

Curriculum Vitae of Frank Adelstein

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Education

- PhD **The Ohio State University**
Computer Science, June 1995
Dissertation Title: *Network and Operating Systems Support for Multimedia*
Advisor: Mukesh Singhal
- MS **The Ohio State University**
Computer Science, Dec. 1990
- BS **University of Michigan**
Computer Engineering, May 1988

Areas of Expertise

- Computer security
- Digital forensics
- Networking
- Systems
- Distributed Computing

Positions Held

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| Founder
<i>NFA Digital, LLC, Ithaca, NY</i> | July 2017 – present |
| Director of Engineering
<i>Cayuga Networks, Ithaca, NY</i> | May 2014 – Feb 2017 |
| Software Engineer III
<i>GammaTech, Ithaca NY</i> | Sep 2012 – May 2013 |
| Senior Staff Scientist
<i>ATC-NY, Ithaca NY</i> | Jan 1999 – June 2012 |

Partner <i>MyCause.com, Ithaca, NY</i>	Jul 1998 – Apr 2008
Postdoctoral Research Associate <i>Cornell University/Xerox Design Research Institute, Ithaca, NY</i>	Sep 1995 – Dec 1998
Graduate Teaching Assistant <i>Ohio State University, Computer and Information Science, Columbus, OH</i>	Mar 1993 – Apr 1995
Administrative Assistant/System Programmer <i>Ohio State University, Computer and Information Science, Columbus, OH</i>	Sep 1989 – Sep 1994
System Programmer <i>Amdahl Corp, Sunnyvale, CA</i>	Aug 1988 – Aug 1989
Consultant <i>University of Michigan Computing Center, Ann Arbor, MI</i>	Oct 1987 – Apr 1988
Programmer <i>Avtron Manufacturing, Inc, Cleveland OH</i>	Jun 1986 – Aug 1987

Books

Frank Adelstein, Sandeep Gupta, Golden G. Richard, III, and Loren Schwiebert, **Fundamentals of Mobile and Pervasive Computing**, McGraw-Hill Professional, New York, 2005, 404 pages, ISBN: 0071412379.

Journal Papers

Rachel Zax and Frank Adelstein, **FAUST: Forensic Artifacts of Uninstalled Steganography Tools**, Journal of Digital Investigation, 6(1-2):25-38, 2009.

The Common Digital Evidence Storage Format Working Group (Frank Adelstein, Brian Carrier, Eoghan Casey, Simson Garfinkel, Chet Hosmer, Jessie Kornblum, James Lyle, Marcus Rogers, Phil Turner), **Standardizing digital evidence storage**, Communications of the ACM, 49(2):67-68, February, 2006.

Frank Adelstein, **Live forensics: diagnosing your system without killing it first**, Communications of the ACM, 49(2):63-66, February, 2006.

Frank Adelstein, Prasanth Alla, Robert Joyce, and Golden G. Richard, III, **Physically Locating Wireless Intruders** in Journal of Universal Computer Science, 11(1), January 2005.

Frank Adelstein, **MFP: The Mobile Forensic Platform**, International Journal of Digital Evidence, 2(1), 2003.

Frank Adelstein, Golden G. Richard, III, and Loren Schwiebert, **Distributed Multicast Tree Generation with Dynamic Group Membership**, Computer Communications, 26(10):1105-1128, June 20, 2003.

Frank Adelstein and Mukesh Singhal, **Real-Time Causal Ordering in Multimedia Systems**, Journal of Telecommunication Systems, Modeling, Analysis, Design, and Management, No. 7, July 1997, pp. 59-74.

Frank Adelstein, Golden Richard, Loren Schwiebert, Rick Parent, and Mukesh Singhal, **A Distributed Graphics Library System**, Software-Practice and Experience, 24(4):363-376, April 1994.

Refereed Conference Papers

Dianne Dietrich and Frank Adelstein, **Archival Science, Digital Forensics, and New Media Art**, presented at the 15th Digital Forensics Research Workshop (DFRWS15), Philadelphia, PA, August 2015.

