

# David Hoffman

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## SUMMARY

Engineer with a strong interest in contributing to cutting-edge research and development in emerging computing domains. Brings 15+ years of experience designing and automating secure, scalable systems across networking, cybersecurity, computer vision, and electronics R&D. Skilled at translating complex technical concepts into actionable solutions and collaborating with cross-functional teams. Strong interest in quantum computing and quantum 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

**Quantum & Scientific Computing:** Qiskit, SeQUENCe, Python, C

**Programming & Scripting:** Python, C, SQL, Java, JavaScript, Bash, PowerShell

**Frameworks & APIs:** Django, Flask, FastAPI, React, GraphQL, REST APIs, WebSockets

**AI / Machine Learning:** TensorFlow, PyTorch, OpenCV, Scikit-image, Scikit-learn, Pandas

**Networking & Security:** Nautobot, Ansible, Keycloak, Vault, CyberArk

**Data & Databases:** PostgreSQL, MySQL, MongoDB, Neo4J, Redis, Google Datastore/Firebase, Hadoop

**Cloud & DevOps:** AWS (Lambda, S3, EC2), GCP (Compute, Run, Kubernetes, Storage), Docker, GitLab CI/CD, Render.com

## QUANTUM COMPUTING & QUANTUM NETWORKING 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 and EPR pairs to multi-step systems
- Simulated a star-topology quantum network in Python using SeQUENCe, configuring hardware and protocol parameters to model entanglement requests between nodes, and analyzed performance metrics across varying network conditions

## 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)

- Lead backend developer for cybersecurity vulnerability, exposure, impact, and agent control
- Developed graph reduction algorithms using NetworkX and custom methods to simplify node-edge relationships, enabling efficient browser rendering and improved user visualization
- 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, PostgreSQL, Redis, Kafka, Vault, Keycloak, Docker, AWS EC2

**Senior Software Engineer, Document Management Systems** — 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, OpenCV, Docker, Google Cloud (Cloud Run, Cloud Build, Datastore, Container Registry, Kubernetes)

### **Senior Software Engineer, Writer, & Customer Support Engineer — PylImageSearch**

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
- Utilized OpenCV, Python, TensorFlow, Keras, mxnet, Scikit-Image, Scikit-Learn, NumPy, Pandas

### **Software Engineer, Network Test Automation — 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
- Awarded the 2016-2017 Outstanding Computer Science Graduate Assistant by the department
- Researched distributed computing utilizing Hadoop and MapReduce

### **Electrical Engineer, High Performance Cable Test Systems — Molex**

May 2014 - May 2016 – Little Rock, AR

- Developed and maintained automated test systems for high-speed electrical connectors in R&D labs
- Created Python, TCL, and C scripts to interface with oscilloscopes, spectrum analyzers, TDRs, and VNAs, ensuring high-frequency signal accuracy for datacenter cables
- Analyzed cable and connector signal integrity and built automated reporting tools to streamline data analysis and visualization for engineering and quality teams
- Supported global manufacturing sites for quality control and troubleshooting (Little Rock, Guadalajara, Dongguan, Manila)

### **RF Engineer, Cellular, Microwave, & Radar — Northrop Grumman**

August 2011 - April 2014 – Morehead City, NC (MCAS Cherry Point) & Virginia Beach, VA (NAS Oceana)

- Designed, integrated, tested, and secured communication systems for Navy/Marine Corps tactical training ranges
- Established and maintained secure wireless systems across microwave, radar, and cellular frequency bands
- Tested DRFM (Digital Radio Frequency Memory) jamming methods against the Navy's Aegis Radar platform
- Performed RF signal analysis and troubleshooting with spectrum and network analyzers and other test equipment
- Conducted RF path analysis using MATLAB RF Toolbox and custom spreadsheet models
- Installed antennas and lightning protection on east coast radio towers (rescue-climbing certified)
- Authored technical documentation and test protocols for secure, reliable communication and sensor systems
- Procured and tracked hardware/software for DoD projects in asset inventory systems