured perimeter security and conducted routine production infrastructure security audits in compliance with customer provided ISO specifications.



### **Pinnacle Community Services | IT Support Technician IV**

**Information Technology | Oct 2016 – June 2017**

- Implemented company firewall policies over a blend of IP Tables, Cisco ASA, and Baraccuda network technologies.
- Designed and implemented the companies network infrastructure using IPSEC over GRE on Cisco 2800 series ISRs, and 3600 series layer 2 switches.
- Provided systems administration, network design, deployment and support for the Nevada region covering 30 remote locations and three office campuses; in a mixed Windows Server 2016, RedHat, OpenSuse, FreeBSD and Ubuntu environment.
- Designed, built and implemented remote tunnels for locations over SSH tunneling.
- Engineered, provisioned and migrated end-user PC's to security hardened internal Health management kiosks.
- Designed, built and migrated the company back-end infrastructure over to HIPAA compliant, open source and license free solutions.
- Secured Windows production through Active Directory Group Policy Objects.
- Created and migrated the data storage servers to fully encrypted internal storage at rest and in transit.
- Created the secondary backup file servers and using best practices; security hardened the BSD platform.



### **Scientific Games | Technical Specialist II**

**Technical Training & Documentation | Nov 2013 – April 2015**

- Designed and built the mem-cached Arch Linux prototype server infrastructure to distribute the in-house training videos out via the company WAN.
- Designed, developed and deployed the companies first Casino training laboratory. This mirrored the in-field deployment for the entire product line of gaming machines and networks.



- Interfaced with Hardware & Software Engineering teams to develop internal training to distribute to ~680 technicians globally on a monthly release cycle.
- Created training scenarios to match and emulate the field failure conditions to assist in the training of new technicians. Conditions matched that of all possible conditions seen in the field.

### **Alchemy Computing | Freelance Technical Consultant**

**Web Development, Computer Repair, Electronics Prototyping | Sept 2009 – Nov 2013**

- Services included, small business desktop and infrastructure support, web development and design, electronics product prototyping development, wireless penetration testing, data recovery, forensic analysis, wireless network design and server disaster recovery.
- Notable clients were primarily in the legal, entertainment and cosmetic industries.



### **British Telecom | Network Event Management Technician III**

**Global Operations Tier 3, Converged Services Management Center | May 2008 – Sept 2009**

- Gathered and analyzed network traffic telemetry data and prepare documentation for engineering team analysis.
- Provided Tier 3 support, including the provisioning, maintenance and performance monitoring of BT-Infonet's internet backbone; in a cross-platform; mixed vendor environment; platforms included Cisco, Alcatel Lucent, Juniper & Cienna based equipment.
- Designed, developed and implemented a computer vision application utilizing the OpenCV API to notify technicians of network alarm status.
- Protocols included: MPLS, EIGRP, IGRP, Frame-Relay, TCP/IP V4/V6, SIP, ARP, CDP, EIGRP, OSPF, BGP, VTP, Etherchannel, 802.1Q trunking, QoS, Multicast, 802.11a/b/g/n/ac, IPSec, LDAP, RADIUS/TACACS+, SNMP, NTP, VRF and HTTP/HTTPS.
- Gathered and developed the internal documentation website for incident management reporting.



### **Synetcom Digital | Junior Electronics Engineer**

**June 2006 – Nov 2007**

- Worked in the engineering team developing industrial SCADA radios for monitoring digital IO, 4-20ma sensor loops, PWM, and industrial video applications.
- Designed and converted existing customer networks to support fail over resistant mesh network topology utilizing FHSS (frequency hopping spread spectrum) radios.
- Developed and implemented software utilizing the embedded System on Chip encryption modules with AES256 to secure video over radio communications.



- Developed and implemented IPSec on the Active Directory LAN intranet and secured it in a mixed windows Linux development environment.
- Designed, conducted and implemented quality assurance and field simulation testing for complete product range.
- Researched and integrated emerging technologies into new products for field deployment.

### **DeVry University | Academic Tutor**

**Office of Academic Support and Instruction Services, Advanced Development Laboratory, Network Laboratory, Computer Laboratory, Electronics Laboratory | Mar 2004 - June 2006**

- Tutored students in the office of academic support and instructional services, advanced development laboratory, as the resident Teachers Assistant in the network security and advanced micro peripheral courses.
- Focused specialties included:
  - Network Design, Engineering & Architecture
  - Wireless network penetration testing
  - WEP network cracking traffic
  - Network Packet analysis
  - Cisco CLI commands, interfacing and scripting.
  - Implementing network configurations with Java

## **Technical Skills & Security Tools:**

### **Network Engineering & Assessment Tools:**

NMap, Wireshark, Visio, Dia, Draw.io, MTR, ping, ARP, TCP/IP, HTTP, SSL

### **Coding & Programming Languages:**

C, C++, Java, SQL, BASH, ~~TEX~~TeX, YACC, YAML, XML, HTML, CSS, JavaScript, Ruby, Python, Assembly

### **Cloud / Server / HyperVisor Operating Systems:**

Windows 10, Windows 2016, RHEL 7, Linux (VMWare), ESXi, OpenBSD, FreeBSD, NetBSD, Docker, XCP-NG, EVE-NG, VirtualBox

### **Applications:**

Office, SharePoint, Adobe Premiere, Adobe After Effects, Adobe Photoshop, Adobe Illustrator, MATLAB, Slicer (3D Printing)

### **Databases:**

PostgreSQL, MS SQL Server 2008, MS Access, MySQL

## **Personal Projects:**

### **"Homelab" - FOSS Home Computing**

<https://sites.google.com/view/justinsdevlab/home>

**Description:**

Fully self hosted search, DNS, firewall, remote access, file storage, cryptocurrency mining and blockchain hosting.

**Technologies used:**

SearxNG, dnsmasq, Cisco 1841, Palo-Alto PA-500, OpenVPN, IPSEC, GRE, BGP (dn42), FreeNAS, NFS, Monero, Dash, Litecoin, Ethereum, Bitcoin (miners and full-nodes)

**"Cyboard" – Longboard Security System and Datalogger****Description:**

Raspberry Pi based "Smart skateboard", with on-device weather detection, keyfob to "lock" the board, motion and location detection for "ride-data".

**Technologies used:**

Python, SQLite, GPS PA1616S, Raspbian, NeoPixel LED, Remote Control Encoder PT2262, SHT30 Sensor, ADXL343 – Triple-Axis Accelerometer

**"Video LAN Checker" – VOIP Security Camera Management**

<https://github.com/jknoxdev/video-lan-checker>

**Description:**

Scripts to aid the security camera installer, currently scans the network to detect any cameras, shows encrypted traffic status. Draws diagram of connections to router.

**Technologies used:**

LLaMA 7B, ChatGPT, Python, PostgreSQL, SQLite, Azure, GCP, AWS, ARP, DNS, DHCP, RTSP, RTP

**Education:****(in progress) Master of Science in Computer Science**

University of Tennessee, Knoxville, Dec 2022 – Present

**Web Development Full Stack Bootcamp**

LeWagon, Rio de Janeiro, Brazil, June 2021 – Sep 2021

**Bachelor of Science, Computer Engineering Technology**

DeVry University, Long Beach, California, Oct 2003 – March 2008 GPA: 3.58, Summa Cum Laude, Academic Honors: Dean's List, 2003 – 2007

**Certificates:****(ISC)<sup>2</sup> Certified in Cybersecurity / CC**

International Information System Security Certification Consortium (ISC)<sup>2</sup> Active as of: September 2022