Hajime Inoue, Frank Adelstein, and Robert Joyce, **Visualization in Testing a Volatile Memory Forensic Tool**, presented at the 11th Digital Forensics Research Workshop (DFRWS11), New Orleans, LA, August 2011.

Hajime Inoue, Frank Adelstein, Matthew Donovan, and Steve Brueckner, **Automatically Bridging the Semantic Gap Using a C Interpreter** proceedings of the 2011 Annual Symposium on Information Assurance Albany, NY. June 7-8, 2011.

Frank Adelstein, and Calra Marceau, **Snapshot Filtering Based On Resource-Usage Profiles** proceedings of the Fourth International IEEE Workshop on Systematic Approaches to Digital Forensic Engineering (SADFE 09), Berkeley, California, pages 15-21, May 2009.

Stephen Brueckner, David Guaspari, Frank Adelstein, and Joseph Weeks, **Automated Computer Forensics Training in a Virtualized Environment** presented at the 8th Digital Forensics Research Workshop (DFRWS08), Baltimore, PA, August 2008.

Robert Joyce, Judson Powers, and Frank Adelstein, **MEGA: A Tool for Mac OS X Operating System and Application Forensics** presented at the 8th Digital Forensics Research Workshop (DFRWS08), Baltimore, MD, August 2008.

Frank Adelstein and Robert Joyce, **File Marshal: Automatic Extraction of Peer-to-Peer Data** presented at the 7th Digital Forensics Research Workshop (DFRWS07), Pittsburgh, PA, August 2007.

Frank Adelstein, Yun Gao, and Golden G. Richard III, **Automatically creating Realistic Targets for Digital Forensics Investigations** presented at the fifth Digital Forensics Research Workshop (DFRWS05),

New Orleans, LA, August 2005.

Frank Adelstein, Prasanth Alla, Robert Joyce, and Golden G. Richard, III, **Physically Locating Wireless Intruders** in Proceedings of IEEE 2004 IAS Conference, Las Vegas, Nevada, April 2004.

Frank Adelstein, **The Mobile Forensic Platform**, presented at the second Digital Forensics Research Workshop (DFRWS02), Syracuse, NY, August 2002.

Frank Adelstein, **ASTER: Active Smart Targets for Effective Response**, presented at the 3rd International System Security Engineering Association (ISSEA) Conference, Orlando, FL, March 2002.

Frank Adelstein, Golden Richard, and Loren Schwiebert, **Building Dynamic Multicast Trees in Mobile Networks**, 1999 ICPP Workshop on Group Communication, pages 17-22, September 1999.

Frank Adelstein, Fred Hosch, Golden Richard, and Loren Schwiebert, **Bessie: Portable Generation of Network Topologies for Simulation**, IEEE International Conference on Computer Communications and Networks (IC3N), Lafayette, LA, pages 787-792, October 1998.

Frank Adelstein and Mukesh Singhal, **Real-Time Causal Message Ordering in Multimedia Systems**, Presented at the 15th International Conference on Distributed Computing Systems, Vancouver, British Columbia, June 1995.

Frank Adelstein and Mukesh Singhal, **Real-Time Causal Message Ordering**, Presented at the 3rd ORSA Conference on Telecommunication, Boca Raton, Florida, March 1995.

Frank Adelstein and Mukesh Singhal, **Priority Ethernets: Multimedia Support on Local Area Networks**, Presented at the ISMM Int'l Conf. on Multimedia Systems and Applications, 1994.

Invited Talks

Member of invitation-only blue ribbon panel at NSF sponsored **National Workshop on Redefining Cyber Forensics (NWRFC)**, Windsor Locks, CT, May 23-24, 2017.

A View from the Trenches: World "Wild" Web Security, guest lecture for CSE8990 Graduate Seminar, at Wayne State University, Detroit, MI, February 28, 2017.

Digital Forensics, guest lecture for CS5434 Defending Computer Networks class at Cornell University, Ithaca, NY, November 18, 2014.

Forensic Artifacts from the eMule P2P Client presented at the U.S. Department of Defense Cyber Crime Conference 2011, Atlanta, GA, January 27, 2011.

Live Forensics, presented at the 14th ACM Conference on Computer and Communication Security, Alexandria, VA, October 31, 2007.

