Michael Costello

CONTACT INFORMATION

New York, NY

E-mail: costello.smtp@gmail.com

PROFESSIONAL EXPERIENCE

DriveNets, Ra'anana, IL

Senior Director, Infrastructure Platform Engineering   August 2022 to November 2023

- Network control, automation, and observability
- Large-scale, cloud native infrastructure and distributed systems to support the above

Netflix, Los Gatos, CA, US

Director of Engineering, Network Tools   November 2020 to June 2022

- Built and operated a compute and storage control plane
- Continued responsibilities from previous position

Engineering Manager, Network Tools   July 2016 to November 2020

- Built and operated the management platform for all Open Connect networks
- Organized network information and made it accessible and useful throughout Netflix

Content Delivery Operations Engineer   September 2014 to July 2016

- Ran the Netflix Open Connect Content Delivery Network
- Deployed Open Connect infrastructure to partner networks and Netflix-managed sites
- Automated partner deployment workflow
- Automated Open Connect system monitoring

Red Balloon Security, New York, NY, US

Scientist   August 2012 to July 2014

- Developed Symbiotic Embedded Machines, a host-based defense technology
- Developed the Firmware Reverse Analysis Konsole (FRAK), a firmware analysis framework
- Developed Autotomic Binary Structure Randomization (ABSR), a binary fortification technique
- Conducted offensive and defensive research

Columbia University Intrusion Detection Systems Lab, New York, NY, US

Research Staff Associate   June 2012 to July 2013

- Developed Symbiotic Embedded Machines
- Conducted offensive and defensive research

M.S. Graduate Research Assistant   September 2011 to May 2012

- Developed an embedded device vulnerability scanner
- Mentored other students on the scanner project

Google, Mountain View, CA, US

Platforms Engineering Intern   May 2011 to August 2011

- Worked as a member of the Google Fiber team
- Tested and evaluated CPE and access network gear
- Managed the test lab

Lafayette College Information Technology Services, Easton, PA, US

Associate Director of Network Services and Senior Network Engineer   October 2008 to August 2010

- Managed network engineer, network administrator, systems administrators, and programmers for this centralized IT department
- Oversaw budget and determined road map

- Project work consisted of an IPv6 initiative, 802.11 wireless redesign, data center improvements, and anycast DNS
- Continued responsibilities from previous position

Network Engineer   April 2006 to October 2008
- Led engineering design of an MPLS L3VPN network
- Operated network and systems
- Chaired the Security Working Group

Skyspan, Hazelton, PA, US

Director of Technology and Cofounder   August 2005 to June 2008
- Cofounded and co-owned this fixed-wireless broadband ISP
- Designed network and server infrastructure
- Worked on inside and outside plant
- Assisted with marketing, accounting, and customer service and support

Mercury Networks, Berea, OH, US

Director of Engineering   July 2004 to March 2006
- Was lead technologist for this network hardware and services supplier
- Designed data and voice networks for clients
- Consulted for sales force

PenTeleData, Palmerton, PA, US

Backbone Engineer   February 1999 to April 2004
- Was network engineer for this regional Internet Service Provider
- Operated network backbone
- Designed customer networks

PROFESSIONAL
SERVICE

NANOG

Board of Directors, Member   January 2023 to present

Board of Directors, Treasurer   January 2024 to present

Education Committee, Vice Chair   February 2021 to present

Program Committee, Member   March 2018 to February 2022

Community IX

Board of Directors, Member   June 2021 to present

Technical Committee, Member   March 2021 to present

EDUCATION

Columbia University, New York, NY, US

M.S., Computer Science, 2012

Bucknell University, Lewisburg, PA, US

B.S., Electrical Engineering and B.A., Physics, 2001
- *Magna cum laude*
- *Tau Beta Pi*, The Engineering Honor Society
- *Sigma Pi Sigma*, The Physics Honor Society
- *Sigma Xi*, The Scientific Research Society

University of Nottingham, Nottingham, UK

The Nottingham-Bucknell Engineering Exchange

PUBLICATIONS

[1] A. Cui, M. Costello, and S. J. Stolfo, "When Firmware Modifications Attack: A Case Study of Embedded Exploitation," in *Proceedings of NDSS 2013*, 2013. [Online]. Available: https://expertknobtwiddlers.com/publications/ndss-2013.pdf

[2] ——, "Hacking Cisco Phones," in *Chaos Communication Congress*, 2012. [Online]. Available: https://youtu.be/liW_u4vjdVs

[3] A. Cui, M. Costello, J. Kataria, and S. J. Stolfo, "Stepping P3wns," in *Black Hat USA*, 2013. [Online]. Available: https://youtu.be/8Q4JKMZN9LQ

[4] ——, "Stepping P3wns," in *DEF CON*, 2013. [Online]. Available: https://youtu.be/0wD8yDKMtXs