David Hoffman

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SUMMARY

Engineer exploring the frontier of quantum networking technologies, with a strong interest in contributing to research and development in emerging computing domains. Brings extensive experience designing and automating secure, scalable systems in networking, cybersecurity, computer vision, and electronics R&D. 15+ years of Python software development experience.. Skilled at translating complex technical concepts into actionable solutions for cross-functional teams, and eager to apply proven problem-solving abilities to advance the capabilities and applications of quantum communication and networking.

EDUCATION

Certificate – **Quantum Science, Networking, and Communications** — University of Chicago – 2025

Masters of Science – **Software Engineering** — East Carolina University – 2017

Bachelors of Science – **Computer Engineering** — North Carolina State University – 2011

Bachelors of Science – **Electrical Engineering** — North Carolina State University – 2011

TECHNICAL SKILLS

Languages: Python, C, Java, SQL, React, Javascript, Bash, PowerShell
Backend: Django, Flask, FastAPI, GraphQL, REST APIs, WebSockets, Keycloak
AI/ML: TensorFlow/Keras, PyTorch, OpenCV, Scikit-image, Scikit-learn, Pandas
Data: SQL, PostgreSQL, MySQL, Neo4J, Redis, MongoDB, DataStore/FireStore, Vault, Hadoop
Cloud Infra: AWS (Lambda, S3, EC2), GCP (Compute, Run, Kubernetes, Storage), Docker, GitLab's CI/CD

EXPERIENCE

Vice President Software Engineer, Network Automation — Bank of America

June 2025 - present – Chicago, IL

- Design and develop network automation software that integrates with enterprise-scale systems
- Collaborate with security, infrastructure, and risk teams to ensure reliability and compliance across mission-critical systems and complex system orchestration
- Leverage Python, Nautobot, APIs, GraphQL, Websockets, MySQL, Ansible, Vault, CyberArk

Senior Software Engineer, Cybersecurity — Reveald Inc.

June 2022 - May 2025 – Remote (Chicago, IL)

- Led backend development for cybersecurity vulnerability, exposure, impact, and agent control
- Wrote graph reduction algorithms for reduction of node-edge relationships into simplified graphs that the browser can render and user can more easily visualize utilizing NetworkX and custom developed algorithms
- Created a cross-platform ticket management integration for JIRA and ServiceNow saving $150K in annual license fees
- Implemented a system health backend and dashboard for system troubleshooting and status
- Leveraged Python, Django, Flask, APIs, GraphQL, PostgresSQL, Redis, Kafka, Vault, Keycloak, Docker, AWS EC2

Senior Software Engineer — Deloitte (DivIHN Integration)

March 2021 - June 2022 – Remote (Chicago, IL)

- Architected a high-volume automated document management system generating $10M ARR
- Integrated document classification and text recognition (OCR) engines (DocumentAI, HyperScience, Parascript)
- Leveraged Python, Docker, Google Cloud (Cloud Run, Cloud Build, Datastore, Container Registry, Kubernetes)

Senior Software Engineer, Writer, & **Customer Support Engineer** — PyImageSearch

May 2017 - March 2021 – Remote (Durham, NC & Chicago, IL)

- Developed advanced computer vision pipelines for object detection, tracking, and classification
- Authored 170+ technical tutorials and a 3-vol book raising $370K on Kickstarter.com
- Provided technical support to 15,000+ global customers driving community engagement and education
- Grew email mailing list from 80,000 to 300,000 subscribers

Software Engineer — Cisco Systems (GDH Consulting)

June 2017 - October 2017 – Raleigh/Durham, NC

- Implemented Python network automation test cases (BGP, Segment Routing) for Cisco customers
- Configured switches, routers, and traffic generators with Python and Bash automation

Graduate Research Assistant — East Carolina University – Computer Science Department

May 2016 - May 2017 – Greenville, NC

- Instructor for 60-student Undergraduate Discrete Mathematics course
- Researched distributed computing utilizing Hadoop and MapReduce
- Awarded the 2016-2017 Outstanding Computer Science Graduate Assistant by the department

Software Engineer for Electrical Test Systems — Molex

May 2014 - May 2016 – Little Rock, AR

- Developed and maintained automated test systems for validating high-speed electrical connectors and interconnect technologies in a lab-based R&D environment and manufacturing sites (Little Rock, Guadalajara, Dongguan, Manila)
- Designed test and data collection scripts in Python, TCL, and C to interface with oscilloscopes, spectrum analyzers, time domain reflectometers, and vector network analyzers ensuring accuracy in high-frequency signals for datacenter cables
- Collaborated with lab members to analyze signal integrity of cables and connectors and create automated reporting tools to streamline data analysis and test result visualization for engineering and quality teams
- Stored lab and manufacturing data in global MySQL databases

Wireless Systems Engineer for Cellular, Microwave, & Radar — Northrop Grumman

August 2011 - April 2014 – Cherry Point, NC & Virginia Beach, VA

- Designed, integrated, tested and secured unclassified and classified communication systems on the east coast tactical training ranges for the Navy/Marine Corps
- Established and maintained secure wireless communication systems operating across microwave, radar, and cellular frequency ranges
- Performed RF signal analysis and troubleshooting using spectrum analyzers, network analyzers, and other high-frequency test equipment
- Conducted RF path analysis using software such including MATLAB RF Toolbox and spreadsheets
- Installed antennas and lightning protection on east coast radio towers (rescue-climbing certified)
- Developed technical documentation and test protocols for complex communication and sensor systems emphasizing secure and reliable data transmission
- Procured hardware and software for DoD projects and entered them into asset inventory tracking systems

QUANTUM COMPUTING PROJECTS

- Designed and simulated quantum algorithms and communication protocols (Grover's, Simon's, superdense coding, teleportation, BB84 QKD) using Qiskit with Python/Jupyter, progressing from simple gates to multi-step systems
- Developed quantum network simulations in SeQUeNCe, modeling multi-node architectures with realistic hardware constraints such as memory fidelity, channel loss, and detector efficiency to assess system performance