

# Justin Knox, B.Sc., CC

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## Objective: Network Engineer

### Experience:



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

Studying for Masters of Science in Computer Science | Online, Ann Arbor, MI | Dec 2022 – Present

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



#### jPegDesign | Technical Specialist II

Camera, IT & Network Systems Design, Deployment & Support | Ann Arbor, MI | March 2023 – Present

- Implement multiple company-wide installations, support and configurations including access control systems, video monitoring and network infrastructure.
- Technologies include VOIP, Biometric & RFID Access Control Systems (with door strikes), CAT6 & Fiber networking, Wireless Access points, backhaul repeaters, Wireless (CDMA, LTE & MIMO) antennas, IP Cameras & NVR systems.
- Main clients are primarily in the hospitality, retail, and food & beverage industries.



#### Alchemy Computing | Freelance Technical Consultant

Fullstack Development, Systems Architecture & Design | Ann Arbor, MI | Dec 2021 – Present

- 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 | Charleston, SC; Reston, VA | Dec 2018 – Dec 2021

- Deployed, maintained and configured the Cisco ISRs and Juniper L3&L2 switches on the production network 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.

- Provided engineering field services of deployment, configuration and troubleshooting of Google servers, network and infrastructure devices.
- Deployed, maintained and configured the internal rack security units as well as external physical perimeter protection devices.
- Received 19 Peer Bonuses, and 2 Awards for Hurricane & Pandemic Support.

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

**Network Operations | Las Vegas, Nevada | July 2017 - Dec 2018**

- Deployed customer network configurations from schematic to configuration, utilizing a wide variety of industry vendors including Cisco, Juniper, Cienna, Palo-Alto, Dell, HP, Checkmate, Alcatel-Lucent as well as other proprietary equipment.
- Provided network incident detection in the internal Network Operations Center and issue escalation, for outages on customer nodes as well as production upstream links.
- 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 | Las Vegas, Nevada | Oct 2016 - June 2017**

- Designed and implemented the internal communications network for the regional office back to the headquarters 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.
- Implemented ITIL security management strategy to achieve ISO 27001 certification for the internal datacenter.
- Designed, built and migrated the company back-end infrastructure over to HIPAA compliant, open source and license free solutions. Implemented strategy to acquire ISO 27001 compliance for the internal datacenter.
- Conducted forensic investigations to procure data for human resource and legal departments utilizing Autopsy, the Sleuth toolkit, PhotoRec and self-developed Log analysis software.
- Secured Windows production through Active Directory Group Policy Objects.



- Converted the existing field deployments, developed the internal Linux images and deployed over 30 locations across the Nevada region.
- Hardened the file server and converted the internal deployment to comply with TLS 1.3
- 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 | Las Vegas, Nevada | Nov 2013 – April 2015**

- 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.
- Designed and built the mem-cached Arch Linux prototype server infrastructure to distribute the in-house training videos out via the company WAN.
- Interfaced with Hardware & Software Engineering teams to develop internal training to distribute to ~680 technicians globally on a monthly release cycle.
- Wrote, filmed, edited and distributed training content using video production methodology to integrate into videos for distribution using Adobe Premiere, AfterEffects in the five phase production lifecycle.
- 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 | Los Angeles, CA | 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 | El Segundo, California | May 2008 – Sept 2009**

- 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.

- 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 analyzed network traffic telemetry data and prepare documentation for engineering team analysis.
- Designed, developed and implemented a computer vision application utilizing the OpenCV API to notify technicians of network alarm status.
- Gathered and developed the internal documentation website for incident management reporting.



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

**Torrance, California | 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.
- Conducted Wireshark traffic and packet analysis to help secure and harden SCADA radio networks in point-to-point, star, bus and wireless mesh topologies.
- Developed and implemented software utilizing the embedded System on Chip encryption modules with AES256 to secure video over radio communications.
- Conducted wireless penetration testing and 802.1X assessments leveraging Kismet, Spectrum analyzers and custom built software to ensure communication security.
- 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.
- Created laboratory experiments to emulate exhibited field errors and develop for more solutions to solve them.
- 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 | Long Beach, California | 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
- Digital forensic network analysis techniques
- Data reconstruction from hard drives (TestDisk, PhotoRec)
- Digital forensics avoidance techniques
- Nmap (Network Map)
- Social engineering techniques
- Network Reconnaissance

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

### **Vulnerability Assessment Tools:**

Nmap, Net Stumbler, Netcat, Kismet, Wireshark, Kali Linux, Pentoo Linux

### **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, Macintosh OSX, SUSE Linux, Ubuntu, Debian, Gentoo, Pentoo, Knoppix, Linux Mandrake (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

## **Education:**

### **Graduate Student, 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