Hide and Seek: Advancements in Digital Evidence Recovery, served on a panel session at the NIJ Conference, Arlington, VA, July 2007.

Live Forensics, presented at the 5th Annual Recent Advances in Information Assurance, Network and Software Security (IANSS) Symposium, St. Cloud State University, St. Cloud, MN, May 2, 2007.

ATC-NY & Poly Collaborative Forensic Research, presented at the Center for Advanced Technology in Telecomputation (CATT), Polytechnic University, Brooklyn, NY, September 2005.

ASTER—Active Smart Targets for Effective Response, presented at Polytechnic University, Brooklyn, NY, October 2004.

Incident Response (a.k.a. Notes from the Napkin of Knowledge), presented (with Robert Joyce) at The University of Albany, Albany, NY, April 2004.

Live Computer Forensics—Catching Attackers Red-Handed, presented (with Robert Joyce) at 2004 NYS Annual Cyber Security Conference, Albany, New York, April 2004.

The Mobile Forensics Platform, presented at the Columbus Chapter of InfraGuard, Columbus, OH, February 2004.

The Mobile Forensic Platform, presented at the SEC-WOG group at The Ohio State University, Columbus, OH, January 2004.

The Mobile Forensic Platform presented at the CRIME (Computer Related Investigations, Management & Education) Meeting, Portland, OR, October 2003.

Wireless Security, presented at Wayne State University, Detroit, MI, March 2002.

Multimedia for the Masses, presented at the University of New Orleans, New Orleans, LA, August 1995.

Patents

Stephen K. Brueckner, Frank N. Adelstein, Haim Yehuda Bar, and Matthew P. Donovan *Automated execution and evaluation of network-based training exercises*, US Patent **10,068,493**, filed June 30, 2016, issued September 4, 2018.

Judson Powers, Matthew P. Donovan, Frank N. Adelstein, Michael Kently, and Stephen K. Brueckner, *Remote Collection of Computer Forensic Evidence*, US Patent **8,862,803**, filed May 31, 2011, issued October 14, 2014.

Frank N. Adelstein, Matthew A. Stillerman, and Robert Joyce, *Remote Collection of Computer Forensic Evidence*, US Patent **8,474,047**, filed May 7, 2012, issued June 25, 2013.

Frank N. Adelstein and Carla Marceau, *Digital forensic analysis using empirical privilege profiling (EPP) for filtering collected data*, US Patent **8,458,805**, filed May 20, 2009, issued June 4, 2013.

Frank N. Adelstein, Haim Bar, Prasanth Alla, and Nikita Proskourine, *Attack correlation using marked information*, US Patent **8,286,249**, filed May 18, 2010, issued October 9, 2012.

Frank N. Adelstein, Matthew A. Stillerman, and Robert Joyce, *Remote Collection of Computer Forensic Evidence*, US Patent **8,176,557**, filed February 12, 2009, issued May 8, 2012.

Frank N. Adelstein, Judson Powers, Robert A. Joyce, and Derek Bronner, *Extensible Software Tool for Investigating Peer-to-Peer Usage on a Target Device*, US Patent **7,886,049**, filed August 12, 2008, issued February 8, 2011.

Frank N. Adelstein, Haim Bar, Prasanth Alla, and Nikita Proskourine, *Attack correlation using marked information*, US Patent **7,748,040**, filed March 22, 2005, issued June 29, 2010.

Frank N. Adelstein, Matthew A. Stillerman, and Robert Joyce, *Remote Collection of Computer Forensic Evidence*, US Patent **7,496,959**, filed June 23, 2003, issued February 24, 2009.

Grants

Phase 1 SBIR US Army grant, **USB Steward**, \$70,000, November 2010 – May 2011.

National Institute of Justice grant, **P2P Marshal Continuation**, \$80,000, FY 2010, Grant #: 2009-FD-CX-K004.

National Institute of Justice grant, **P2P Marshal Continuation Funding**, \$199,918, FY 2009, Grant #: 2009-FD-CX-K004.

National Institute of Justice grant, **P2P Forensic Training**, \$216,845, FY 2009, Grant #: 2009-DN-BX-K211.

