

Mike Fisk

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EDUCATION

Ph.D. Student, University of California San Diego, Computer Science and Engineering Department

Student of Professor George Varghese, Ph.D., MIT

MICRO Fellowship

Research focus: Network Intrusion Detection

M.S. in Computer Science, University of California San Diego, June 2001

GPA: 3.8/4.0

Computer Science graduate course work, Stanford, Fall 1998

B.S. in Computer Science, New Mexico Institute of Mining & Technology

Graduated May 1996 with Highest Honors

GPA: 3.8/4.0 cumulative, 3.8/4.0 in Computer Science

Tech Scholar; Eugene O'Connor Award for highest graduating GPA in department

Presidential & National Merit Scholarships

EMPLOYMENT

Los Alamos National Laboratory _____ **June 1996–Present**

Technical Staff Member, Network Engineering Group

Network Security Team _____ June 2001–Present

Led collaborative, multi-institutional research and development projects for integrated, high-performance intrusion detection systems including high-performance analysis algorithms, traffic characterization, multi-terabyte data indexing, visualization, and an underlying system for component based, distributed, and composable data handling.

- Developed high-speed algorithms for intrusion detection
- Developed Internet traffic characterization models
- Designed and built an extensible and efficient software architecture for distributed, composable data handling
- LANL network security architecture development

RADIANT _____ November 1999–June 2001

Member of the Research & Development in Advanced Networking Technology Team.

- High performance TCP optimizations
- Integration of grid computing into site security models
- Member, Cyber Security Technical Working Group, Department of Energy Office of the Chief Information Officer

Network Security Team _____ June 1999–November 1999

Integrated Security Management project for the DOE Office of Defense Programs. Conducted a study of cyber security practices and postures. Developed complex wide project plans and budgets. Project was subsumed in the NNSA Integrated Cyber Security Initiative.

- Member, Project Board
- Team Lead, Networks and Authentication Team
- Member, Architecture & Technical Solutions Teams

Network Services Team _____ June 1996–June 1999

Researched, designed, implemented, and evaluated in-house and third-party software and hardware used to provide reliable security, authentication, directory, e-mail, and WWW services to 15,000 network users:

- Lead architect for the Unclassified Protected Network firewall.
Earned a Distinguished Performance Award.
- Network security advisor & strategist for numerous projects involving multiple agencies.
- Enterprise authentication system design
- Linux kernel modifications supporting specialized network services and architectures
- Security Incident Response Team (SIRT) member
- Member of the Computer & Network Security Team of the Lab Information Architecture project

Center for Computing Sciences, Institute for Defense Analyses _____ **June 2001–Present**
Adjunct Staff Researcher

New Mexico Tech Computer Center _____ **November 1993–May 1996**
Systems Programmer, Academic Computing

Member of a small systems administration team responsible for campus-wide computing services including over 200 shared workstations of various flavors. In addition to general administrative duties, I led the development of automated network system administration, bug reporting & tracking systems, and WWW services.

Los Alamos National Laboratory _____ **May 1995–August 1995**
Network Services Team, Network Engineering Group

Responsible for the design and implementation of custom and third-party software and systems to provide enterprise network services to 15,000 network users. My projects included integrated directory services, web and e-mail services, and automated system administration and configuration management.

Los Alamos National Laboratory _____ **May 1993–January 1995**
ICN Consulting Office

Employed full-time on summer and winter breaks (4 months/year) as a member of the ICN Consulting Office, a user support center for scientific computing. I also worked on several software development projects including early Gopher and WWW applications.

University of New Mexico _____ **September 1990–June 1991**
Intern, Physics and Astronomy Department

Radio interferometry signal processing on Sun, VAX-VMS, and Convex machines using the National Radio Astronomy Observatory's AIPS software package.

