

Diego Troy Lopez

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About

Excellence-driven Network & Software Engineer with experience in high-performance networking environments. Researcher in advanced network intrusion detection methods using machine learning. Recognized for productivity, leadership, and creativity in solving complex technical challenges. Serial reader and passionate about pushing boundaries of what is possible. Seeking high-impact service provider positions in network engineering.

Education

New York University | Cybersecurity, M.S. Sep 2023 - May 2025

- GPA: 4.0 | Summa Cum Laude

New York University | Computer and Data Science, B.A. Sep 2019 - May 2023

- Minor in Cybersecurity | 4x Dean's list Award | University Honor's Scholar | Cum Laude

Certifications

CompTIA Network+ | **CompTIA Security+**

Technical Skills

- **Languages:** Python, SQL, Bash, Java, C/C++, HTML/CSS, Scala, Golang, Pwsh, MATLAB
- **Concept Areas:** Network Engineering, Kubernetes Administration, Systems Engineering, Machine Learning, Automation, Data Engineering, DevOps, Optical Transport Networking, Stream Processing, Network Security

Work Experience

Senior Network Engineer | *NYU Research Technology* May 2023 – Present

Arista, SONiC, Linux, Ansible, Kubernetes, Prometheus, Zeek, Python, EVPN, OTN, BGP, Elastic

- Led management & operations of a high-performance research network spanning 100+ switches and OTN with end-to-end troubleshooting, monitoring, BGP/EVPN design, TCP optimization, documentation, expansion, onboarding
- Architected and implemented infrastructure-as-code framework for automating multi-vendor network configurations using Jinja2 templating and Ansible, CI/CD pipelines with Batfish, Containerlab, and Gitlab CI
- Architected and implemented data pipelines, monitoring, visualizations and alerting from scratch for network devices and OTN with gNMI, REST APIs, ERSPAN, Syslog, Prometheus, Zeek, Logstash, Elastic
- Led 2 major expansion projects from conception to completion, including business case, budgeting, rack layout and IPAM, deployment, network migrations of clients, documentation
- Deployed, maintained all monitoring and network management infrastructure over Kubernetes including NetBox, Telegraf, Prometheus, Grafana, Logstash, Documentation sites and Elasticsearch cluster
- Advocated for creation of, and wrote majority of user-facing documentation
- Promoted from Network Engineer in March 2024, managed and mentored team of 5 part-time employees

Network Engineer Intern & Program Lead | *NYU Research Technology* Aug 2022 - May 2023

ELK, Zeek, Linux, Kubernetes, Python, NMS, Organizational Leadership

- Implemented >100 Gbps north-south monitoring of network with Zeek cluster + XDP + Filebeat, built enriched data pipelines for visualization and alerting with ELK on Kubernetes
- Implemented LibreNMS for monitoring of all equipment over SNMP (Switches, OTN, PDU, Wireless)
- Led recruiting, marketing, operations, PM, finance, vision for 30 student internship program

IT Engineer Intern | *NYU IT* Sep 2019 - Aug 2022

WS ONE, Service Now, Windows Enterprise, Cortex XDR, InsightVM, Powershell, Bash

- Imaged, installed and maintained IT systems including desktops, laptops, servers, etc
- Managed IT infrastructure including Asset tracking, UEM & Device configurations, DNS
- Provided technical support for end-user requests including pswd resets, MFA, IT systems, Windows/Mac, AV

Publications

Always Be Pre-Training: Representation Learning for Network Intrusion Detection with GNNs

Right Place, Right Time: Intelligent Data Acquisition for Intrusion Detection in Science Networks

- (*W.I.P.*) Principal author, using Unsupervised ML to guide dynamic east-west traffic collection via ERSPAN

Conferences

Network Intrusion Detection Systems using Machine Learning

NYU 2023 Graduate Data Science Conference

- Evaluating assay of supervised, unsupervised, deep learning techniques for malicious network flow prediction
- Used feature engineering to enhance classifiers using domain specific knowledge from networking, cybersecurity

High Performance Throughput Optimizations in 100GbE Networks

NYU 2024 Arts & Sciences Undergraduate Research Conference

- Mentored team of 2 undergraduates evaluating various 100 GbE network cards over various NIC parameters, kernel parameters, TCP settings & algorithms to optimize network throughput
- Advocated for team to apply for, wrote, and received research microgrant for project
- Received "Best in Poster Presentation 2024" award

Projects

AutoZeekWatch | *Online Anomaly Detector for Zeek using KitNET* 2024

Python, Multiprocessing, Pandas, PySAD, PyPI, Systemd

- Plug-and-play NIDS leveraging unsupervised machine learning to detect anomalies in Zeek logs
- Led engineering efforts in ML engineering, packaging (PyPI), deployments

Data Processing for Neural-Controlled Environments | *NYU Dept of Neural Science* 2025

Kafka, Kubernetes, Docker, Python

- Team lead in developing a closed-loop, real-time fluorescence imaging pipeline that dynamically adjusts environmental variables based on neural activity from Miniscope cameras based on intelligence from AI models