Phase 1 SBIR Air Force grant, **CYDEST: CYber DEfense Simulation Trainer**, \$99.9K, April 2005 – January 2006.

National Institute of Justice grant, **File Marshall: Automatic Analysis of Peer-to-Peer Usage**, \$370,121, FY2009, Grant #: 2006–DN–BX–K013.

Phase 1 Army SBIR, **Intra Vehicle Adaptive Computing with SQUAWB (Secure QoS-enhanced Ultra Wide Band)**, \$69.9K, February 2004 – August 2004.

DARPA Phase 2 SBIR grant, **ASTER: Active Smart Targets for Effective Response**, \$750K, January 2003 – April 2005.

DARPA Phase 1 SBIR grant, **ASTER: Active Smart Targets for Effective Response**, \$99K, October 2000 – June 2001.

Air Force Phase 2 SBIR grant, **Mobile Platforms to Support Network Forensics**, \$735K, July 2002 – July 2004.

Air Force Phase 1 SBIR grant, **Mobile Platforms to Support Network Forensics**, \$98.8K, January 2003 – April 2005.

OSD Phase 1 grant, **Multipolicy Information Assurance for Microsensor Networks**, \$98.9K, January 2000 – July 2000.

Professional Activity

Editorial Board

Journal of Digital Forensics, Security, and Law.

Referee/Reviewer

Digital Investigation, Computer Communication, Digital Forensics Research Workshop (US and EU), Security and Privacy.

NSF grant review panel.

DHS grant review panel.

Program Committees

Digital Forensic Research Workshop (US and EU).

Board of Directors

Secretary, Digital Forensics Research Workshop (DFRWS.org).

Teaching Experience

Classes

Ohio State University CIS 459.21 **Programming in C**: Taught 4 times from 1994-1995.

Ohio State University 459 **Programming in Fortran**: Taught 2 times from 1994-1995.

Developed and taught multiple 1-day training courses for state and local law enforcement on Peer-to-peer forensics, funded by the National Institute of Justice (2009-2010).

Tutorials

Mobile Security, half day tutorial, 20th IEEE International Performance, Computing, and Communications Conference (IPCCC 2001), Phoenix, AZ, April 4-6, 2001.

Mobile and Wireless Security, half-day tutorial, 17th Annual Computer Security Applications Conference (ACSAC'01), New Orleans, LA, December 10-14, 2001.

Live Forensics, full day tutorial (with Golden Richard), 23rd Annual Computer Security Applications Conference (ACSAC'06), Miami, FL, December 11-14, 2006.

Live Forensics, full day tutorial (with Golden Richard) 16th Usenix Security Symposium, Boston, MA, August 6-11, 2007.

Live Forensics, full day tutorial (with Golden Richard) 2008 Usenix Annual Technical Conference, Boston, MA, June 22-27, 2008.

Learning Reverse Engineering: A Highly Immersive Approach, Two day tutorial (with Golden Richard) 2009 Usenix Security Symposium, Montreal, QB, Canada, August 10-11, 2009.

Collaborations

Julie Baker (ATC-NY), Jordan Bonney (ATC), Brian Carrier (Basis Technology), Eoghan Casey (University of Lausanne), Dianne Dietrich (Cornell Library), Matthew Donovan (ATC-NY), Tom Fine (OSU), Zygmunt Haas (Cornell), David Guaspari (ATC-NY), Sandeep Gupta (ASU), Jim Inoue (ATC-NY, Cayuga Networks), Robert Joyce (ATC-NY), Dexter Kozen (Cornell), Carla Marseau (ATC-NY), Michael McDougall (GramaTech), Rick Parent (OSU), Judson Powers (ATC-NY), Ranga Ramanujan (ATC), Steve Romig (OSU), Golden G. Richard III (UNO), Vassil Roussev (UNO), Loren Schwiebert (WSU), Mukesh Singhal (OSU), Stuart Staniford (Cayuga Networks), Matt Stillerman (ATC-NY), Daniel Tingstrom (ATC-NY, Cayuga Networks), Wietse Venema (IBM), Rachel Zax (ATC-NY).