PUBLICATIONS

- [1] Mike Fisk and George Varghese, "Agile and scalable analysis of network events," in *Proceedings of SIGCOMM Internet Measurement Workshop*. ACM, Nov. 2002.
- [2] Gina Fisk, Mike Fisk, Christos Papadopoulos, and Josh Neil, "Eliminating steganography in internet traffic with active wardens," in *Proceedings of 5th Workshop on Information Hiding*. To appear 2002, Springer-Verlag.
- [3] Cristian Estan, George Varghese, and Mike Fisk, "Counting the number of active flows on high speed links," in *Sigcomm*. ACM, Aug. 2002, Poster.
- [4] Mark Gardner, Wu-chun Feng, and Mike Fisk, "Dynamic right-sizing in FTP (drsFTP): An automated technique for enhancing grid performance in user-space," in *Proceedings of the 11th IEEE International Symposium on High Performance Distributed Computing (HPDC-11)*, July 2002.
- [5] Mike Fisk, "Causes and remedies for social acceptance of network insecurity," in *Workshop on Economics and Internet Security*. University of California Berkeley, May 2002.
- [6] Wu-chun Feng, Mike Fisk, Mark Gardner, and Eric Weigle, "Dynamic right-sizing: An automated, lightweight, and scalable technique for enhancing grid performance," in *Proceedings of the 7th International Workshop on Protocols for High Speed Networks (PfHSN 2002)*. IFIP/IEEE, Apr. 2002.
- [7] Mike Fisk, *Enterprise Networking: Multilayer Switching and Applications*, chapter "Network Service Availability and Performance", Idea Group, Dec. 2001.
- [8] Mike Fisk and Wu-chun Feng, "Dynamic Right-Sizing: TCP flow-control adaptation," in *SC: The High-Performance Systems and Network Conference*. ACM/IEEE, Nov. 2001, Poster.
- [9] Mike Fisk and Wu-chun Feng, "Dynamic right-sizing in TCP," in *Los Alamos Computer Science Institute Symposium*, Oct. 2001.
- [10] Jalal Al-Muhtadi, Wu-chun Feng, and Mike Fisk, "Cyber-security infrastructure for virtual supercomputing," in *Proceedings of Los Alamos Computer Science Institute Symposium*, Oct. 2001.
- [11] William Johnston (ed.), "Security in open scientific computing environments," Report of the 4th Joint DOE Office of Science - Office of Defense Programs Cybersecurity Workshop, Jan. 2001.
- [12] Mike Fisk, "Automating the administration of heterogeneous LANs," in *Proceedings of the Tenth Conference on Large Installation System Administration*. USENIX, Oct. 1996.

Research Areas:

Network Measurement [1, 3].
Secure Distributed Systems [2, 5, 10, 11].
Large Delay-Bandwidth TCP [4, 6, 8, 9].
Enterprise Networks [7, 12].

Venues:

Conference [4, 9, 10, 12].
Workshop [1, 2, 5, 6, 11].
Book Chapter [7].
Conference Poster [3, 8].

By Year:

2002 [1, 2, 3, 4, 5, 6].
2001 [7, 8, 9, 10, 11].
1996 [12].

TALKS

Not including conference talks for above papers.

Invited speaker, Real World Intrusion Detection Conference, SANS 2002

Middlebox Communications, IETF49, December 2000.

High Performance Networking, Extreme Linux session, Linux Expo 1998.

RESEARCH PROJECTS

Sensilla project, co-author (George Varghese, UCSD, PI), funded by National Institute of Standards and Technology (NIST) Critical Infrastructure grant for \$612,826 for FY 2001-2002.

PI for various federally funded R&D efforts at Los Alamos.

PROFESSIONAL ACTIVITIES

As a member of the Directed Research Strategy Team, reviewed and recommended proposals for funding under the approx. \$30M Laboratory Directed Research & Development program, LANL, 2002-present

Reviewer for ACM SIGCOMM, IEEE Infocom, IEEE/ACM SC, Software - Practice & Experience

Local planning committee for ACM SIGCOMM 2001

HONORS & AWARDS

UC MICRO Fellowship, 2000-2001

Distinguished Performance Award, Los Alamos National Laboratory, 1998

Eugene O'Connor Award for highest graduating GPA, 1996

First place, ACM regional programming contest, 1995

National Merit Finalist, 1992; Scholarship 1992-1996

Finalist Team (Computational fluid dynamics simulation on a Cray 2), New Mexico High School Supercomputing Challenge, 1992

This CV is for public release.

Additional information including references, transcripts, and security clearances available upon request.